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Academic incentives impact on increasing seventh - graders physical activity during leisure time

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2008

ABSTRACT

Academic Incentives Impact on Increasing Seventh-Graders Physical Activity During Leisure Time

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M.A., MaryGrove, 2001
B.S., Lock Haven University, 1994

Doctoral Study Submitted in Partial Fulfillment
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Doctor of Education
Teacher Leadership

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ABSTRACT

Recent research clearly demonstrates that a decrease of physical activity has occurred among young people. Hence, the purpose of this study was to examine the impact of external motivation on physical activity. Drawn from self-determination theory, the specific research question examined if academic incentives effectively motivated 7th grade students to participate in a 3-week fitness program. A quasi-experimental pre-post design examined treatment and control groups drawn from a sample of 24 students from three physical education classes. The treatment group received academic incentives whereas the control group received no external incentives but were asked to complete the same fitness Program. Independent-sample t-test of the physical activity section of the 2005 Youth Risk Behavior System Survey (YRBS) revealed no group differences on the posttest. Dependent-sample tests indicated little pretest-posttest change in YRBS scores, leading to the conclusion the academic incentive had no major effect on students' motivation to be physically active outside the school environment. This research contributes to positive social change by provided additional insight into what motivates or does not motivate 7th graders to be physically active.

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DEDICATION

I would like to dedicate this dissertation to Bethany, Philip, Daniel, Micah, Abigail, Nathan, Isaiah, and baby Timothy. Last but not least, my Lord and Savior Jesus Christ for giving me the vision to become a Doctor of Education, equipping me with the wisdom and understanding to complete each phase along this journey. We can truly do all things through Christ that strengthens us.

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SECTION 1:

INTRODUCTION TO THE STUDY

Introduction

Physical activity is an important component of optimal health (Corbin & Lindsey, 1991). Diet and motivation to participate in regular physical activity are key factors in maintaining good health (World Health Organization [WHO], n.d.a). There are mental, emotional, physical, social, and spiritual benefits associated with participating in physical activity on a regular basis (Corbin & Lindsey, 1991; WHO, n.d.a). Additionally, the benefits of physical activity include improving muscular strength, controlling weight, and maintaining a healthy blood pressure in addition to relieving anxiety and stress and improving one's self-esteem (Centers for Disease and Control [CDC], n.d.a). Various studies, governmental agencies, and professional organizations have been involved in advocating for the significance of participating in moderate physical activity for 30 minutes, five out of the seven days of the week (Bryan, 2006; CDC, n.d.b; American Alliance for Health, Physical Education, Recreation & Dance [APPHERD], 2007). The CDC (n.d.c) has created educational programs

like VERB, Powerful Bones. Powerful Girls, and BAM! to motivate and educate children regarding the importance of participating in moderate physical activity on a daily basis.

Despite these efforts, research indicates "only 25 percent of students in grades 9 through 12 engaged in moderate physical activity for at least 30 minutes on five or more of the previous seven days in 2003" (United States Department of Health and Human Services [USDHHS], 2005a, p. 1). Yet with the knowledge of the benefits linked to participating in moderate physical activity, the level of inactivity is expected to increase from 60 percent to 73 percent worldwide by 2020 (WHO, n.d.b).

In order to improve the physical wellbeing of young people, it is necessary for researchers to identify the diverse motivational factors that are effective, with this generation (Standage, Duda, Ntoumanis, 2003). Ryan and Deci's (2000) self-determination theory is being used to offer insight on the subject of motivation and physical activity. The self-determination theory identified three types of motivation. This framework provides the foundation for motivation and reinforces literature and research

centered on intrinsic motivation, external motivation, and amotivation (Ryan & Deci). Despite successful applications of the self-determination theory in the field of education (Deci, Connel, & Ryan, 1989; Lepper, Corpus, & Iyengar, 2005), research utilizing this theoretical framework has been scarce in terms of its relationship to improving physical activity.

In addition to the self-determination theory, an examination of the cultural and socio-economic conditions within schools districts, as well as an examination of state and school policy regarding physical education requirements within schools can provide insight into patterns of physical activity. Parental support, and homw environment can play a significant role in children's level of motivation to be physically active (Wlodkowski & Jaynes, 1990; WHO, n.d.a).

Motivating adolescents to be physically active is important (Ntoumanis, 2005). However, many researchers have divergent claims regarding the best means by which to motivate children (Ryan, 1982; Deci & Ryan, 2000). The works of Middleton (2006), and Devahl, King, and Williamson (2005) have addressed the role that academic incentives had

for college students. There has been a scarcity of research focusing on academic incentives conducted on middle school students. Thus, this pretest-posttest control group study bridges the gap in research by utilizing the 2005 YRBS survey to examine the effectiveness of academic incentives for increasing the time seventh-graders spent participating in moderate physical activity during their leisure time.

In conjunction with the works of Ryan and Deci's (2000) self-determination theory, the experimental group was rewarded with four points added onto their nine weeks grade for completing a three-week fitness challenge. This study goes into further discussion in support of the theoretical framework of the self-determination theory, academic incentives, and the concepts of physical activity in Chapter 2.

Statement of the Problem

There has been a measurable decrease worldwide in physical activity among young people during their leisure time and the physical, social, and economic dilemmas directly connected to being physically inactive (CDC, n.d.a). Research from the Middle School Youth Risk Behavior Survey (2003) reported 69 percent of seventh graders across

states participate in physical activities for 20 minutes or more on at least three of seven days preceding the survey and 58 percent of the students played on sports' teams.

Recommendation for children to participate in moderate physical activity varies from country to country. The WHO (n.d.b) and the CDC (n.d.b) recommended that adolescents participate in physical activity for 30 minutes of moderate intensity physical activity on a daily basis by performing. The United Kingdom Health Education Authority (United Kingdom Department of Health, 2004) and the Australian Government Department of Health and Aging (2007) recommended at least 60 minutes of daily moderate to vigorous physical activity for children. Corbin and Lindsey (2005) suggested the 30 minutes goal could be achieved in sessions lasting at least 10 minutes each or one 20 minute bout and one 10 minute bout or a time combination equaling 30 minutes.

Though the United Kingdom, Australian Department of Health, and CDC standards by which children should participate in physically active vary from 30 minutes to 60 minutes. Their objectives are one in the same: to increase the amount of time children are physically active during

their leisure time (United Kingdom Department of Health, 2004; Australian Government Department of Health and Aging, 2007; CDC, n.d.b).

Despite these efforts, research revealed that 60 percent of the world's population does not meet the recommendation of 30 minutes of moderate intensity physical activity on a daily basis (WHO, n.d.b). Currently, children's opportunities to participate in physical education during school hours are declining. While at the same time youth are choosing to spend less time participating in leisure time activities on their own(WHO n.d.b). A recent report by an Australian Government Initiative (2007) suggested, "Some children are not spending as much time engaged in physical activity, particularly after school, as children in previous generations. Recent studies suggest about 40 percent of children are missing out on outside school hours sporting activity" (p. 1).

Data taken from 1988-2005 revealed that the proportion of the U.S. population in 36 participating states witnessed a decrease in no leisure-time physical activity from 31 percent in 1989 to 25% in 2005 (CDC, n.d.a). "Only about

one-half of U.S. young people (ages 12-21 years) regularly participate in vigorous physical activity. One-fourth reported no vigorous physical activity and 14% reported no recent vigorous or light-to-moderate activity" (USDHHS, 2005b, p. 1). Corbin and Lindsey (2005) argued that the health goal of the United States is to increase the percentage of teens who do moderate lifestyle physical activity at least five days a week to 35 percent over the next few years.

Physical activity levels of this next generation have decreased over the past decades (CDC, n.d.c). However, there are few research studies that utilize academic incentives or external motivation methods to improve physical activity levels for this targeted population. As a result, there is a need for further investigation and exploration to determine the correlation between academic incentives and their potential impact on improving physical activity.

Purpose of the Study

The purpose of this pretest-posttest control-group study was to explore the effectiveness of academic incentives for motivating an experimental group of seventh-

grade middle school students to increase physical activity during their leisure time. Adolescents are at a pivotal point in their habit formation for prevention of long term inactive lifestyle behaviors as adults (USDHHS, 2005a). These lifestyle behaviors are patterned after choices that are made during this period of their lives (Glasser, 1986). "Living an active life is more a matter of personal choice" (WHO Regional Office of Europe, n.d.). As people grow older, they frequently choose to become less active. Adolescence is the time in which children choose a lifestyle of being sedentary or physically active (CDC, n.d.a). Those who choose not to be physically active in this critical time in their life choose not to be physically active in adulthood (Stewart & Mitchell, 2003). Therefore, this study examined the theory of self-determination, which illustrates intrinsic motivation, extrinsic motivation, and amotivation to comprehend the motivational factors associated with adolescence decision to be physical active (Richards & Deci, 2000).

Research Question and Hypothesis

How does an academic incentive externally motivate seventh-grade students to participate in a three-week

fitness program? The following hypotheses were tested within the study and are embedded in the models.

1. H_o = Academic incentives added onto a nine week's grade will have no significant effect on students' motivation to participate in moderate physical activity during their leisure time.
2. H_1 = Academic incentives added onto a nine week's grade will have a significant effect on students' motivation to participate in moderate physical activity during their leisure time.

Rationale

The purpose of this quantitative study, grounded in the self-determination theory, was to examine the impact external motivation had on physical activity. This study evaluated literature and research connected to Ryan and Deci's (2000) model of the self-determinanation theory and how it explains motivation and its relationship to physical activity. Children at the middle school level often choose to participate in activities that they enjoy or find interesting (Tudge & Caruso, 1989). This internal drive is a key element for children at this age level to start, maintain, and complete a task (Ryan & Deci, 2000). There

are times where external rewards can influence adolescents to choose to participate in an activity that they normally do not take part in but the long-term effects of the external motivator comes into question (Ryan & Deci, 2000).

"Much of the recent research on student motivation has rightly centered on the classroom, where the majority of learning takes place and where students are most likely to acquire a strong motivation to gain new knowledge" (Renchler, 1992, p. 1). Educators and psychologogist have debated about the ways to promote academic intrinsic motivation in children to promote life-long learners (Ryan, 1982; Deci, Connell, & Ryan 1989; Ryan & Deci, 2000).

In fact, research on environmental events has centered on independent measures with controversial issues surrounding the potential undermining affects external motivtors have on intrinsic motivation (Ryan & Deci, 2000). A question remains within academia: How can physical educators motivate individuals who are not intrinsically motivated to be physically active during their leisure time? Although a number of external rewards such as stickers, praise and money have been used in research to externally motivate school performance (Ryan, 1982), there

is a paucity of research on methods to externally motivate children found to be not intrinsically motivated to participate in physical activity.

Appropriate actions could insure that the various environments - physical, social, cultural, economic, political, and psychological conditions in which people live encourage and enable all population groups to become and remain physically active throughout life. (WHO, n.d.c, Corbin & Lindsey 2005).

In addition to Ryans' statement on environment and motivation, Wlodkowski and Jaynes (1990) argued that the society in which children live affects motivation. Environmental factors such as physical education curriculum, parental support, the community, school administration, and peers are elements within the culture that influence the degree to which an individual is motivated to be physically active (Wlodkowski & Jaynes, 1990; CDC, 2005).

In addition to this study focusing on motivation, a model within this study observed how the environment externally controls and influences children's ability to participate in physical activity during school hours,

within the community, and at home during their lesuire time. The literature review examined environmental issues such as school and state policy regarding physical education classes, and at how the national physical education standards are influencing physical acitivty opportunities for students in addition to community and parent influences.

Significance of the Study

There are health benefits for those who accumulate at least 30 minutes of moderate activity five out of seven days a week (Corbin & Lindsey, 1991; CDC, 2006). However, for the past two decades, children have become less active during their leisure time. Obesity is increasing (CDC, 2006). The significance of the review addressed this problem by offering an experimental Group A an academic incentive as motivation to increase moderate physical activity levels in seventh-graders and used the 2005 YRBS survey as it method of measurement. Eidenberger and Cameron (1996) reported that there have been varied results over the years regarding the effects of external motivators. Thus, the knowledge generated from the pretest-posttest control-group design provides stakeholders with meaningful

data concerning the correlation between academic incentives and seventh-grader students increasing their physical activity levels.

This study could provide a tool to the professional community and stakeholders who are directly connected to improving physical activity levels in children consequently eliciting further investigation. "Increasing physical activity is a societal, not just an individual problem. Therefore it demands a population-based, multi-sector, multi-disciplinary, and a culturally relevant approach" (WHO, n.d.b, p. 1). This societal change will also require time and the joint efforts of many stakeholders within the local, state, national levels (WHO, 2004). In turn, the objective was to provide stakeholders with insights how academic incentives impact student choices about being physically active and generate new methods the professional community could utilize to bring social change.

Definitions of Terms

For the purpose of this study, definitions of different motivation types, physical activity levels as well as health related terms are explained in simple terms.

Body Mass Index (BMI): A method of addressing body composition (Corbin & Lindsey, 2005, p. 318).

Extrinsic Motivation: Behavior directed by incentives or rewards (Ryan & Deci, 2000).

In-activity: One who does not engage in any regular pattern of physical activity beyond daily functioning? Less than 10 minutes total per week of moderate or vigorous-intensity

Lifestyle activities: (i.e., household, transportation, or leisure-time activity) (CDC, n.d.d, p. 1).

Leisure Time: Also called discretionary time, it is time free from work or other commitments (Corbin & Lindsey, 2005, p 321).

Intrinsic Motivation: It is behavior that controlled by ones own desires (Richard & Deci, 2000).

Moderate Physical Activity: Any type of exercise performed at an intensity equal to brisk walking (Corbin & Lindsey, 2005, p. 321).

Obesity: Is the condition of being very over weight or having a very high percentage of body fat (Corbin & Lindsey, 2005, p. 321).

Overweight: Is having weight in excess of normal (Corbin & Lindsey, 1991, p. 140).

Physical Activity: Movement using the larger muscles of the body; includes sports, dance, and activities of daily life; may be done to accomplish a task, for enjoyment, or to improve physical fitness (Corbin & Lindsey, 2005, p. 321).

Recommended Physical Activity: Reported moderate-intensity activities in a usual week (i.e., brisk walking, bicycling, vacuuming, gardening, or anything else that causes small increases in breathing or heart rate) for greater than or equal to 30 minutes per day, greater than

or equal to 5 days per week; or vigorous-intensity activities in a usual week (i.e., running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate) for greater than or equal to 20 minutes per day, greater than or equal to 3 days per week or both. This can be accomplished through lifestyle activities (i.e., household, transportation, or leisure-time activities) (CDC, n.d.d, p. 1).

Sedentary: Being inactive or participating in very little physical activity (Corbin & Lindsey, 2005, p. 322).

Vigorous-Intensity Physical Activity: May be intense enough to represent a substantial challenge to an individual and refers to a level of effort in which a person should experience: the effort a healthy individual might expend while jogging, mowing the lawn with a non-motorized push mower, participating in high-impact aerobic dancing, swimming continuous laps, or bicycling uphill, carrying more than 25 lbs up a flight of stairs, standing or walking with more than 50 lbs for example (CDC, n.d.d, p. 1).

Assumptions and Limitations

An assumption of the study is that the participating students would attend and adequately participate in sixty minutes of physical activity five days a week over a three-week period

There were a number of limitations to the research. First, the participants were predominantly European American. Therefore, the study does not reflect nor generalize to other ethic groupings. A second limitation came from the bounds of the study. The study was limited to one rural, low socio-economic school district in Central Pennsylvania. Another limitation associated with the doctoral study was that there was no way to know that the students are being honest about reporting their exercise activity. Lastly, data collection was only taken from seventh graders.

The independent variable of this study was the external reward of the academic incentive. The dependent variable was the leisure time physical activity, as measured by the YRBS survey.

Nature of the Study and Conceptual Framework

The nature of the study was a pretest-posttest control-group study conducted over a three-week period. Convenience samplings of the volunteering physical education teacher's classes took part and were placed into two groupings. Participants in Group A and Group B were both asked to participate in the Active Lifestyle Program. The Active Lifestyle Program has two different means by which children can choose to meet their fitness goals. The first goal was centered on being active during their leisure time five days each week for 60 minutes each day. The second goal focused on walking. Girls could choose to walk a minimum of 11,000 steps (as measured by their personal pedometer) at least five days a week while boys could choose to walk a minimum of 13,000 steps (Department of (Health and Human Services [DHHS], 2007).

Group A was offered the treatment prior to starting the three-week fitness challenge. The treatment consisted of four academic points added onto to their final nine weeks grade. This enabled the students to bring up their nine weeks grade a half of letter grade. Group A

Participants received the academic incentive for completing the President's Active Lifestyle Program. Group B participants did not receive any incentive to take part in the Active Lifestyle Program.

The President's Council of Physical Fitness and Sports (2007) is designed for school-age students. The President's Challenge offers four unique award programs. The President's Fitness Award program has been the primary method physical educators have used to test fitness levels. Research has revealed mixed results as to the effectiveness and reliability of the program (Gallahue, 1996; Keating, 2000; and Dilorenzo, 2006).

The President's Active Lifestyle Program takes the thought of staying active beyond the school gym, and challenges students to be active during everyday life by provided goals, a log, suggested activities, and awards to help people succeed (DHHS, 2007). Research conducted on the President's Active Lifestyle Program was available. Moderate physical activity levels in adults and in children have been decreasing over the past two decades despite the health warnings from the CDC, WHO, and the USDHHS.

Thus, this pretest-posttest control-group quantitative

study bridged the gap between research and the goals set forth by the WHO and the CDC to increase physical activity levels in middle school children (WHO, 2004; CDC, n.d.c). The conceptual framework of this study examined existing research on motivation and the self-determination theory (Ryan and Deci, 2000). In doing so, this study implemented the 2005 (YBSS) as its pretest/posttest instrument and examined the differences between Group A and Group B. The YRBS survey was first developed in 1990 to monitor eight priority health risk behaviors (CDC, n.d.c).

This study focused on the five questions found in the physical activity section of the YRBS survey. Research supports the demonstration of criterion-validity for the YRBS survey (Washington State Department of Health, 1997). However, there is limited criterion-related validity to support the academic incentive and Active Lifestyle Program. Troped, et al., (2004) and Troped et al. (2007) found mixed results regarding the validity and the reliability of the YRBS survey. Section 3 provides discussion that is more detailed.

Promotion of Social Change

This study centered on the problems associated with the decrease of physical activity in children (CDC, n.d.a). To bring about social change within communities, this research focused on improving physical activity levels in children by rewarding students who choose to be physically active on a consistent basis when they are away from the school environment. The work of Ryan and Deci's (2000) self-determination theory provides a framework for motivation and reinforcement of literature and research centered on external motivation. To date, research has shown there are health benefits for individuals who engage in moderate physical activity for a minimum of 30 minutes five out of seven days a week (CDC, n.d.a). There is a scarcity of research detailing how to accomplish this task.

With physical activity decreasing and suggestions by the CDC and other organizations encouraging the public to transform children's leisure time into one of being more physically active, the timing of this quantitative pretest-posttest control group study was significant to each community and educational institution. The information gained from this study could benefit middle school physical

educators, regular educators, administrators, and parents. These individuals possess a enhanced understanding of how academic incentives externally motivate students therefore giving them another technique by which they can modify activities and curriculum accordingly to meet the student's needs and bring about social change within their communities.

Organization of the Remainder of the Study

In the following section an examination of available literature, and research associated with external motivators, the self-determination theory, and efforts to increase physical activity, are analyzed to establish the impact that external motivation has on an individual choosing to be physically active during their leisure time. Section 3 proposes a clear outline of the major focus of the content and methodology of the study. Section 4 is structured around the research question and hypothesis. Section 5 presents a brief overview of why and how the study was done, reviews the question being asked in the study, and provides recommendations along with a concise summary of the findings.

SECTION 2:

LITERATURE REVIEW

Introduction

Physical inactivity is a widespread problem around the world (USDHHS, n.d.b, WHO, 2004). The review of literature focused on available literature, scholarly work pertaining to research connected to motivation, and the self-determination theory. The first section provided an overview of health implications related to decreased physical activity and inactivity among children. The research question is linked to research with an emphasis on improving physical activity. The third section examines the critical constructs of motivation in conjunction with the self-determination theory (Ryan & Deci, 2000). The investigation bridges the gap within research and provides the academic community with new knowledge because few studies have explored the means for improving physical activity levels. The next section provides an overview of environment factors that influence children's motivation to be physically active. Parental influence, environmental factors within the community, school districts, and state

policy regarding the influence of motivating children to be physically active are factors that impact behavior. The final section provides a summary of the available literature. Peer reviewed articles and journals relating to motivation and physical activity were collected over a two-year period with EBSCO as the primary source. Some key terms used were amotivation, motivation, intrinsic motivation, extrinsic motivation, moderate physical activity, and regular physical activity.

Health Implications Related to Physical Inactivity

Moderate daily physical activity can diminish substantially the risk of developing or dying from cardiovascular disease, acquiring Type II diabetes and certain cancers, such as colon cancer. Participating in physical activity on a regular basis also helps decrease obesity levels, symptoms of anxiety, depression, and symptoms of arthritis (USDHHS, n.d.a). Being physically active further reduces the risk of coronary heart disease, strokes, and diminishes the risks of breast cancer among women (WHO, n.d.a). Even though research confirms there are health benefits associated with physical activity at this present time, children are experiencing fewer opportunities

to play and less time to be active compared to previous generations (Isenberg & Quisenberry, 2002).

Contrary to the benefits of being physically active, research shows there are negative consequences linked to an individual's health in one who chooses to be physically inactive (CDC, n.d.a). Individuals who are physically inactive or choose sedentary lifestyles are risking the quality of their health (CDC, n.d.c). "Physical inactivity is highlighted in the 2002 World Health Report on 'Risks to Health-Promoting Healthy Living' WHO (n.d.c) as a significant common and preventable risk factor for chronic non-communicable diseases (NCD) along with obesity" (p. 1). These health problems linked to being inactive are numerous but are preventable.

Many factors contribute to ones physical fitness choices however, it is important to take part in regular physical activity and make healthy choices throughout a lifetime (Corbin & Lindsey, 2005). Choosing to participate in moderate activity on a regular basis can improve ones health if they have been inactive for any length of time (CDC, n.d.e). Swimming laps for 20 minutes, dancing fast for 30 minutes, raking leaves for 30 minutes, or walking 2

miles in 30 minutes (15 min/mile) are all examples of moderate activity (CDC, n.d.e). Furthermore, it is important to choose activities that are enjoyable and meet individual goals that can be achieved now and throughout lifetime (Corbin & Lindsey, 2005).

Gender and socio-economic status are directly linked to the amount of time individuals spend being physical activity (Corbin & Lindsey, 2005). Research indicates inactivity is more common among women than men, and female adolescents are less likely to participate in physical activity than their male counterparts (CDC, n.d.e). The CDC noted that individuals with lower socio-economic status exhibit greater levels of inactivity.

As people age, the amount of time they choose to be physical activity declines dramatically (Corbin & Lindsey, 2005; CDC. n.d.e). As physical activity levels decrease in this generation, childhood obesity and health related diseases are escalating. During the past two decades in the United States, obesity levels have doubled among children and teenagers (CDC, n.d.d). Obesity continues to increase among American adults. “Nearly 60 million Americans are obese. More than 108 million adults are either obese or

overweight. That means roughly three out of five Americans carry an unhealthy amount of excess weight" (USDDHS, n.d.a). Obesity affects all age levels, genders, racial and ethnic groups. A recent study taken in the Netherlands found individuals that are overweight or obese cut years off their life (USDDHS, n.d.a).

In Australia, it is estimated 1.5 million young people under the age of 18 are overweight or obese (Australian Government Initiative, 2007). Children that are overweight or obese are at an increased risk for heart disease, high blood pressure, Type II diabetes, arthritis-related disabilities, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems, and some cancers (CDC, n.d.a). "Type II diabetes, once called 'adult onset' diabetes once thought to be age-related, is now being diagnosed in children and teens" (USDHHS, n.d.b, p.1).

The immediate consequence of being overweight as perceived by the children themselves is social discrimination. "Physical health is associated with a person's psychological well-being and people who are physically active report greater self-esteem, enhanced mood

and confidence in their physical functioning with possible beneficial effects for relieving symptoms of depression and anxiety" (CDC, n.d.a, p. 1). Children experiencing disgrace, negative stereotyping, discrimination, and teasing, bullying, and social marginalization have a dramatic impact on their social health (CDC, n.d.a). Some physically competent people lack positive perceptions of competence. If students were to possess positive self-esteem, it would increase the perspective of them being lifelong pursuers of physical activity (Corbin, 2002).

Inactive lifestyles and obesity also have a direct impact on the economy. The CDC (n.d.a) reports in 1987, the direct medical cost associated with physical inactivity was 29 billion dollars and nearly 76.6 billion dollars in 2000. Each year, over 33 billion dollars in medical costs is directly connected to lost productivity caused by heart disease, cancer, stroke, or diabetes (USDHHS, n.d.b). The lifetime medical costs of these five diseases and health conditions (hypertension, diabetes, heart disease, stroke, and high cholesterol) among moderately obese people are 10,000 dollars higher than among people at a healthy weight (CDC, n.d.a).

Research Question Linked to Research

This study aimed to meet the needs of the students who are not motivated by physical education curriculum to participate in class or be self-motivated to be physically active on their own during their leisure time. This study answered the following question. How does an academic incentive externally motivate seventh-grade students to participate in a three-week fitness program?

Research from the CDC (2003) Middle School Youth Risk Behavior Survey (MSYRBS) reported that 69% of seventh graders across states participate in physical activities for 20 minutes or more on at least three of seven days preceding the survey and 58% of the students played on sports teams. "Educating children in the development of positive attitudes toward health related fitness so that they are motivated to engage in lifetime fitness activities both inside and outside of the physical education class is an ongoing challenge for physical educators" (Kane & Kane, 2004, p. 24). Currently, children's motivation levels have not centered on being physically active during their leisure time but instead children are increasingly choosing to be sedentary during their free time despite the decades

of physical educator's efforts to promote physical activity (CDC, n.d.b). Fairclough and Stratton (2005) noted evidence by researchers that revealed a need for physical education to be a habitual opportunity in middle and high schools. However, McKenzie (2003) argued physical education classes do not meet the physical activity needs of children; therefore, students must participate in regular physical activity during their leisure time. Fairclough and Stratton (2005) disputed that students who do not get rigorous physical activity on a consistent basis during the school setting do not make up for it after school.

In order to increase physical activity levels, Ntoumanis (2005) believed children must be motivated to participate in physical activity. However, the debate has centered on the proper techniques educators should use to motivate children who are not currently motivated to participate in physical activity (Ryan, 1982; Deci & Ryan, 2000). Davis, Winsler, and Middleton (2006) studied students' perceptions of rewards and academic performances. The prevalence for rewards during elementary school was 73%, middle school 72%, while 74% of high school students receive some type of reward from their parents for academic

achievement and 51% received money for good grades. When asked if rewards were a good method to motivate students, 77% of the participants felt rewards were effective. However, the results revealed those individuals who felt external rewards were good also had a greater disposition to be less extrinsically motivated in college, and those who originally considered rewards not effective became more apt to be extrinsically motivated in college.

There have been few studies that have evaluated the effectiveness academic incentives have on externally motivating students to increase their phsycial activity levels. "Examinations of almost 100 relevant studies carried out over the last quarter century revealed considerate variability of results; reports that reward have a decremented effect, no effect, and incremental effects on intrinsic task interest have all been frequently obtained" (Eisenberger & Cameron, 1996, p. 5.). The work by Devahl, King, and Williamson (2005) examined how academic incentives externally motivated two different groups of college students. The researchers reported that academic incentives increased participation in physical activity among 210 college students enrolled in cardiopulmonary

patient management. The findings suggest students receiving the greater incentive during the 12-week exercise program showed greater exercise adherence.

The physical education classroom and the environment surrounding youth have a direct impact on attitudes towards fitness (Ryan & Deci, 2000). Equally, Standage and Treasure (2002) compared students' situational motivation and found that the students who characterized under low task-orientation profiles accounted for a high propensity to require external motivators. In contrast, Ryan and Deci (2000) stated external motivators have a negative impact on student motivation and on long-term achievement. Fairclough and Stratton (2005) noted students who participate in physical education regularly tend to be more active when they are outside of school setting.

In order to stimulate students who are not physically active in school or out of school Epstein, Kilanowski, Consalvi, & Rocco (1999) advocated, "Engaging sedentary children in highly structured activity program that involve bouts of long-duration exercise may be less beneficial for increasing general physical activity than alternative programs that provide access to multiple bouts of shorter-

duration exercise" (p. 603). Corbin and Lindsey (2005) noted shorter durations of physical activity in 10-minute segments three times a day or walking 11,000 steps are equivalent to the standards of the CDC and children still receive health benefits. Conversely, with philosophies to improve and change this behavior in adolescence, there have been few studies conducted within the physical education environment that focus on measuring students fitness levels, problem-solving techniques, or implement technology (e.g. pedometers and heart rate monitors).

The President's Challenge Fitness Test is one tool researchers have used to monitor fitness levels in children. This fitness test recognizes students for their level of physical fitness in 5 unique activities; curl-ups or partial curl-ups, shuttle run, endurance run and walk, pull-ups or right angle push-ups, and V-sit or sit and reach (USDHHS, n.d.c). The Fitness Test uses three levels of rewards as means of motivation. The Presidential Physical Fitness Award, the National Physical Fitness Award, and the Participant Physical Fitness Award all have different standards of measurement for ages and sexes (USDHHS, n.d.c). DiLorenzo (2006) used the President's

Challenge Physical Fitness Awards Program to study the effectiveness it had on fourth grader students performing a twelve-week physical education assignment. The study revealed the students were more active per week, total more minutes of physical activity, improved in many areas of fitness, and had a greater understanding of fitness concepts along with feeling better about being active.

The Active Lifestyle Program is a derivative of the Presidential Fitness Test. The goal for this program is to encourage teenagers to be active 5 days a week for 60 minutes each day or walk a minimum of 11,000 steps a day. Brittenham (2002) used the 2001 recommendations of 11,000 steps per day from the President's Council on Physical Fitness and Sports and studied daily step counts in elementary children. The study sought to determine if first through fifth graders were meeting the recommendation. Over a seven-day period, the results showed only 41 percent of the student's had met the guidelines. Brittenham also noted as student's progress in grades their steps increased with males taking more steps than the females.

Another study examined teachers' use of the President's Challenge Physical Fitness Awards Program and

developed two valid and reliable instruments. The study concluded teachers slightly had a positive attitude toward the fitness testing. There were no underlining themes or patterns found for concern were identified.

Physical activity levels are decreasing during the time children are away from the school environment (CDC, n.d.a; MSYRBS, 2003). To understand the physical activity levels on children outside the school setting, Duke (2003) focused on levels and types of physical activity among children aged 9 to 13 years outside the school setting. The results indicate children need more physical activity after school. Although the majority of children aged 9 to 13 years engaged in some level of free-time physical activity, Duke noted an increased rate of participation in both free time and organized physical activities are needed, especially for non-Hispanic black and Hispanic children.

Heart rate monitors measure the intensity of individual workouts (Corbin & Lindsey, 2005). Saenz (2003) conducted a study implementing heart rate monitors to improve physical activity levels in elementary children. Saenz studied the effectiveness of self-regulation with heart rate monitors. The aim of the study was to determine

if heart rate monitors could enable elementary students to self-regulate their exercise levels and maintain their lifestyle of physical activity. The results from Saenz study indicated students were able to increase their time spent in their target heart rate with the use of the heart rate monitors.

Motivation and Learning

Understanding motivation and the means by which students are motivated to participate in physical activity is important for change to occur. Children are born with the desire to learn (Wlodkowski & Jaynes, 1990). "An environment that nurtures educational motivation can be cultivated in the home, in the classroom, or through an entire school" (Renchler, 1992, p. 1). Motivation has been a central focus within the field of psychology, education, and for teachers, parents, coaches, and for leaders throughout the world (Ryan & Deci, 2000). Furthermore, people are motivated for a variety of different reasons and people can be motivated to participate in an activity because of internal values or external factors (Ryan & Deci, 2000).

"Internal motivation to learn can be viewed as a guidance system that attempts to maintain a child's focus in the direction of learning but must stand on its own and compete against all the other attractions of daily existence" (Wlodkowski & Jaynes, 1990, p. 9). The driving force behind the reason for attempting anything comes out of pure motivation (Ryan & Deci, 2000). According to Wlodkowski and Jaynes (1990), there is internal motivation in every person, but there are three external influences which also influences ones' motivation. These are culture, family, and school. In contrast to this position, concerning what influences a child's motivation to learn, Glasser (1986) stated the reason why students do what they do comes from choice:

> Choice theory, which claims that what is going on inside the student, rather than the outside situation, is the cause of all behavior, explains that, regardless of your best efforts, these students choose not to work in class because it does not satisfy their needs to do so (p. 20).

These theories agree in principle, the child is in control of what influences his or her desires to learn. However, there are disparities as to how outside influences affect motivation.

Educators must consider children's interest levels and goals when presenting programs. Often times, children will only pursue and activity if they find it worthwhile (Tudge & Caruso, 1989). Therefore, Renchler (1992) suggested, teachers should create an environment that supports students' motivational goals and interest to meet the individual needs of student's. Renchler (1992) advocated to increases student motivation within the environment motivation must occur, academic success is expected and rewards are necessary.

Teacher attitude and motivational level further plays a significant role in creating a positive atmosphere in the gymnasium (Glasser, 1986). "If you do not find your work satisfying, you will never be able to do it as well as you would like. No class can ever be satisfying unless both the teacher and students find it so" (Glasser, 1986, p. 34). It may be useful for the teacher to focus on physical activity programs that increase motivation and reinforce opportunities for students to participate in for an extended period of time (Epstein, Kilanowski, Consalvi, & Rocco, 1999). However, children need educators who are willing to take the challenge to move them towards success

(Stevens-Smith & Bowling, 2002).

Sullivan (1991) suggested in order for individuals to be successful at increasing and maintaining their fitness levels, they should include these motivational steps into their fitness programs.

> It is important to take the necessary steps before initiating a moderate exercise prescription in order to minimize injuries. Encourage group participation. The social reinforcement and camaraderie may facilitate increased exercise adherence. Emphasize variety and enjoyment in the activity program. Incorporate personal goal setting, periodic testing, and progress charts to demonstrate and document exercise achievements. Recognize individual accomplishments through a system of rewards. Provide qualified and enthusiastic teachers/leaders (p. 2).

Physical educators need to consider the needs of each student as they plan and implement each lesson (Ward, 2001). This ability to influence student motivation is significant because it can directly increase the amount of effort that students put into their learning and increase the likelihood of students achieving the national physical education standards (Todorovich, Curtner-Smith, & Prusak, 2005).

Self-Determination Theory

One such theory concerning motivation and creating independence in children is the Ryan and Deci's (2000)

self-determination theory. The self-determination theory seeks to explain why people do what they do (Ntoumanis, 2001). Within the social realm, differences exist from one individual to another thus resulting in diverse motivational levels within the context of the environment, activity, or situation (Ryan & Deci, 2000). Additionally, Bryan (2006) acknowledges individual differences in attitudes and motivational levels influence physical activity.

> When individuals feel as though they are acting out of their own volition, or have choices among several possible courses of action, they are more likely to engage in certain behaviors, such as choosing to be physically active on their own, or in physical education (p. 6).

The self-determination theory describes students as having three categories of needs or nutriments: needing a sense of competence, autonomy, and relatedness. “Competence involves understanding how to, and believing that one can achieve various outcomes” (Anderman & Midgley, 1999, p. 1). Autonomy, defined as those actions and activities a person performs, and is aligned to ones perception of self (Deci & Ryan, 2000). Anderman and Midgley (1999) noted, “Autonomy needs could be addressed through allowing some student

choice and input on classroom decision making. For young adolescent students, with their increased cognitive abilities and developing sense of identify, a sense of autonomy may be particularly important" (p. 1). The third nutriment, relatedness, is identified as an individual's ability to care and love for one another and has the ability to receive the same kind of care and love in return (Deci & Ryan, 2000).

The continuum of the self-determination theory has three levels of motivation. Intrinsic motivation is considered the highest level whereas individuals choose to participate solely for enjoyment, challenges, exploration, and to learn (Ryan & Deci, 2000). "Internal motivation to learn can be viewed as a guidance system that attempts to maintain a child's focus in the direction of learning but must stand on its own and compete against all the other attractions of daily existence" (Wlodkowski & Jaynes, 1990, p. 9). This internal driving force is not the only means that influence individuals to execute an activity there are also external forces that have a direct impact on motivation (Deci & Ryan, 2000).

"Extrinsic motivation refers to the performance of an activity in order to attain some separable outcome and, thus, contrasts with intrinsic motivation which refers to doing an activity for the inherent satisfaction of the activity itself" (Ryan & Deci, 2000, p. 71). Students who choose to participate in physical education because it will affect their grade are extrinsically motivated. The lowest level of motivation is considered by Ryan & Deci (2000) to be amotivation. The researchers define amotivation, "as the state lacking the intention to act. When amotivated, people either do not act at all or act without intent they just go through the motions" (p. 72). An individual that stands in the outfield of a softball game, lets everyone else get the softball, and makes no effort is an example of an amotivated physical education student.

"The real question concerning nonintrinsically motivated practices is how individuals acquire the motivation to carry them out and how this motivation affects ongoing persistence, behavioral quality, and well being" (Ryan & Deci, 2000, p. 71). According to Deci and Ryan (1991), intrinsic actions occur without rewards like stickers or trophies but students participate out of

interest in the activity itself. In contrast, extrinsic behaviors may temporally motivate students, but when the external motivator is reduced or removed the behaviors are not continued or the actions may regress and cause more harm than good (Deci & Ryan, 1991; Eisenberger & Cameron, 1996).

In addition, a low level of performance may result from external motivators (Eisenberger & Cameron, 1996). However, Eisenberger and Cameron argued, "Rewards can be used effectively to improve various kinds of performance, including creativity, without detrimental effects on intrinsic task interest" (p. 164). Eisenberger, Pierce, and Cameron (1999) used the general interest theory to explain the effects of rewards on intrinsic motivation. The results showed rewards effect depends on the performance. There was a decrease in intrinsic motivation when the tasks were irrelevant or inconsistent to individual needs or wants. However, when the task performances helped satisfy needs or wants there was an increase in intrinsic motivation. Brilliant (1986) study focused on parenting style and intrinsic motivation followed by receiving extrinsic rewards. Material, social rewards were given to 119

kindergarten students. The hypothesis suggested parenting styles measured by the Family Style Survey would influence motivation levels. Intrinsic motivation was measured by participant's time during free play. The results demonstrated rewards did not have a significant affect however parenting style confirmed significant effects apart from the children receiving rewards.

Environmental Influences on Physical Activity

Physical training first began in schools in the 1850s. Over the years, physical education has changed from physical training to calisthenics for performance related fitness, and sports skills (Young, 2003). "In the 1930s and 1940s free play was the primary source of physical activity. This gave way to the college and professional sports in the 1950s and 1960s" (Corbin, 2002, p. 131). More recently, physical educators have adapted the sports model to meet the physical needs of students (Corbin, 2002). "In response to growing rates of obesity and health-related problems in children, school are beginning to shift physical education classes from competitive games to lessons on leading healthier lives" (Education Digest, 2004, p. 62). More than 155 years later, physical educators

and governmental agencies are still pursuing this endeavor to promote and increase participation in physical activity (CDC, n.d.a. WHO, n.d.a).

The Federal Government advocacy for physical activity began over a half of a century ago. Since then, presidents have created Councils on Physical Education for Youth, national health and physical education standards, and the Healthy People 2010 goals to bring increased awareness and motivate individuals to be more physically active (USDHHS, 2005; Todorovich, Curtner-Smith, & Prusak, 2005; AAPHERD, 2006; USDHHS, n.d.a). Traditionally physical education curriculum has focused on psychomotor, cognitive, and affective domains. Current moves within physical education link these domains to state and national standards (Ward, 2001, p. 7).

The national standards exist for quality physical education programs, which measure the minimum goals students must achieve (Cameron, 2005; Thomas, 2004; Xiangren, 2005). The national standards within physical education are currently the primary driving force of education reform, assessment, and accountability within physical education (Cameron, 2005). "Arguably, interest in

the performance of schools and the outcomes of education programs are greater today in the United States than at any other time in history" (Todorovich, Curtner-Smith, & Prusak, 2005, p. 27). Just as reading and math standards are demanding change in education, so are standards within physical education. Todorovich, Curtner-Smith, and Prusak (2005) identified the six national standards in physical education as motor skill development, understanding of movement concepts and principles, participating regularly in physical activity, achieving and maintaining a health-enhanced level of physical fitness, responsible and personal social behavior and valuing physical activity.

Many states have adopted their own health and physical education standards by which physical education departments must adhere (Cameron, 2005). Young (2003) argued aligning standards into the curriculum to promote physical activity levels during physical education class is essential. It is during physical education class times where students develop the habits and skills necessary for them to transfer into their daily routine. However, Cameron (2005) and Diegmuller (1995) questioned the effectiveness that standards will have on physical education with daily

physical education requirements being reduced or eliminated in some schools.

Although many within the field of education identify these physical education standards as important components students should learn in physical education, they do not address the manner by which teachers might achieve them (Todorovich et al. 2005 p. 27). The physical education standards, however, provide a framework for developing quality physical education programs and set realistic and achievable goals for students to perform at each grade level (AAPHERD, 2006). In order to achieve these goals and receive the mental, emotion, and physical benefits of being active, teachers need to create appropriate programs for all their students (Young, 2003).

While the benefits of modifying activities are many, one of the more important reasons relates to that of students' motivation. When a student is included in an activity in which he or she experiences little or no success, frustration, and lack of motivation for future involvement may result (Kasser & Lieberman, 2003). On the other hand, children who experience success as they

participate in physical education have a tendency to become more involved (Corbin, 2002).

Clarity and simplicity within the standards of physical education is imperative for physical educators to develop curricula. Standards enable physical educators across the nation to be working towards the same goals (Young, 2003). "Lack of clear and unambiguous objectives for physical education will render it (and National Association of Physical Education and Health Education, NAPEHE) ineffective as an agent of change in the future" (Young, 2003, p. 1). Nevertheless, in a study focusing on the impact of standards on physical education teachers, Xiangren (2005) reported there were differences among directors' perceptions regarding the influence and impact of standards on curriculum changes.

Schools, School Districts, Governmental Promotion of Physical Activity

In 2003, 40.5 million students enrolled in public and private elementary, and secondary school in the United States (National Center for Education Statistics [NCES], 2005). Physical education requirements, regularity, and quality of curriculum are key factors for promoting

physical activity and providing opportunities for children to meet the goals set forth by the CDC (Sollerhed, 2006). "Many factors contribute to quality physical education, not the least of which is the frequency and duration of the program" (Thomas, 2004, p. 156).

According to Francois & Shephard (2005), schools should require adequate time in physical education to maintain and enhance students' physical fitness. However, Hinkle (1992) reports only 41 percent of the students participating in physical education expend enough energy to enhance their cardio-respiratory conditioning. To combat this concern, The Society of State Directors for Health, Physical Education, and Recreation (2005) recommends, "All schools should provide daily standard-based physical education in grades pre-K through 12 and is a critical component of a balanced curriculum and an integral part of school reform" (p. 2). Yet with these suggestions concerning the importance of providing quality opportunities for physical education to take place during school hours, the CDC (2004) Youth Risk Behavior Surveillance Survey reports enrollment in physical education has not increased since 1991.

Schools have the potential to be the primary institution for promoting activity in young people and physical education classes within the school environment. Schools play a significant role for improving physical capacity, self-perceptions and attitudes about physical activity (Cale & Harris, 2006; Sollerhed, 2006). During this environment of high-stake testing, "Physical education teachers have been commissioned to teach, challenge, and support students to realize their maximum potential and to acquire the knowledge and skills needed to meet these goals" (Pennsylvania Department of Education, 2006, p. 2). Physical educators will be able to understand the characteristics and natural patterns of physical activity within the students to enhance and reinforce physical activity patterns (Epstein et al., 1999).

Sollerhed (2006) noted that physical education classes have a direct impact on development of physical activity levels as well s producing positives attitudes toward fitness. Thus, it is important for physical educators to implement activities that engage and motivate each student to be active in class (Compton, 2005). In 2006 research was conducted on the effectiveness expanding physical education

had on BMI levels and physical activity. Sollerhed results showed schools involved in the expanded physical education program had lower increases in BMI levels and had greater improvement in adolescence fitness levels during leisure time.

One study focused on the effectiveness of school programs and their impact on physical activity and obesity. Veugelers and Fitgerald (2005) surveyed 5,200 fifth graders, parents, and school principals. The results showed students, who participated in a coordinated program with healthy eating programs reported more physical activity, had healthier diets, and significantly lower rates of overweight and obesity than the schools that did not have nutritional education (Veugelers & Fitgerald, 2005).

Sallis et. al. (1997) Project Sports, Play, and Active Recreation for Kids Curriculum [SPARK] aimed at increasing physical activity levels in fourth and fifth-grades through modified physical education designed to increase physical activity during physical education class during their leisure time. Trained specialists taught the health-related physical education curriculum. Over a two-year period, the time students spent being physically active in physical

education class improved, but no effects on physical activity outside of the school setting were found. Improvement in abdominal strength and endurance occur with the specialized instruction. Girls that were in the specialized classes were superior in abdominal strength and endurance compared to the girls in the control group.

There are action schools, physical education classes, communities, and governmental agencies that have begun to address the problem of physical inactivity and focus on methods to improve physical activity levels in children (Dantonio & Beisenherz, 2001). The potential to achieve the standards and Healthy People 2010 goals is there; however, for change to take place, physical educators must take the role of leadership and educate the public about the concerns and the need to address the problem of physical inactivity (Dantonio & Beisenherz, 2001). Research shows schools promoting extracurricular sports, active commuting to school, and working within the community to provide adequate equipment and youth programs can influence a child's habitual physical activity patterns (Corbin, 2002).

To bring about change within the school environment, the CDC (n.d.b) recommends physical education classes to

provide maximum participation, conduct activities where children are physically active, and as a place where schools should provide daily recess opportunities for elementary students. The Heart Foundation of Australia (2007) suggests professional development and resources for teachers so they can incorporate physical activity into other areas of learning such as science, reading, and math). In addition to teacher training to promote physical activity, it is essential for children to have parental support (Heart Foundation of Australia, 2007). Children can take measures to become active during school and outside the school setting on their own. Goran, Reynolds, & Lindquist, (1999) suggested that children participate in active transportation to and from school, engage in free play outdoors, take part in personal fitness, and organized team sports.

Children's perception of the physical environment for which they can engage in recreation activities has a direct impact on the amount of time they are physically activity (Corbin & Linsay, 2005). Thompson, Rehman, and Humbert (2005) interviewed 22 students about attitudes towards physical activity during their leisure time. The results

concluded safe environments for students to play in and parental support directly affected a student's choice regarding the amount of time elementary students engage in physical activity during their leisure time.

The major barriers most people face when trying to increase physical activity are time, access to convenient facilities, and safe environments in which to be active (Corbin & Lindsay, 2005; USDHHS, 2005). The rise in childhood obesity is due to complex interactions across a number of relevant social, environmental, and policy contexts that influence eating and physical activity (CDC, n.d.f). The Heart Foundation of Australia (2007) suggests the local government provide parks and recreation facilities with appropriate lighting for children to play in. Despite these suggestions, the CDC (n.d.g) reports schools, parental support and the local community have an adverse affect on children's ability to be physically active.

> Social environments such as school, work, family, and friends can significantly influence an individual's level of physical activity. However, characteristics of our communities such as the accessibility and location of parks, trails, sidewalks, and recreational centers as well as street design, density of housing, and availability of public transit may

> play and even greater role in promoting or discouraging an individual or family's level of physical activity. There are also significant environmental barriers from water and air pollution to crime and dangerous automobile traffic (p. 1.).

In spite of suggestions for schools, communities, and parents to use to assist children to increase their physical activity levels, students are seeing their opportunities to participate in physical activity drastically reduced at school. Research shows physical education classes are being reduced or even eliminated from school curriculum to create additional time throughout the school day for core classes because of high-stakes testing mandated by the federal government (Cameron, 2005). Kasser and Lieberman (2003) commented challenges within schools to maintain the current levels within physical education are becoming more difficult.

> Physical educators have long been committed to providing children with well-designed and developmentally appropriate physical education that they believe will provide the skills, attitudes, and motivation necessary for lifelong physical activity participation. Yet this level of commitment is becoming increasingly more difficult to sustain with the changing nature of physical education classes (Kasser & Lieberman, 2003, p. 19).

Some educators argue physical education is not as important as core subjects and children require more time spent in math, reading, and the sciences. Because physical education does not have a direct impact on meeting the No Child Left Behind Standards it is perceived as less vital (Cameron, 2005). However, participation in health-related physical education classes can have a positive effect on students' academic achievement (Sallis, McKenzie, Kolody, & Lewis, 1999). One study focused on physical activity and academic achievement. Results from Coe et al. (2006) showed students performing in the Healthy People 2010 guidelines for vigorous activity had significant higher grades than those students that did not meet the guidelines. Students performing in moderate physical activity levels did not have their grades negatively affected. The second study found no correlation between extended physical education and academic achievement in the core subject area.

Kane & Kane (2004) believed it is an ongoing challenge for physical educators to nurture positive attitudes in students towards health related fitness so that children will adopt an active lifestyle in and out of the school environment (Kane & Kane, 2004). Nevertheless, the USDHHS

(2005) acknowledges physical educators have greater potential towards changing the youth obesity and lack of physical activity dilemma than they realize.

> Young people are at particular risk for becoming sedentary as they grow older. Encouraging moderate and vigorous physical activity among youth is important. Because children spend most of their time in school, the type and amount of physical activity encouraged in schools are important (p. 1).

Despite the potential physical education has on improving physical activity, the opportunities for physical activity within physical education classes in school and after school activities are decreasing (CDC, n.d.b). Public schools are facing financial and academic challenges. "These challenges, along with states like South Carolina and many others, are facing program budget cuts including the State Department of Education." (Diegmuller, 1995, p. 8) Budget cuts are digging deep into physical education while there is an epidemic of obesity and a lack of physical activity among children.

Today's children are being assaulted from both ends of the so-called safe environments. Recent literature and studies suggest culture, socio-economic conditions' state and school policy regarding physical education requirements

within schools, parental support, and environment all play a significant role in a child's level of motivation to be physically active (Wlodkowski & Jaynes, 1990; WHO, n.d.a).

The CDC (2000) School Health Policies, and Programs Study (SHPPS) recently reported the percentage of schools, school districts, and the state requirements for physical education in public schools. On a positive note, the school percentage for requiring physical education in elementary is 96.8%, middle/junior high is 96.8%, and senior high is 94.4%. CDC (2000) continued by stating, school districts' percentage for requiring physical education taught in elementary is 82.6%, middle/junior high is 84.6%, and senior high is 88.8%. While the states requirement in elementary is 78.4%, 85.7% in the middle/junior high, and 82.4% in the senior high (CDC, 2000).

In addition to requiring physical education to be a part of children's curriculum, another contributing factor to include is the regularity of physical education enrollment. The CDC (2005) supports individuals being regularly active and defines regular physical activity as performing the activity 5 or more days of the week of moderate-intensity activities (in bouts of at least 10

minutes for a total of at least 30 minutes per day).

Currently physical education classes and school districts are not meeting the goals of Healthy People 2010 and the physical education standards of enabling students to be regularly active in the school environment (USDHHS, n.d.a). Fairclough and Stratton studied a diagnosis of the amount of time students spend being physically active during physical education class. Fairclough and Stratton state in their research, students are engaged in moderate-to-vigorous physical activity for 27 percent to 47 percent of the class time (2005, p. 217).

Research has also revealed high school students have negative feelings about physical education class but enjoy being physically active (Corbin, 2002). "In high school, enrollment in daily physical education classes has dropped from 42 percent in 1991 to 25 percent in 1995" (CDC, 2006, p. 1). More recently, the MSYRBS (2003) confirmed across states the percentage of seventh-grade students who attend daily physical education five days a week ranged from 15.7 percent to 77.5 percent with the median at 37.9 percent. The CDC, SHPPS, (2005) agreed in principle that regular

physical education is not taking place on a daily basis in schools.

> Only 8.0% of elementary schools, 6.4% of middle/junior high schools, and 5.8% of senior high schools provide daily physical education or its equivalent 150 minutes per week for elementary schools; 225 minutes per week for middle/junior high and senior high schools) for the entire school year for students in all grades in school (p. 2).

The CDC, (n.d.e) reported similar statistics, "Only 19 percent of all high school students are physically active for 20 minutes or more in physical education classes every day during the school week" (p. 1). The SOFIT (System for Observing Fitness Instruction Time) observation method, a validated, heart rate observation system, yields levels of activity the child is engaged in as well as the lesson context, type of teacher, and location of the physical education classes. Nader (2003) used the SOFIT model to observe the physical activity levels within 10 different sites of third-grade physical education classes.

> Children averaged 2.1 PE lessons per week, of 33 minutes each. Only 5.9% of children had daily PE. Children accrued 4.8 very active and 11.9 minutes of moderate to vigorous physical activity per PE lesson, 15.0% and 37.0% of lesson time, respectively. Lesson length and number of minutes per week were similar for boys and girls; however, boys spent proportionately more PE time in very active and

> moderate to vigorous activity. This resulted in boys having a higher energy expenditure rate than girls (p. 1).

The conclusion of the study substantiates the third grade students did not obtain the national recommendations for moderate physical activity during physical education class.

Conclusion

With current trends in physical activity diminishing among this generation, this study aimed to bring social change by examining motivational factors to understand their impact on physical activity levels (CDC, n.d.b). This study goal was to bring about social change by improving physical activity levels in seventh-graders by evaluating how effective academic incentives, used as an extrinsic motivator, motivate students to increase their physical activity to meet the CDC guidelines so they can receive the health benefits associated with exercise.

The self-determination theory centers on motivation and tries to comprehend why and what people do (Ntoumanis, 2002). Intrinsic motivation is the highest type of motivation, extrinsic motivation centers on rewards to motivate individuals and amotivation is the lowest level of motivation (Ryan & Deci, 2000).

Much of the research guided by the self-determination theory has also examined environmental factors that hinder or undermine self-motivation, social functioning, and personal well-being. There are conflicting opinions by researchers regarding the effectiveness of external motivators and the long-term effect after the reward is removed (Ryan, 1982; Deci & Ryan, 2000; Ntoumanis, 2001; Eisenberger & Cameron, 1996; Eisenberger, Pierce, & Cameron, 1999). In addition to the self-determination theory explanation for external motivation, Wlodkowski and Jaynes (1990), believe the environment influences individual attitudes, beliefs and actions concerning physical activity.

With the scarcity of research pertaining to academic incentives linked to improving physical activity, this study benefits middle school physical educators, educators teaching core subject, administrators, parents, and community members. These stakeholders possess an enhanced view of the effectiveness academic incentives have on influencing seventh-graders to increase physical activity on their own during their leisure time.

SECTION 3:

RESEARCH METHOD

Introduction

The purpose of this quantitative study, grounded in the self-determination theory, was to examine the impact external motivation had on physical activity. This study answered the following question. How does an academic incentive externally motivate seventh-grade students to participate in a three-week fitness program? The independent variable of this study was the external reward of the academic incentive. The dependent variable consisted of the leisure time physical activity, as measured by the YRBS survey. The following hypothesis was tested.

1. Academic incentives added onto a nine week's grade will have no significant effect on students' motivation to participate in moderate physical activity during their leisure time.
2. Academic incentives added onto a nine-week's grade will have a significant effect on students' motivation to participate in moderate physical activity during their leisure time.

The methodology of this quantitative pretest-posttest control-group design was conducted in three stages as to ascertain the effectiveness academic incentives had on motivating seventh-graders to participate in physical activity during their leisure time. This quantitative design was chosen as the best method to understand this research problem and to assess the effect academic incentive had on the experimental group versus the control group. Creswell (2003) explained that using a pretest-posttest control-group design enables the researcher to administer a pretest and posttest to both groups while only the experimental group obtains the treatment.

This chapter addresses the following aspects: (a) Research Design, (b) Setting and Sample, (c) Instrumentation, and Materials (d) Finally, Data Analysis and procedures are discussed.

Research Design

This quantitative tradition was selected because, by definition, this design collects data using established instruments that yield statistical data (Creswell, 2003). The study used the YRBS survey as the pretest-posttest instrument (CDC, 2005). The treatment for Group A was an

academic incentive of four points added on to the participant's nine weeks grade. The academic incentive acted as an external motivator to compel participants to become physically active over a three-week period (Deci & Ryan, 2000). The four academic points enabled a student to raise his or hers nine weeks grade a half a letter grade for the nine weeks.

Participants in Group A, the experimental group, were made aware of the reward incentive prior to starting the fitness challenge. The fitness challenge was the President's Challenge Active Lifestyle Program. This program suggests children under the age of 18 be active 60 minutes a day five days a week over a six week period (USDHHS, n.d.b). The fitness challenge was conducted for three weeks in order to complete the study over the same nine-week grading period.

The potential affects of the academic incentives on motivating students to be physically active were measured using the Youth Risk Behavior Survey (CDC, 2005). This questionnaire provided a valid and reliable source of data as supported by the works of Brittenham (2002), Bryan (2006), and Devahl, King, and Williamson (2005). Others

studies involving the position of improving physical activity through heart rate monitors Saenz (2003) and appropriate measures of motivation along with the President's Challenge include Standage and Treasure (2002); Renchler (1992); Keating (2000); and Dilorenzo (2006).

Setting and Sample

This study included students from traditional, co-educational physical education classes. The population was drawn from seventh-graders at one rural Middle School in Central Pennsylvania. The selection of the institution was primarily based on the proximity of school to the researcher. The participants are aged from 12 to 14.

Physical activity levels among children are decreasing (Corbin & Lindsey, 2005). The MSYRBS (2003) reported, "across states the median of seventh-graders participating in physical activity for twenty minutes or more three out of the seven days preceding the MSYRBS is 69.5 percent" (p. 13). Therefore, the focus of this study centered on individuals in the seventh-grade with a convenient sampling method implemented. Six physical education classes took part in the study and the sample size was based on a 10%

confidence interval and a 95% confidence level (N = 105, n = 24) (Kirkpatrick & Feeney, 2005).

Treatment

The treatment of this study was four academic points. The four points acted as the reward to externally motivate seventh graders to start and complete a three-week fitness challenge (Deci & Ryan, 2000). A convenient grouping of the participating physical education classes was conducted. The researcher categorized one-teacher classes as Group A and two physical educators classes as Group B. Group A volunteering physical educator had three classes participate while one teacher in Group B volunteered one class and the other had two physical education classes take part in the study.

Group A was the experimental group and was the only group offered the treatment. The participants in Group A were informed in advanced that they would be having the opportunity to receive a reward for starting and fully completing a three-week fitness program. Participants in Group A not completing the fitness program requirements did not receive the reward. Participants in Group B were the control group and did not receive the treatment but were

asked to complete the same fitness challenge.

The President's Challenge Active Lifestyle Program served as the fitness challenge tool and provided a common denominator for both groups. The President's Challenge has four unique award programs that focus on different goals relating to physical activity (USDHHS, n.d.b). The four distinctive programs include the Active Lifestyle Award, Presidential Award, National Award, and Health Fitness Award. This study utilized the Active Lifestyle Program created by the USDHHS (USDHHS, n.d.b) as its standard tool for the study.

The Active Lifestyle Program is a six-week program that encourages teens to be physically active five or more days a week during their leisure time (USDHHS, n.d.b). The study, however, conducted the active lifestyle program during a three-week time span in order to complete the program within the same nine weeks of the start date of the study. Within the Active Lifestyle program, participants have the choice of participating in physical activity for 60 minutes a day or girls can use a pedometer to obtain a minimum of 11,000 steps per day and the boys and walk 13,000 per day. The program provides a list of suggested

activities, a personal activity log to record weekly progress, and guidelines for each participant to follow (USDHHS, n.d.b).

The study used the same goals as the Active Lifestyle Program. Children were asked to meet their individual daily activity goal of 60 minutes a day for at least five days a week or attain a minimum of 11,000 steps for girls or 13,000 for boys a day (as measure by a pedometer) at least five days a week over a three week period (USDHHS, n.d.b). The study did not provide the participants with pedometers due to the lack of pedometers at the testing site. At the end of each week of the fitness challenge, parents were asked to validate the reliability of the participants' progress by signing the participant's log. The personal activity log was modified from its original format to accommodate four grids instead of six so as to eliminate confusion. One grid was used for an example.

Data collection and procedure

Prior to implementing the study, the researcher took the necessary steps to obtain permission from the Institutional Review Board. In order to gain access to the use of this school setting, the researcher submitted a

review of the study to the superintendent of Keystone Central School District explaining why the site was chosen along with the type of research that was going to be administered, and what the school district would gain from the research (Creswell, 2003).

Once permission was obtained to proceed from the superintendent with the pretest-posttest control-group design study, a principal in the participating school was contacted and petitioning of the seventh-grade physical educators to take part in the study to place. After the stakeholders in Central Mountain Middle School granted their permission to use their co-educational physical education classes, the researcher trained them how to conduct the study.

The volunteering physical educators along with the researcher took the time to explain to each of the seventh-grade classes, how the class would be taking part in a scientific education research study. At this meeting, each seventh-grade student present received an envelope. Students not attending class were not included in the study. The envelope contained information about the study along with a two parental IRB permission forms, two student

IRB permission forms, the pretest survey, instruction on how to return the forms and a self-addressed envelope addressed to the researchers address, noted P.A. Research.

Students allowed to participate in the study, completed the pretest survey at home. For students to participate in the study, the parental IRB permission form, student IRB permission form and the pretest survey had to be returned within two weeks from the initial meeting. Students taking part in the study had two options of returning their envelopes. Participants could return them through the mail or give them to their physical educator.

The second phase of the data collection was the treatment. Upon the researcher receiving the IRB permission forms, the volunteering physical educators were made aware of the participant's identity to help assist with the treatment instructional phase of the study. This instruction took place during the schools activity period. Student's participating in the study were called to the gymnasium during the activity period to obtain their instructions and their Activity Lifestyle Program folder from their physical educators and researcher. The participants were separated into their groups and received

separate instructions. Students signed up to participate in the study but who were unable to attend the treatment instructional phase were given their folders during their next physical education class by their teachers.

During the final week of the Active Lifestyle Program, an envelope was sent to the participant's home to conclude the treatment phase. The envelope included a thank you note and instructions on how to complete the study. The envelope also contained the posttest survey and a self-addressed envelope. The participants took the posttest survey at home and mailed the posttest along with the Action Lifestyle Fitness Log in the self-addressed envelope. The envelope was addressed to the researchers address.

Validity and Reliability

The study incorporated the physical activity section of the YRBS survey (CDC, 2005). In order to establish validity for the survey, the pretest/posttest survey remained the same (Creswell, 2003). Students completed the pretest/posttest at home. Research supports the demonstration of criterion-validity for the YRBS survey (Washington State Department of Health, 1997). However, there is limited criterion-related validity to support the

academic incentive and Active Lifestyle Program.

Research has found mixed results relating to the reliability of the physical activity section YRBS survey. Troped, et al., (2004) study evaluated the validity of the moderate and vigorous physical activity questions of the YRBS survey with participants from the middle school level. The self-reported data of the questions were collected and compared to the Actigraph accelerometer, which were worn on the participant's right hips for seven days. The results concluded modest validity for the YRBS VPA question in middle school boys and girls however, an inharmonious findings to the MPA questions where found.

Troped, et al., (2007) latter conducted another study which the participants wore Actigraph accelerometers and twice completed surveys on two occasions that included YRBS moderate and vigorous physical activity items. Results concluded students underestimated their moderate physical activity levels while over estimated their vigorous amounts when the YRBS surveys were compared to Actigraph accelerometers.

Instruments and Materials

The instruments consisted of a pretest/posttest, which incorporated the physical activity section of the YRBS (CDC, 2005). The YRBS survey utilized to support the researcher in determining if there is a direct relationship between internal and external motivators (Ryan & Deci, 2000) that influence seventh-grade students to participate in physical activity during their leisure time. The goal of the YRBS survey is to determine the prevalence of health-risks associated with middle school students. The YRBS survey has been assessing data since 1990. The survey provides comparable data from states to states by monitoring progress (CDC, 2005).

The YRBS collects data in eight health-risk areas. This study focused on one of the health-risk behaviors. The section this study drew the questioning from the physical activity section of the YRBS questionnaire. The YRBS questionnaire for this study measured five questions within the physical activity section.

The first question sought to understand the number of days participants take part in physical activity for at least 20 minutes during the past seven days. The second

question wanted to understand the number of days participants took part in physical activity for at least 30 minutes during the past seven days. The third question sought to understand the number of days participants take part in physical activity for at least 60 minutes during the past seven days. The fourth question asked how much television was watched on an average school day and lastly, the YRBS asked the participants how involved they have been in team sports over the past 12 months (CDC, 2005).

Data Analysis

The study was conducted in three stages. The first stage was administering and collecting the pretest. During the first stage of data analysis, the researcher processed the returned IRB permission forms and the pretest. Each participant was coded by a numeral (e.g. 1, 2, 3) for identification purposes. Group A participants were coded as 1 and Group B was identified with a 2. The treatment was the second stage while the posttest acted as the final stage.

The study used dependent-samples (matched-pairs, paired samples) t-test, mean scores, and percentages within

each group. Independent-sample t-test measured between groups. The data from the pretest and posttest was processed into the SPSS statistical software at $p < .05$ to test the null hypothesis that there is no difference between the means of the pretest and posttest results as well as between group posttest results (Kirkpatrick & Feeney, 2005). Raw data were held in the researchers locked file cabinet for 5 years. Data were available for participating gatekeepers to view within the community upon request. Data from the survey instruments and detailed evaluation of data can be found in tables located in Chapter 4.

SECTION 4:

RESULTS

The quantitative pretest-posttest control group study, examined the relationship between academic incentives and student motivation to start and complete a three-week fitness program. Within this section, the researcher provided data analysis for the two groupings of seventh-grade students based on the self-determination theory. Material was collected through a pretest and posttest method. Dependent-samples (matched-pairs, paired samples) *t*-test, mean scores, percentages, and independent-sample t-test were used to test the hypothesis and answer the research question. Independent-sample t-test measured between groups. Detailed data collection procedure along with descriptive statistic for the research questions was measured by the YRBS pretest and posttest survey.

The research question tried to determine how academic incentive externally motivated seventh-grade students to participate in a three-week fitness program. To examine this question in detail, the researcher utilized the five

questions from physical activity section of the YRBS survey.

Data Collection

Over a three-week period in April of 2008, participants in both groups completed a pretest, a three-week fitness program, and a posttest. In regards to traditional quantitative, pretest-posttest control group study both groups were given a pretest and posttest with the experimental group only receiving the academic incentive.

Three seventh-grade physical educators volunteered a total of six regular, traditional, coed-physical education classes to take part in the study. To determine which classes were the control group and experimental group, one physical educator was asked to pick A or B. This teacher did not possess prior knowledge of which group was the experimental or control group. This teacher's classes, along with one other physical educator class, became Group A while Group B was comprised of three classes from a different participating physical education teacher. The sample size was based on a 10% confidence interval and a 95% confidence level (N = 105, n = 24) (Kirkpatrick &

Feeney, 2005). Group A n = 53, and Group B n = 52. A 23% response rate of 24 students was achieved. Group A had 25% response rate with 13 students while Group B had 21% responded with 11 participants.

Participants in both groups completed the pretest at home and returned the pretest with the parental or guardian and student permission forms to their physical educator or mailed them to the researcher. The study used the same goals as the Active Lifestyle Program. Children were asked to meet their individual daily activity goal of 60 minutes a day for at least five days a week or attain a minimum of 11,000 steps for girls, or 13,000 for boys a day (as measure by a pedometer) at least five days a week over a three-week period (USDHHS, n.d.b). Upon completion of the three-week program, participants were mailed a posttest along with instructions about how to complete the study. The posttests along with the fitness logs were mailed to the researcher.

Results

Three-week Fitness Program

Participants from both groups were asked to be physically active for a minimum of five days a week over a

three-week period (USDHHS, n.d.b). Upon completion of the three-week fitness phase Group A participants, fully meeting the requirements set forth by the Active Lifestyle Program, received four academic points onto their nine weeks grade. Students not completing the entire program received no reward.

Group A had n = 13 students take part in the study and Group B had n = 11 participants. Based on the Group A log sheets, data reveals n = 10 or 77% fully completed the three-week fitness program. According to students log sheets, one participant was injured during physical education class on the final week and two participants completed the full numbers of days for each week but were short on time for a number of days. Group B results concluded 9 out of the eleven or 82% completed the entire program.

Question One

Do academic incentives motivate students to start and complete a three-week fitness program as measured by the YRBS survey? Participants in Group A and Group B were asked how many of the past 7 days did the student exercise or participate in physical activity for at least 20 minutes

that made the student sweat and breathe hard, such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities? Based on the pretest and posttest results for Group A, pretest mean score was 5.3077 and the posttest (M = 6.3077) (Table 1). Thus producing a mean difference of -1.000, and t = -2.280, (Table 2). With the set level of significance at α = .05 for two tails and df = 12, the critical values are $\pm$2.179, the decision is to reject H_o and conclude that the treatment effect is significant.

Group B results revealed pretest (M = 6.000) and posttest result was (M = 6.1818) (Table 1). Therefore, creating a mean difference of -.18182, with t = -.311 (Table 2). The set level of significance at α = .05 for two tails and df = 10, the critical values are $\pm$2.228. The decision is to fail to reject H_o and conclude the treatment had no significant effect on Group B participants.

Between groups posttest results shown posttest single 2 tailed = .827 (Table 3). The set level of significance at α = .05 for two tails and df = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude

the treatment had no significant effect between Group A and Group B participants.

Prior to the three-week fitness program 58% of the 13 participants in Group A were physically active 5 days or more for 20 minutes, while the posttest end results had 83% of the participants stated they took part in physical activity that made them sweat and breathe hard five or more days for 20 minutes. Group B participants pretest results concluded 82%, 9 of the 11 participants, were active 5 or more days during the previous week for at least 20 minutes. Posttest had shown a slight decrease of activity to 72% or 8 participants being physically active during the same period with the same intensity levels.

Table 1

Question 1 Means, Standard Deviation for Group A and B

Group	*n*	*M*	*SD*	*SE*
A	13	Pre = 5.3077 Post = 6.3077	Pre = 1.79743 Post = 1.25064	Pre = .49852 Post = .34687
B	11	Pre = 6.0000 Post = 6.1818	Pre = 1.73205 Post = 1.53741	Pre = .52223 Post = .46355

Table 2

Question 1 Paired Differences and

t scores for Group A and B

Group	*df*	*t*	*M difference*	*Sig. (2 tailed)*
A	12	-2.280	-1.0000	.042
B	10	-.311	-.18182	.762

Table 3

Question 1 Between Group A and Group B Posttest Results

variance	*df*	*t*	*M difference*	*Sig. (2 tailed)*
Equaled assumed	22	.221	.12587	.827

Question Two

The second question was similar to the previous question but focused on a ten-minute increase of time participants spent being physical activity along with a decrease of intensity. Group A and Group B participants were asked on how many of the past 7 days did the student participate in physical activity for at least 30 minutes that did not make him or her sweat or breathe hard, such as

fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors?

The pretest and posttest results for Group A, pretest (M = 4.3948) and the posttest (M = 4.2308) (Table 4) resulting in a mean difference of .15385 with t = .203 (Table 5). The significance level set at α = .05 for two tails, df = 12, the critical values are $\pm$2.179 therefore the decision for Group A is to fail to reject H_o and conclude the treatment had no significant effect.

Group B pretests (M= 4.6364) and posttest (M = 4.8182) (Table 4). Therefore, creating a mean difference of -.18182 and t = -.243 (Table 5). The set level of significance at α = .05 for two tails and df = 10, the critical values are $\pm$2.228. The decision is to fail to reject H_o and conclude the treatment had no significant effect on Group B participants.

Between groups posttest results reveal posttest single 2 tailed = .520 (Table 6). The set level of significance at α = .05 for two tails and df = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants.

According to the pretests from Group A, 31%, 4 of the 13 participants meet the questions requirements while 36% of Group B participants said they were being physically active for 5 or more days a week for 30 minutes over the past 7 days. The posttest results and pretest were identical for Group B while Group A had an increase of one participant.

Table 4

Question 2 Means, Standard Deviation for Group A and B

Group	*n*	*M*	*SD*	*SE*
A	13	Pre = 4.3846 Post = 4.2308	Pre = 2.29269 Post = 2.27866	Pre = .63588 Post = .63199
B	11	Pre = 4.6364 Post = 4.8182	Pre = 2.24823 Post = 2.08893	Pre = .67787 Post = .62984

Table 5

Question 2 Paired Differences and

t scores for Group A and B

Group	*df*	*t*	*M difference*	*Sig. (2 tailed)*
A	12	.203	.15385	.843
B	10	-.243	-.18182	.813

Table 6

Question 2 Between Group A and Group B Posttest Results

variance	*df*	*t*	*M difference*	*Sig. (2 tailed)*
Equal assumed	22	-.653	-.58741	.520

Question Three

The third question of this study examined the President's Challenge Active Lifestyle Program goal. The Active Lifestyle Program suggested children under the age of 18 be active 60 minutes a day five days a week (USDHHS, n.d.b). Question three asked participants from both groups, during the past 7 days; on how many days was the student active for a total of at least 60 minutes per day? (The student was instructed to add up all the time he or she spent in any kind of physical activity that increased his or her heart rate and made the student breathe hard some of the time.)

Group A pretest results revealed (M = 5.6154) while the posttest (M = 5.7692) (Table 7) resulting in a mean difference of -.15385 with t = -.379 (Table 8). The significance level set at α = .05 for two tails, df = 12,

the critical values are ±2.179 therefore the decision for Group A is to fail to reject H_o and conclude the treatment had no significant effect.

Group B pretests (M = 5.0000) and posttest results (M = 6.0000) (Table 7). Therefore, creating a mean difference of −1.0000, and t = -1.854 (Table 8). The set level of significance at α = .05 for two tails and df = 10, the critical values are ±2.228. The decision is to fail to reject H_o and conclude the treatment had no significant effect on Group B participants.

Between groups posttest results disclosed posttest single 2 tailed = .707 (Table 9). The set level of significance at α = .05 for two tails and df = 22, the critical values are ±2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants.

The study revealed 62%, eight out of 13 participants, in Group A were active 60 minutes a day for at least five days on the week prior to the study taking place. Upon completion of the three-week fitness program, treatment phase data concluded 77%, 10 out of 13, met the challenge.

Group B participants pretest results concluded 45% meet the President's Challenge Active Lifestyle Program goal prior to starting the fitness-challenge. At the conclusion of the three weeks, 82 percent of the participants stated they were physically active for 60 minutes for 5 or more days on the previous week.

Table 7

Question 3 Means, Standard Deviation for Group A and B

Group	*n*	*M*	*SD*	*SE*
A	13	Pre = 5.6154 Post = 5.7692	Pre = 1.44559 Post = 1.64083	Pre = .40094 Post = .45508
B	11	Pre = 5.0000 Post = 6.0000	Pre = 2.32379 Post = 1.26491	Pre = .70065 Post = .38139

Table 8

Question 3 Paired Differences and t scores for Group A and B

Group	*df*	*t*	*M difference*	*Sig. (2 tailed)*
A	12	-.379	-.15385	.711
B	10	-1.854	-1.00000	.093

Table 9

Question 3 Between Group A and Group B Posttest Results

variance	*df*	*t*	*M difference*	*Sig. (2 tailed)*
Equal assumed	22	-.380	-.23077	.707

Question 4

The first three questions assessed the duration of physical activity along with intensity levels. With sedentary lifestyles increasing among this population (CDC, n.d.a) and considering the importance motivation has on one choosing to spend time being physically active (Corbin & Lindsay, 2005 Ryan, 1982), the forth question asked the participants on an average school day, how many hours do you watch TV?

Group A pretest results revealed (M = 3.3846) and the posttest (M = 2.9231) (Table 10) resulting in a mean difference of .46154 with t = 1.196 (Table 11). The significance level set at α = .05 for two tails, df = 12, the critical values are $\pm$2.179 therefore the decision for Group A is to fail to reject H_o and conclude the treatment had no significant effect.

Group B pretests (M = 3.4545) and posttest (M = 3.1818) (Table 10). Therefore, creating a mean difference of .27273, and t = 1.000 (Table 11). The set level of significance at α = .05 for two tails and df = 10, the critical values are $\pm$2.228. The decision is to fail to reject H_o and conclude the treatment had no significant effect on Group B participants.

Between groups posttest results disclosed equal variances for posttest single 2 tailed = .629 (Table 12). The set level of significance at α = .05 for two tails and df = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants.

Table 10

Question 4 Means, Standard Deviation for Group A and B

Group	*n*	*M*	*SD*	*SE*
A	13	Pre = 3.3846 Post = 2.9231	Pre = 1.12090 Post = 1.03775	Pre = .31088 Post = .28782
B	11	Pre = 3.4545 Post = 3.1818	Pre = 1.36848 Post = 1.53741	Pre = .41261 Post = .46355

Table 11

Question 4 Paired Differences

and t scores for Group A and B

Group	*df*	*t*	*M difference*	*Sig. (2 tailed)*
A	12	1.196	.46154	.255
B	10	1.000	.27273	.341

Table 12

Question 4 Between Group A and Group B Posttest Results

variances	*df*	*t*	*M difference*	*Sig. (2 tailed)*
Equal assumed	22	-.490	-.25874	.629

Question 5

The final question participants in Group A and Group B were asked: during the past 12 months, on how many sports teams did you play? (Include any teams run by your school or community groups.)

Based on the pretest and posttest results for Group A, pretest (M = 2.4615) and the posttest (M = 2.7692) (Table

13). Thus producing a mean difference of -.30769, *t* = -1.760 (Table 14). Group B results revealed pretest (M = 2.3636) and posttest result was (M = 2.3636) (Table 13). Therefore, creating a mean difference of 0.000, with *t* = 0.000 (Table 14).

Pretest Data from the pretest reveal 85% of the participating students in Group A (Table 15) were a part of one or more team over the past year while 63% of the participants from Group B (Table 16) were involved in one or more team sports prior to the posttest.

Between groups posttest results disclosed posttest single 2 tailed = .836 (Table 17). The set level of significance at α = .05 for two tails and *df* = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants.

Table 13

Question 5 Means, Standard Deviation for Group A and B

Group	*n*	*M*	*SD*	*SE*
A	13	Pre = 2.4615 Post = 2.7692	Pre = 1.12660 Post = 1.16575	Pre = .31246 Post = .32332
B	11	Pre = 2.3636 Post = 2.3636	Pre = 1.12006 Post = 1.20605	Pre = .33771 Post = .36364

Table 14

Question 5 Paired Differences

and t scores for Group A and B

Group	*df*	*t*	*M difference*	*Sig. (2 tailed)*
A	12	-1.760	-.30769	.104
B	10	.000	.00000	1.000

Table 15

Group A Pretest and Posttest Team Participation

Number of Teams	*n = Pretest*	*Pretest %*	*n = Posttest*	*Posttest %*
None	3	23%	2	15%
One	4	31%	4	31%
Two	3	23%	2	15%
Three or more	3	23%	5	38%

Table 16

Group B Pretest and Posttest Team Participation

Number of Teams	*n* = *Pretest*	*Pretest %*	*n* = *Posttest*	*Posttest %*
None	3	27%	3	27%
One	3	27%	4	36%
Two	3	27%	1	9%
Three or more	2	18%	3	27%

Table 17

Question 5 Between Group A and Group B Posttest Results

variances	*df*	*t*	*M difference*	*Sig. (2 tailed)*
Equal assumed	22	.836	.40559	.412

Summary of Findings

Physical activity levels are decreasing among school age children (CDC, n.d.a) thus this study's research question sought to bring about social change by evaluating how academic incentives externally effect seventh-graders to start and complete a three-week fitness program during their leisure time. This quantitative pretest-posttest

control-group design was conducted in April 2008 and was based on the self-determination theory. Dependent-samples (matched-pairs, paired samples) t test, mean score, and percentages were used to test the hypothesis and answer the research question.

Analysis based on percentage of participants from both groups taking part in the three-week fitness challenge in which students participated in sixty minutes of physical activity were conducted to determine if there would be an increase in participation in physical activity. It was concluded that both Group A and Group B saw an increase of participation physical activity over a three-week period however, control Group B saw the largest increase. Data analysis revealed there was a 15 percent increase for the participants in Group A that met the criteria for being active 60 minutes a day for at least five days a week. Data for Group B concluded 82% of the students met the same challenge that produced a 37% increase.

In regards to the first question taken from the YRBS survey, there was a disparity between the two groups participation amounts. Group A data revealed 83% met the goals which produced a 25% increase while Group B saw a 10

percent decrease from 82% to 72%. This hypothesis was also tested using a dependent *t* test. It was concluded that there was a significant difference from the experimental group and therefore, the reward had an affect on students in Group A to participate in activities that made them sweat or breathe hard for at least 20 minutes a day. The next question also used a dependent *t* test and discovered there was no significant for either Group. Independent sample t-test between group posttest results concluded there was not significant difference. Thus, it was concluded that the external reward had no effect on increasing the participation as it relates to the YRBS survey.

The third question taken from the YRBS survey addressed the main research question did seventh-graders report being active for 60 minutes for a minimum of 5 days a week. This hypothesis was tested using the dependent *t* test and Group A results, even though there was a 15% increase in participation, concluded there was not a significant difference found in the *t* test, therefore concluding the academic reward did not have a direct impact on influence Group A participants to increase their

physical activity levels. Group B did not receive the treatment of the four academic points but were challenged to complete the task. This question revealed the greatest increase compared to the other YRBS questions from Group A. At the conclusion of the three-week fitness program, 82% of the participants from Group B stated they met the goal. This was a 37% increase in participation. Nevertheless, *t* test results concluded that there was not enough of a significance difference at $\alpha = .05$ for two tails and $df = 10$. Additionally, between group independent sample t-test results also confirmed that there was not enough of a significance difference.

The final two questions of the YRBS survey addressed two unique issues. The first looked at the amount of time students spent watching TV during a school week. Results shown there was a slight decrease in the amount of TV students watched throughout the week from both groups but according to the *t* test there was no significant difference and it was concluded the treatment had not significant effect of either group. The final question asked the participants if they were apart of a team over the past year. Based on the mean scores, Group A data shown a slight

increase in team participation while Group B responses did not change from the pretest results to the posttest therefore, it was concluded that the external reward had no significant effect on team participation.

Section 5 will discuss the findings and significance of the research, recommendations for action and further study.

SECTION 5:

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This section is separated into eight parts which provides summaries and comments that cover: purpose of the study, theoretical framework, methodology, research design and approach, discussion of the findings, implication for social change, conclusion, and recommendations.

Summary of Purpose of Study

The purpose of this study was to explore the effectiveness academic incentives had on motivating seventh-grade middle school students to become physically active during their leisure time. Previous studies, governmental organizations, and educational promoters have advocated the health and social benefits directly linked to adolescence participating in moderate physical activity five days a week for 30 to 60 minutes (Corbin & Lindsey, 1991; Bryan, 2006; CDC, n.d.b, APPHERD, 2007). Despite these efforts, there has been a decrease in physical activity among young people during their leisure time thus creating physical, social, and economic dilemmas among this generation (CDC, n.d.a).

Previous studies have produced controversial issues surrounding the short and long-term effects of external motivators (Ryan & Deci, 2000; Ryan 1982). Thus, this researcher sought to expand on literature base available by exploring academic incentives and the direct impact rewarding students with four points onto their nine weeks grade affected the amount of time seventh-graders were physical activity during their leisure time. This area of examination was based on the self-determination theory (Ryan & Deci, 2000).

Summary of Theoretical Framework

The theoretical framework of this study was based on Ryan and Deci's (2000) self-determination theory. The self-determination theory identifies three types of motivation and tries to identify why people choose to do what they do (Ryan & Deci, 2000; Ntoumanis, 2001). The framework for the three types of motivation are intrinsic, extrinsic, and amotivation (Ryan & Deci, 2000). Wlodkowski & Jaynes (1990) considers intrinsic motivation to be the primary means by which individuals choose to participate in an activity for the sole purpose of self-gratification and these individuals can stand on their own without any outside

influences. Whereas extrinsic motivation refers to a distinguished variable that influences ones motives for participating in the activity (Ryan & Deci, 2000). Ryan and Deci (2000) further stated, without the reward, one would not take part in the activity or would not choose to remain in the desired task once the reward was removed.

Organizations and programs are recommending children to spend more time being physically active (Bryan, 2006; CDC, n.d.b). However, there has been a paucity of research concerning this topic along with creative methods on how to proceed towards reversing the current social challenges; a lack of physical activity brings to this generation (Bryan, 2006; CDC, n.d.b). Therefore, a study focus on extrinsic motivation and its impact on influencing seventh-graders to be physically active outside the school setting were observed.

Summary of Methodology

Data was retrieved from one rural middle school in Mill Hall, Pennsylvania using a quantitative study. The study took place in April 2008 over a four-week period and was conducted in three stages, which included a pretest, treatment phase, and finally a posttest. The sample size

was based on a 10 percent confidence interval and a 95 percent confidence level (N = 105, n = 24) (Kirkpatrick & Feeney, 2005). A population of N=105 students was achieved, n=53 in Group A, and n = 52 from Group B a 23% response rate of 24 students was achieved. Group A had 25% respond rate with 13 students while Group B had 21% with 11 participants.

The study used dependent-samples (matched-pairs, paired samples) t test, mean scores, and percentages. Additionally, independent-sample t-test measured between groups. The data from the pretest and posttest was processed into the SPSS statistical software at $p < .05$ to test the null hypothesis that there is no difference between the means of the pretest and posttest results as well as between group posttest results (Kirkpatrick & Feeney, 2005). The intent of this study was to determine whether the independent variable of this study, external reward of the academic incentive, had an effect on the dependent variable of the students' leisure time physical activity

This study answered the following question. How does an academic incentive externally motivate seventh-grade

students to participate in a three-week fitness program? To enhance understanding on how effective academic incentives are in relationship to motivating participants in Group A to be active, this study utilized the five questions from the physical activity section of the YRBS questionnaire. The following hypotheses were tested.

1. Academic incentives added onto a nine week's grade will have no significant effect on students' motivation to participate in moderate physical activity during their leisure time.
2. Academic incentives added onto a nine-week's grade will have an effect on students' motivation to participate in moderate physical activity during their leisure time.

Summary of Research Design and Approach

This research study used a control group pretest-posttest design, which focused on rewarding students, in the experimental group, for being physically active during their leisure time while the control group received an oral challenged from the researcher to complete the same fitness program (Deci & Ryan, 2000). The four academic points enabled student's to raise their nine weeks grade a half a

letter grade for the nine weeks. The second phase of the study was the three-week fitness challenge, which consisted of the President's Challenge Active Lifestyle Program goals. Participants for both groups were asked to complete the fitness program and the posttest.

Five questions were explored from the YRBS survey in this study. The first question was: On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities? The second question: On how many of the past 7 days did you participate in physical activity for at least 30 minutes that did not make you sweat or breathe hard, such as fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors?

The third question asked: During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spend in any kind of physical activity that increases your heart rate and makes you breathe hard some of the time.)

The fourth question asked: On an average school day, how many hours do you watch TV? The final question followed with: During the past 12 months, on how many sports teams did you play? (Include any teams run by your school or community groups.)

Data Analysis and Findings

The first phase of the study evaluated the effectiveness academic rewards had on influencing Group A to start and complete a three-week fitness program and secondly aimed to discover the impact challenging participants from Group B would have on seventh-graders to meet the same requirements. Group A (n = 13), Group B (n = 11) participants took part in the study. Pretest results for Group A revealed (n = 8, 62%) while Group B (n = 4, 36%) were active 60 minutes on at least 5 days during the past week. Posttest results for both groups revealed an increase in physical activity levels with Group A (n = 10, 77%, and 85% involved in sports) and Group B increase (n = 9, 82%, and 72% involved in sports). The CDC (2007) MSYRBS reported, 69% of seventh graders participated for 20 minutes or more on at least three of seven days and 58 percent participated in sports teams prior to the study.

Therefore, Group A had more participants physically active than the MSYRBS had reported. It is interesting to note that Group B, which did not receive the four point academic reward, increased participation by 37%, with 82% completing the entire three-week fitness program. Despite the fact that Group A, receiving the treatment, Group A had only 15% increase in participation.

Trudge and Caruso (1989) noted adolescents normally take part in activities they find interesting or valuable. Posttest results disclosed 85% of Group A participants and 72% of Group B participants were involved in one or more team sports over the past year. This agrees in principle with the self-determination theory. Intrinsic motivation to participate in physical activity for the pure satisfaction and joy the activity brings is the underling force for adolescences to engage in sport or games (Ryan & Deci, 2001; Wlodkowski & Jaynes, 1990). Therefore, the researcher concludes the academic incentive was not a strong external motivator to stimulate individuals not currently meeting the goal of the CDC or Presidential Active Lifestyle Program to start and complete the three-week fitness challenge.

Question One

Students engaging in physical activity for 20 minutes which made them sweat or breath hard had the greatest increase in Group A compared to the remain four YRBS questions with 83 percent of the students meeting the goal. Question one results revealed Group A (difference M = -1.0000, t = -2.280). With the set level of significance at α = .05 for two tails and df = 12, the critical values are $\pm$2.179 the decision is to reject H_o and conclude that the treatment effect is significant.

However, Group B recorded a 10% decrease from 82% to 72%. It was concluded that there was not a significant difference for Group B. Data analysis disclosed over three quarters of the students were previously engaged in participating in physical activity that made them sweat for a minimum of 20 minutes prior to the study taking place.

Between groups posttest results shown posttest single 2 tailed = .827. The set level of significance at α = .05 for two tails and df = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants. Thus, this data reinforces Ryan and

Deci (2000) self-determination theory that intrinsic motivation is the highest level of motivation.

Question Two

The second question focused on 30 minutes of physical activity without the participants sweating or breathing hard. The research used mean scores and a dependent *t* test for both Groups and the data reveal Group A pretest (M = 4.3948) and the posttest (M = 4.2308) resulting in a mean difference of .15385 with *t* =.203. The significance level set at α = .05 for two tails, *df* = 12, the critical values are $\pm$2.179. Group B pretests (M = 4.6364) and posttest (M=4.8182) therefore, creating a mean difference of -.18182, and *t* = -.243. The set level of significance at α = .05 for two tails and *df* =10, the critical values are $\pm$2.228.

Between groups posttest results reveal posttest single 2 tailed = .520. The set level of significance at α = .05 for two tails and *df* = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants.

Question Three

Question three addressed the question: will a seventh-grader be active for 60 minutes for a minimum of 5 days a week. Group A pretest results revealed (M = 5.6154), posttest (M = 5.7692) resulting in a mean difference of -.15385 with t = -.379. The significance level set at α = .05 for two tails, df = 12, the critical values are $\pm$2.179. Group B pretests (M = 5.0000), posttest results (M = 6.0000). Therefore, leaving a mean difference of –1.0000, and t = -1.854 . The set level of significance at α = .05 for two tails and df = 10, the critical values are $\pm$2.228. The decision is to fail to reject H_o and conclude the treatment had no significant effect on Group A or Group B participants.

Between groups posttest results disclosed posttest single 2 tailed = .707. The set level of significance at α = .05 for two tails and df = 22, the critical values are $\pm$2.074. The decision is to fail to reject H_o and conclude the treatment had no significant effect between Group A and Group B participants.

Question Four and Five

Question four and five addressed issues that are directly connected to physical activity but neither measures the amount of time students are active. Question four evaluates the amount of time seventh-graders watch TV during the school week.

Group A pretest results (M = 3.3846) or 1.3 hours per day, posttest (M = 2.9231) or less than one hour per day. Mean difference was .46154 with t = 1.196. The significance level set at α = .05 for two tails, df = 12, the critical values are $\pm$2.179. Group B pretests (M = 3.4545) or 1.45 hours, posttest (M = 3.1818) or 1.2 hours per TV per school day. Therefore, creating a mean difference of .27273, and t = 1.000. The set level of significance at α = .05 for two tails and df = 10, the critical values are $\pm$2.228. The decision is to fail to reject H_o and conclude the treatment had no significant effect on either Group A or Group B. Question five asked the participants in both groups over the past year how many teams were they on.

Based on the pretest and posttest results for Group A, pretest (M = 2.4615), posttest (M = 2.7692). Thus producing a mean difference of -.30769 and t = -1.760. Group B

results revealed pretest (M = 2.3636) and posttest result was (M = 2.3636). Therefore, creating a mean difference of 0.000, with *t* = 0.000. The decision is to fail to reject H_o and conclude the treatment had no significant effect on either Group A or Group B.

Summary of Implication for Social Change

This study focused on the problem, which is affecting adolescences overall health. The ongoing problem is the decrease of time children spend being physical activity and the health implication associated with sedentary lifestyles (CDC, n.d.a). A number of individuals and studies noted culture, economics, environment, and stakeholders directly linked to adolescences have a direct impact on children's motivation to choose a lifestyle of physical activity (Wlodkowski & Jaynes, 1990; WHO, n.d.a). Understanding these motivational factors enable physical educators, administrators, parents, and children greater insight to bring about change during adolescences playtime.

To bring community change and address the health problem facing adolescents, this study was conducted in a rural school district located Mill Hall, Pennsylvania in April 2008. The study focused on increasing seventh-graders

who are not currently motivated to participate in physical activity outside the school environment by using extrinsic motivation as the method to motivate the student's to take part in a three-week fitness program. The external motivator was four grade points added onto a participant nine weeks grade for completing the fitness challenge (Ryan & Deci, 2000).

According to the CDC (n.d.a), research shows there are health benefits for individuals who engage in moderate physical activity for a minimum of 30 minutes five out of seven days a week (CDC, n.d.a) however, there is insufficiency of research emphasizing how physical educators, parents, and school administers can bring about change.

Over the years, research has produced mixed results as to the effectiveness external motivation has on stimulating individuals to participate as well as the implications for long-term consequences external motivators have on their subjects (Fairclough & Stratton, 2005; Britteham, 2002; Ryan & Deci, 2000; Eisenberger & Cameron, 1996). Organizations have encouraged the public to transform children's leisure time into one of being more physically

active, but have not provide the tools necessary to bring about this social change. The timing of this quantitative pretest-posttest control group study was significant to each community and educational institution. This study provided additional incite into what motivates or does not motivate seventh-graders to be physically active as well as to further validate Ryan and Deci self-determination theory.

Conclusion and Recommendations

A total of 24 seventh-graders participated in the study. The study had n = 13 participants in Group A and n = 11 participants in Group B take part in the fitness challenge. Overall, Group A had 10 complete the three-week program. One student was on track to complete the task but became injured in physical education class during the last week and two students completed the number of days but did not meet the time objective on a couple of days, consequently they did not complete the entire fitness program. Group B had 9 participants complete the three-week fitness program. The results from the study showed that 83% of all the participants completed the Active Lifestyle Program. Group B predominately had more participants

complete the program than the experimental Group A that received the external reward.

Each question of the physical activity section was mutually asked to both Groups. Group A had 62% of the participants currently meeting the Active Lifestyle Program goal prior to the study. Although question one results concluded a significant effect based on the *t* test, further research is need to address this question. It is recommended additional questioning take place to see if an academic reward truly improves seventh-graders effort to participate in physical activity for 20 minutes, which makes them, sweat or breathe hard or if another variable would manipulate question one results.

The study further substantiated how intrinsic motivation is considered the highest level of motivation and consequently is the principal driving force for seventh-graders to take part in a three-week fitness challenge (Ryan & Deci, 2000). Upon final analysis, Group A had 77% complete the task with 85% of the participants being involved in one or more teams over the past year. It can be concluded that academic incentives, serving as an external motivator to motivate seventh-graders who do not

currently meet the Active Lifestyle Program of participating 60 minutes 5 days a week was not an adequate amount of an extrinsic motivator to motivate seventh-graders to take part in the three-week fitness challenge and change their leisure time behaviors.

Within Group B, it was concluded that 36% were meeting the same goals as participants in Group A were prior to the study taking place. This group finished with 82% completing the three-week fitness challenge and saw 72% of the students participated in one or more teams over the past year. Questions remain as to the means by which participants chose to become apart of the study and have so many complete the challenge. According to Ryan and Deci (2000) people are motivated for a variety of reasons and since this control group did not receive a reward for completing the program the number of participants were all most identical as the experimental group and had Group B had 83% completion rate. It is recommended that further research be considered as to ascertain the reasoning behind why Group B was as motivated to take part in and complete the study.

Recommendations for Future Research

The purpose of this study was to examine the relationship academic incentives had on motivating seventh-graders to be active for a minimum of 5 days a week for 60 minutes over a three-week period. The specific population of this study was European American and was conducted in one, rural school located in Central Pennsylvania. Research in this area lacks sufficient data, this study found no significant data supporting external rewards other than the data recorded from question one. However, this study should be duplicated in other middle schools across America representing different populations and settings. Results of this study may vary when larger samples are comprised and students from different populations are included. Further research conducted in multiple settings will provide academia with greater insight and help stakeholders to be able to ascertain the role external motivators have physical activities levels as measured by the YRBS survey.

The current study was conducted utilizing a quantitative pretest and posttest control group study however, a mixed method approach was considered. Future studies may focus on a mixed method study. A mixed study

could dig deeper into areas that the quantitative study was limited in and provide themes as well as strategies for future research (Creswell, 2003). Nonetheless, using the quantitative methods within this research has enabled the researcher to determine that the underlining principles of external motivation as it relates to academic incentives to improve physical activity levels in adolescents was not an affective means to motivate seventh-graders to start, maintain, and complete a three-week fitness challenge. This method has further proven valuable insight to support Ryan and Deci (2000) self-determination theory in regards to the importance concerning the role internal motivation has on ones determination to be physically active as compared to its counterpart, extrinsic motivation.

Yet, questions remain regarding methods by which physical educators and parents can use to bring about social change to motivate adolescents to be motivated to physical activity. Hence, with this social problem, future research is needed to address this social dilemma so as to meet the physical, mental, social, economic, and spiritual needs of youth so they can become motivated to participate

in physical activity and experience the health benefits associated with irregular exercise.

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APPENDIX A:

Assent Form

Subject: YRBS/INSTRUMENTS
To: jbrinker@oak.kcsd.k12.pa.us
cc: "Kann, Laura K. (CDC/CCHP/NCCDPHP)" <lkk1@CDC.GOV>,
"Kinchen, Steve (CDC/CCHP/NCCDPHP)" <sak1@CDC.GOV>,
"Beistle, Diane (CDC/CCHP/NCCDPHP)" <zgv1@CDC.GOV>,
"Snow, Sara (CDC/CCHP/NCCDPHP) (CTR)" <fma9@CDC.GOV>,

Jeff - I am sorry but there is no permission to give. All the material on the website is in the public domain. It is there to be used. Thanks.

Laura

[THREAD ID:1-NKH3C] [SR No.:1-39590737]

APPENDIX B

Assent Form for Testing Site

Keystone Central School District
Central Mountain Middle School
95 West Fourth Street
Lock Haven, PA 17745
(570) 893-4900 Fax: (570) 893-4923

November 5, 2007

Dear Mr. Brinker,

Based on my review of your research proposal, I give permission for you to conduct the study entitled "THE INFLUENCE OF ACADEMIC INCENTIVES ON MIDDLE SCHOOL PHYSICAL EDUCATION STUDENTS: PROMOTING PHYSICAL ACITIVITY DURING LEISURE TIME" within Keystone Central School District at the site of Central Mountain Middle School. As part of this study, I authorize you to invite members of my faculty within the physical education department as well as their seventh-grade regular physical education classes, to participate in the quantitative one-group pretest/posttest design study. Their participation will be voluntary and at their own discretion. We reserve the right to withdraw from the study at any time if our circumstances change. I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Donald Wills, Ed. D.
Superintendent
Keystone Central School District

APPENDIX C

Parental/Guardian Consent Form A

Hello, my name is Jeff Brinker and I am doing a project to learn how effective academic incentives are on motivating seventh-grade middle school students, to become physically active during their leisure time. I am inviting your child to join my project. I picked your child for this project because I am studying seventh-graders within Central Mountain Middle School. At this time, I would like to take the time to inform you and your child about the study that will take place during the nine weeks of this marking period in the 2007-2008 school year.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I currently teach health and physical education at Central Mountain High School. Over the past 8 years I had the opportunity to teach health and physical education at Central Mountain Middle School and presently I am the Head Jr. High Girls Soccer coach at Central Mountain.

ABOUT THE PROJECT:
The Centers for Disease and Control suggests children should exercise on a regular basis (5 days a week for 60 minutes each day) during their leisure time. Your child will be asked to take up this challenge and participate in a three-week fitness program. This project uses an academic reward to motivate your child to start and complete a three-week fitness program. The academic incentive is four bonus points added on to your child's nine-week grade. To get the bonus points, your child will have to complete the challenge of being physically active 5 -7 days a week, for 60 minutes a day, for three weeks. However, if your child chooses to take the challenge and drops out your child will not receive the four bonus points added onto their nine weeks grade. Your child's grade will not be affected if you choose not to have him or her participate in the study. If you permit your child to join this research project, your child will be asked to do a couple of things:

1 Take part in a pretest.
This pretest has five questions relating to how much time your child spends being physically active and the amount of time he or she watches TV.

2 Take part in a brief meeting at school.
This meeting will take place during the activity period. Your child will be instructed on how to do the Active Lifestyle Fitness Program at this meeting. Students unable to attend this meeting will not be allowed to proceed with the project.

3 Complete a Three-week fitness program
Your child will be challenged to be physically active 5 – 7 days per week for 60 minutes during their leisure time *(physical education class does not count).*

or

Girls can walk 11,000 steps 5 – 7 days per week using a pedometer.
Boys can walk 13,000 steps 5 – 7 days per week using a pedometer

(You must supply the pedometer; the study does not issue pedometers out.)
*In addition to being active your child will be asked to fill out a log of the amount of time he or she spent being active. At the end of each week, you the parent/guardian will need to sign the journal signifying your child has completed the requirements for the week.

4 . Finally, take a posttest.
This posttest will be the same as the pretest. It will be mailed to you and your child will complete it at home.

IT'S YOUR CHOICE:
This study is voluntary. You don't have to allow your child to join this project if you don't want to. You child will not get into trouble with your child's physical education teacher or the administration within Central Mountain Middle School if you say no and your child's nine weeks grade will not be affected. If you decide now that you want your child to join the project, you can still change your mind later just by telling me. Your child only has to answer the questions he or she feels comfortable answering on the pretest/posttest. It is possible that being in this project will have some potential health risks, but this project might help others by improving muscular strength, controlling weight, relieve anxiety and stress, improve one's self-esteem, and aid in the development of your child becoming a lifelong pursuer of being physically active.

PRIVACY:
Everything your child tells me during this project will be kept private. Confidentiality is important. This means that no one else, other than the researcher, will know how your child answered the questions on the pretest/posttest. However, the physical education teachers will be made aware of the names of students taking part in the study so they can reward them accordingly at the end of the nine weeks. The only time I have to tell someone is if I learn about something that could hurt your child or someone else.

ASKING QUESTIONS:
You can ask me any questions you want. You can contact me at 570-748-9247 from the hours of 4:00 p.m. to 7:00 p.m. daily. If you would like to ask Walden University, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

THERE ARE TWO PARENTAL/GUARDIAN CONSENT FORMS.
RETURN ONE AND KEEP ONE FOR YOUR RECORDS.

Please sign your name below if you are willing to have your child participate in this educational research project.

Name of Child (print) Date:

Parent/Guardian Signature

Researcher Signature

APPENDIX D

Parental/Guardian Consent Form B

Hello, my name is Jeff Brinker and I am doing a project to learn how effective academic incentives are on motivating seventh-grade middle school students, to become physically active during their leisure time. I am inviting your child to join my project. I picked your child for this project because I am studying seventh-graders within Central Mountain Middle School. At this time, I would like to take the time to inform you and your child about the study that will take place during the nine weeks of this marking period in the 2007-2008 school year.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I currently teach health and physical education at Central Mountain High School. Over the past 8 years I had the opportunity to teach health and physical education at Central Mountain Middle School and presently I am the Head Jr. High Girls Soccer coach at Central Mountain.

ABOUT THE PROJECT:
The Centers for Disease and Control suggests children should exercise on a regular basis (5 days a week for 60 minutes each day) during their leisure time. Your child will be asked to take up this challenge and participate in a three-week fitness program. If you permit your child to join this research project, your child will be asked to do a couple of things:

1 Take part in a pretest.
This pretest has five questions relating to how much time your child spends being physically active and the amount of time he or she watches TV.

2 Take part in a brief meeting at school.
This meeting will take place during the activity period. Your child will be instructed on how to do the Active Lifestyle Fitness Program at this meeting. Students unable to attend this meeting will not be allowed to proceed with the project.

3 Complete a Three-week fitness program
Your child is challenged to be physically active 5 – 7 days per week for 60 minutes during their leisure time *(physical education class does not count).*

or

Girls can walk 11,000 steps 5 – 7 days per week using a pedometer.
Boys can walk 13,000 steps 5 – 7 days per week using a pedometer
(You must supply the pedometer; the study does not issue pedometers out.)

*In addition to being active your child will be asked to fill out a log of the amount of time he or she spent being active. At the end of each week, you the parent/guardian need to sign the journal signifying your child has completed the requirements for the week.

4 . Finally, take a posttest.

This posttest will be the same as the pretest. It will be mailed to you and your child will complete it at home.

IT'S YOUR CHOICE:

This study is voluntary. You don't have to allow your child to join this project if you don't want to. You child will not get into trouble with your child's physical education teacher or the administration within Central Mountain Middle School if you say no and your child's nine weeks grade will not be affected. If you decide now that you want your child to join the project, you can still change your mind later just by telling me. You only have to answer the questions you feel comfortable answering on the pretest/posttest. It is possible that being in this project will have some potential health risks, but this project might help others by improving muscular strength, controlling weight, relieve anxiety and stress, improve one's self-esteem, and aid in the development of your child becoming a lifelong pursuer of being physically active.

PRIVACY:

Everything your child reveals during this project will be kept private. Confidentiality is important. This means that no one else, other than the researcher, will know how your child answered the questions on the pretest/posttest. However, the physical education teachers will be made aware of the names of students taking part in the study so they can assist me in conducting the meeting at school during activity period. The only time I have to tell someone is if I learn about something that could hurt your child or someone else.

ASKING QUESTIONS:

You can ask me any questions you want. You can contact me at 570-748-9247 from the hours of 4:00 p.m. to 7:00 p.m. daily. If you would like to ask Walden University, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

***THERE ARE TWO PARENTAL/GUARDIAN CONSENT FORMS. RETURN ONE AND KEEP ONE FOR YOUR RECORDS.**

Please sign your name below if you are willing to have your child participate in this educational research project.

Name of Child (print) Date:

Parent/Guardian Signature

Researcher Signature

APPENDIX E

Student Consent Form A

Hello, my name is Jeff Brinker and I am doing a project to learn how effective academic incentives are on motivating seventh-grade middle school students, to become physically active during their leisure time. I am inviting you to join my project. I picked you for this project because I am studying seventh-graders within Central Mountain Middle School. At this time, I would like to take the time to inform you about the study that will take place during the nine weeks of this marking period.

WHO I AM:

I am a student at Walden University. I am working on my doctoral degree. I currently teach health and physical education at Central Mountain High School. Over the past 8 years I had the opportunity to teach health and physical education at Central Mountain Middle School and presently I am the Head Jr. High Girls Soccer coach at Central Mountain.

ABOUT THE PROJECT:

The Centers for Disease and Control suggests children should exercise on a regular basis (5 days a week for 60 minutes each day) during their leisure time. You will be asked to take up this challenge and participate in a three-week fitness program. This project uses an academic reward to motivate you to start and complete a three-week fitness program. The academic incentive is four bonus points added on to your nine-week grade. To get the bonus points, you will have to complete the challenge of being physically active 5 -7 days a week, for 60 minutes a day, for three weeks. However, if you choose to take the challenge and drop out you will not receive the four bonus points onto your nine weeks grade. Your grade will not be affected if you choose not to participate in the study. If you choose to join this research project, you will be asked to do a couple of things:

Take part in a pretest.

This pretest has five questions relating to how much time you spend being physically active and the amount of time you watches TV.

Take part in a brief meeting at school.

This meeting will take place during the activity period.
You will be instructed on how to do the Active Lifestyle Fitness Program at this meeting.
Students unable to attend this meeting will not be allowed to proceed with the project.

Complete a Three-week fitness program

You will be challenged to be physically active 5 – 7 days per week for 60 minutes during their leisure time *(physical education class does not count).*

or

Girls can walk 11,000 steps 5 – 7 days per week using a pedometer.
Boys can walk 13,000 steps 5 – 7 days per week using a pedometer
(You must supply the pedometer; the study does not issue pedometers out.)

* You will be asked to fill out a log to record the amount of time you spent being active each day of the week. At the end of each week, you will ask you parents/guardian to sign the journal signifying that you completed the requirements for the week.

4 . Finally, take a posttest.
This posttest will be the same as the pretest. It will be mailed to you and you will complete it at home.

IT'S YOUR CHOICE:
This study is voluntary. You don't have join this project if you don't want to. You will not get into trouble with your physical education teacher or the administration within Central Mountain Middle School if you say no and your nine weeks grade will not be affected. If you decide now that you want to join the project, you can still change your mind later just by telling me. You only have to answer the questions you feel comfortable answering on the pretest/posttest. As with any physical activity, there is some possibility for injuries to occur. It is possible that being in this project will have some potential health risks, but this project might help you by improving your muscular strength, controlling weight, help relieve anxiety and stress, improve your self-esteem, and aid in the development of you becoming a lifelong pursuer of being physically active.

PRIVACY:
Everything you tell me during this project will be kept private. Confidentiality is important. This means that no one else, other than the researcher, will know how you answered the questions on the pretest/posttest. However, the physical education teachers will be made aware of the names of students taking part in the study so they can reward you accordingly at the end of the nine weeks. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

ASKING QUESTIONS:
You can ask me any questions you want. You can contact me at 570-748-9247 from the hours of 4:00 p.m. to 7:00 p.m. daily. If you would like to ask Walden University, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

THERE ARE TWO STUDENT CONSENT FORMS.
RETURN ONE AND KEEP ONE FOR YOUR RECORDS

Please sign your name below if you are willing to participate in this educational research project.

Name of Child (print) Date:

Child's Signature

Researcher Signature

APPENDIX F

Student Consent Form B

Hello, my name is Jeff Brinker and I am doing a project to learn how effective academic incentives are on motivating seventh-grade middle school students, to become physically active during their leisure time. I am inviting you to join my project. I picked you for this project because I am studying seventh-graders within Central Mountain Middle School. At this time, I would like to take the time to inform you about the study that will take place during the nine weeks of this marking period.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I currently teach health and physical education at Central Mountain High School. Over the past 8 years I had the opportunity to teach health and physical education at Central Mountain Middle School and presently I am the Head Jr. High Girls Soccer coach at Central Mountain.

ABOUT THE PROJECT:
The Centers for Disease and Control suggests children should exercise on a regular basis (5 days a week for 60 minutes each day) during their leisure time. You will be asked to take up this challenge and participate in a three-week fitness program. If you join decide to take up the challenge, you will be asked to do these things.

Take part in a pretest.

This pretest has five questions relating to how much time you spend being physically active and the amount of time you watches TV.

Take part in a brief meeting at school.

This meeting will take place during the activity period.
You will be instructed on how to do the Active Lifestyle Fitness Program at this meeting.
Students unable to attend this meeting will not be allowed to proceed with the project.

Complete a Three-week fitness program

You will be challenged to be physically active 5 – 7 days per week for 60 minutes during their leisure time *(physical education class does not count).*

or

Girls can walk 11,000 steps 5 – 7 days per week using a pedometer.
Boys can walk 13,000 steps 5 – 7 days per week using a pedometer
(You must supply the pedometer; the study does not issue pedometers out.)

*You will be asked to fill out a log to record the amount of time you spent being active each day of the week. At the end of each week, you will ask you parents/guardian to sign the journal signifying that you completed the requirements for the week.

4 . Finally, take a posttest.
This posttest will be the same as the pretest. It will be mailed to you and you will complete it at home.

IT'S YOUR CHOICE:
This study is voluntary. You don't have join this project if you don't want to. You will not get into trouble with your physical education teacher or the administration within Central Mountain Middle School if you say no and your nine weeks grade will not be affected. If you decide now that you want to join the project, you can still change your mind later just by telling me. You only have to answer the questions you feel comfortable answering on the pretest/posttest. As with any physical activity, there is some possibility for injuries to occur. It is possible that being in this project will have some potential health risks, but this project might help you by improving your muscular strength, controlling weight, help relieve anxiety and stress, improve your self-esteem, and aid in the development of you becoming a lifelong pursuer of being physically active.

PRIVACY:
Everything you tell me during this project will be kept private. Confidentiality is important. This means that no one else, other than the researcher, will know how you answered the questions on the pretest/posttest. However, the physical education teachers will be made aware of the names of students taking part in the study so they can assist me in conducting the meeting at school during activity period The only time I have to tell someone is if I learn about something that could hurt you or someone else.

ASKING QUESTIONS:
You can ask me any questions you want. You can contact me at 570-748-9247 from the hours of 4:00 p.m. to 7:00 p.m. daily. If you would like to ask Walden University, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

THERE ARE TWO STUDENT CONSENT FORMS.
RETURN ONE AND KEEP ONE FOR YOUR RECORDS

Please sign your name below if you are willing to participate in this educational research project.

Name of Child (print) Date:

Child's Signature _____

Researcher Signature _____

APPENDIX G

Volunteer Physical Education Assent Form

Keystone Central School District
Central Mountain Middle School
200 BEN Ave
Mill Hall, PA 17751
(570) 726-3141

March 18, 2008

Dear Mr. Brinker,

Based on my review of your research proposal, I give permission for you to conduct the study entitled "THE INFLUENCE OF ACADEMIC INCENTIVES ON MIDDLE SCHOOL PHYSICAL EDUCATION STUDENTS: PROMOTING PHYSICAL ACITIVITY DURING LEISURE TIME" within my physical education classes at the site of Central Mountain Middle School. As part of this study, I understand my role as a volunteering physical educator is to open my classroom up for an initial meeting with you and my students, obtain returned sealed envelopes, and place them in a folder for you. Also assist in the gathering of participants for the informational meeting and reward qualifying participants with four points onto their nine weeks grade for completing the three-week fitness program. I authorize you to invite my seventh-grade regular physical education classes, to participate in the quantitative one-group pretest/posttest design study. Their participation will be voluntary and at their own discretion. We reserve the right to withdraw from the study at any time if our circumstances change. I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Physical Educator
Keystone Central School District
Central Mountain Middle School

APPENDIX H

Participants Name: _____ Pretest/Posttest Survey

Please circle the period you have physical education. 1 2 3 4 5 6 7 8 on Day 1-3-5 or 2-4-6

Write your physical education teachers name: _____

Directions: Please read each question carefully and answer the questions to the best of your ability. You only have to answer the questions you feel comfortable answering.

1 On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities?

A. 0 days
B. 1 day
C. 2 days
D. 3 days
E. 4 days
F. 5 days
G. 6 days
H. 7 days

2. On how many of the past 7 days did you participate in physical activity for at least 30 minutes that did not make you sweat or breathe hard, such as fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors?

A. 0 days
B. 1 day
C. 2 days
D. 3 days
E. 4 days
F. 5 days
G. 6 days
H. 7 days

3. During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spend in any kind of physical activity that increases your heart rate and makes you breathe hard some of the time.)

A. 0 days
B. 1 day
C. 2 days
D. 3 days
E. 4 days
F. 5 days
G. 6 days
H. 7 days

4. On an average school day, how many hours do you watch TV?

   A. I do not watch TV on an average school day?
   B. Less than 1 hour per day
   C. 1 hour per day
   D. 2 hours per day
   E. 3 hours per day
   F. 4 hours per day
   G. 5 or more hours per day

5. During the past 12 months, on how many sports teams did you play? (Include any teams run by your school or community groups.)

   A. 0 teams
   B. 1 team
   C. 2 teams
   D. 3 or more teams

APPENDIX I

Instructions for you to participate in the study.

1. Two consent forms must be signed and returned.
    - The parental/guardian consent form
    - The student consent form
    - Remember to keep one copy of each consent form for your records
2. Pretest must be taken by you "the student" and returned.

How do you return the two consent forms and one pretest?

- Put the three papers in the self-addressed envelope and seal it.
- Return it tomorrow.

    A. Through the Mail

    or

    B. Take it into school and give it to your physical education teacher.

The deadline for the return date is on the back of the envelope that is not self-addressed.

APPENDIX J

Group A Instructions to Conduct the Study

Thank you for being a part of this study.
Here are the Instructions on how to continue and do the Active Lifestyle Program.

Please read the entire sheet carefully.

1. Choose an activity.

You can find examples of physical activities you can participate in at home on the back of this page. Pick some activities that you like to do and begin.

2. Goal for the Program.

- You must be physically active for ***60 MINUTES A DAY FOR 3 WEEKS.***

You can break the time into 5 minute or even 10-minute chunks of time if you want but the total time for each day must be at least 60 minutes.

or

Choose to use a pedometer.

Girls will need to have ***11,000 STEPS FOR THE DAY.***
Boys will need to have ***13,000 STEPS FOR THE DAY.***

You must use your own pedometer; the study does not provide you with one.

- You must be PHYSICALLY active at least ***5 DAYS A WEEK FOR A TOTAL OF 3 WEEKS.***

3. Keep a Log

Your log will help you keep track of how much time you spend being physically active. Look at the ***EXAMPLE WEEK*** on the ***fitness log*** so you have an idea of how to record the time you spent being active and the activity you did.
At the end of each week, you *must have your parent/guardian sign the journal* to show that you completed the 60 minutes for at least 5 days in the week.

You can choose to stop during anytime of the study. However, if you stop you will not receive the 4 bonus points added onto your nine weeks grade.

Parents:
***At the beginning of the 3rd week of the fitness program, there will be a letter sent home. It will provide instructions on what you will have to do to complete the study.**

APPENDIX K

Group B Instructions to Conduct the Study

Thank you for being a part of this study.
Here are the Instructions on how to continue and do the Active Lifestyle Program.

Please read the entire sheet carefully.

1. Choose an activity.

You can find examples of physical activities you can participate in at home on the back of this page. Pick some activities that you like to do and begin.

2. Goal for the Program.

- You must be physically active for ***60 MINUTES A DAY FOR 3 WEEKS.***

You can break the time into 5 minute or even 10-minute chunks of time if you want but the total time for each day must be at least 60 minutes.

or

Choose to use a pedometer.

Girls will need to have ***11,000 STEPS FOR THE DAY.***
Boys will need to have ***13,000 STEPS FOR THE DAY.***

You must use your own pedometer; the study does not provide you with one.

- You must be PHYSICALLY active at least ***5 DAYS A WEEK FOR A TOTAL OF 3 WEEKS.***

3. Keep a Log

Your log will help you keep track of how much time you spend being physically active. Look at the ***EXAMPLE WEEK*** on the ***fitness log*** so you have an idea of how to record the time you spent being active and the activity you did.
At the end of each week, you *must have your parent/guardian sign the journal* to show that you completed the 60 minutes for at least 5 days in the week.

You can choose to stop during anytime of the study.

Parents:
***At the beginning of the 3rd week of the fitness program, there will be a letter sent home. It will provide instructions on what you will have to do to complete the study.**

APPENDIX L

Suggested Activities?
The President's Challenge lets you choose from almost 100 different activities. So you're sure to find at least one you like.

Aerobics
Archery
Badminton
Baseball
Basketball
Baton Twirling
Bicycling
Billiards
Bowling
Boxing/Kickboxing
Calisthenics
Canoeing
Cardio Machines
Cardio Tennis
Cheerleading
Children's Games
Circuit Training
Cricket
Croquet
Cross Country Skiing
Curling
Dancing
Darts
Diving
Downhill Skiing
Fencing
Field Hockey
Figure Skating
Fishing
Foot Bag
Frisbee
Gardening/Lawn Mowing
Golf
Gymnastics
Handball
Hang Gliding
Hiking/Backpacking
Hockey
Home Repair
Horseback Riding
Horseshoe Pitching
Household Tasks
Hunting
Inline Skating
Jai Alai
Juggling
Kayaking
Lacrosse
Lawn Bowling
Lifting/Hauling
Marching
Martial Arts
Motor Cross
Mountain Biking
Mountain Climbing
Orienteering
Paddleball
Pedometer
Pilates
Polo
Racquetball
Rock Climbing
Roller Skating
Rope Jumping
Rowing
Rowing Machine
Rugby
Running
Sailing
Scuba Diving
Shuffleboard
Skateboarding
Skating
Ski Jumping
Skimobiling
Sky Diving
Sledding
Snorkeling
Snowboarding
Snowmobiling
Snowshoeing
Snow Shoveling
Soccer
Softball
Squash
Stationary Bike
Stretching
Surfing
Swimming
Table Tennis
Tai Chi
Tennis
Track & Field
Trampoline
Trap & Skeet
Unicycling
Volleyball
Walking
Wallyball
Water Aerobics
Water Jogging
Water Polo
Water Skiing
Weight Training
Whitewater Rafting
Wind Surfing
Wrestling
Yoga

Rules and Suggested Activities were taken from:
http://www.presidentschallenge.org

APPENDIX M

RESEARCH LOG FOR THE ACTIVE LIFESTYLE PROGRAM

Participant Name _____

Date Started _____

Example	Activities	# of Minutes or pedometer steps	Week 1	Activities	# of Minutes or pedometer steps
Mon.			Mon.		
Tues.			Tues.		
Wed.			Wed.		
Thurs.			Thurs.		
Fri.			Fri.		
Sat.			Sat.		
Sun.			Sun.		
Parent Signature		Date:	Parent Signature		Date:

Week 2	Activities	# of Minutes or pedometer steps	Week 3	Activities	# of Minutes or pedometer steps
Mon.			Mon.		
Tues.			Tues.		
Wed.			Wed.		
Thurs.			Thurs.		
Fri.			Fri.		
Sat.			Sat.		
Sun.			Sun.		
Parent Signature		Date:	Parent Signature		Date:

Participant Signature _____Date:_____

Parents/Guardian Signature_____Date:_____

Note: You will turn this log in at the end of the survey.

APPENDIX N

RESEARCH PROJECT

Jeffrey S. Brinker
Ed. D. Student
Walden University

Dear Parent/Guardian and _____:

I would to take the time to thank you for participating in my educational study over the past two weeks. I hope you have had success and enjoyed being physically active. This is the final week of the study and it will end on Sunday. To complete the study, I will need you to do two things. The first is to complete the posttest that is enclosed within the envelope. Secondly, once you finish the posttest, take the posttest and the orange activity log sheet, and place them into the self-addressed envelope. Place the envelope in the mailbox by Tuesday of the following week. Do not return them to your physical education teacher. I will inform your teacher that you have fulfilled the requirements once I receive your posttest so you can receive the four academic points onto this nine weeks.

Sincerely,

Jeffrey Scott Brinker
Ed. D. Doctoral Student
Walden University

Jeffrey S. Brinker

04-03-08-312438.

317 West Main Street, Lock Haven, PA 17745

(570) 748-9247

brinkers8@yahoo.com

Education

Walden University, Minneapolis, MN
Ed. D. Teacher Leadership — 2005 - 2008

MaryGrove College, Detroit, MI
M.A. Ed. Master in the Art of Teaching — 1999 - 2001

Lock Haven University, Lock Haven, PA
B.S. Ed. Health and Physical Education — 1990-1994
Drivers and Safety Education — 1995

Teaching Experience

Keystone Central School District, Lock Haven, PA

Central Mountain High School — 2007 - Present

* Wellness Educator

Central Mountain Middle School — 1999 - 2007

*Health and Physical Educator

Elementary Health and Physical Educator — 1995 - 1999

Related Professional Experience

"Health Council" within Keystone Central School District 2005 – Present

- Collaborated with local health agencies, food services, nurses, school board members, parents, superintendent, and physical educators.

Association with Lock Haven University 1997 - Present

- Worked in conjunction with Lock Haven University as a Cooperating Teacher supervising student teachers within the health and physical education department at Central Mountain High School, Central Mountain Middle School and at the elementary level.

- Accepted participating students from Lock Haven University during their block semesters at Central Mountain High School, Central Mountain Middle School and at the elementary level.

- Made opportunities for students from Lock Haven University to observe health and physical education classes to assist them achieve hours towards their professional development activities (PDA).

Curriculum Experience

- Writer of the 7th and 9th grade Health curriculum at Keystone Central School District 2008

- Co-writer of the physical education curriculum at Keystone Central School District and assisted in presenting to the School Board. 2000 and 2005