

Movement: the vessel for a positive sense of self.

Submitted in partial fulfillment of the requirements for the degree of Master
in Teaching

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January 2, 2009

This Project for the Master in Teaching Degree

by

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has been approved for

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Abstract

With the No Child Left Behind legislation of 2001 children and schools are under increased pressure to improve tests scores and academic competence. Due to the increased pressure on students and schools many schools are opting to decrease or eliminate physical activity from the daily routine. Yet the Surgeon General and Center for Disease Control have recently issued statements citing rises in inactivity related physical and mental diseases for United States youth. Therefore research was reviewed that investigated the impact of physical and movement activities affects on k-12 students mental well-being, as well as what factors aid in promoting youth physical activity. The majority of the research reviewed found that movement and physical related activities do contribute to positive mood change in students. The research also indicated that multiple factors mediate student's attraction to physical activity and that these mediating factors such as age, gender and circumstance often hinder student engagement in movement related activities. Findings suggested that students who are more physically active have a better self-image, more self-esteem and greater efficacy towards physical activity. In conclusion the majority of the research indicated a correlation between physical activity and enhanced mood states and mental well-being in students. Schools can integrate movement activities into their daily routines to increase students moods and enhance their mental well-being without taking away from core curriculum subjects.

Preface

I would like to thank my supervising faculty George Freeman for his flexibility and relentless encouragement through the creation of this paper. I would also like to thank my partner Zane Brown for putting up with me for the last year and a half and to all of those who have critiqued and supported me, I genuinely thank you for helping me become the student and teacher I am today.

TABLE OF CONTENTS

TITLE PAGE	1
APPROVAL PAGE	2
ABSTRACT	3
PREFACE	4
CHAPTER 1: INTRODUCTION	5
Introduction	5
Rationale	7
Limitations	11
Statement of Purpose	11
Definition of Terms	12
Summary	14
CHAPTER 2: HISTORICAL BACKGROUND.....	15
Introduction.....	15
Ancient Physical Education Practices.....	15
The Beginning of American Physical Education Practices	17
Current Physical Activity in Schools	19
Summary	21
CHAPTER 3: CRITICAL REVIEW OF THE LITERATURE	23
Introduction	23
Physical Activity, Mood and Wellbeing	24
Motivating Factors for Physical Activity: Gender and Self-Efficacy	37
Students Perceptions of Health and Physical Activity	55
Integrating Movement in the Classroom	65

Girls: Barriers to Physical Activity and Intervention.	75
Summary.	85
CHAPTER 4: CONCLUSION.	88
Introduction.	88
Summary of Findings.	91
Classroom Implications.	105
Implications for Further Research.	107
REFERENCES	109

CHAPTER ONE: INTRODUCTION

The U.S. public school system faces constant challenges to meet the increasing academic and social demands placed in its responsibility. Society expects schools today to not only produce highly academic students but also encourage individuals with healthy physical and psychological well-beings that can construct a stable social environment regardless of students economic or social backgrounds (Weissberg and O'Brien, 2004). The responsibility of the well-being of the nation's youth is falling on to the public schools. Social and governmental pressure requires schools to divide their focus on academic achievement and developing the whole student: emotionally, physically, and mentally. One traditional method of addressing student's emotional and physical well-being came through recess and Physical Education. In the past, these two school related activities served to engage students in healthy activity in relation to their physical, social and emotional well-being. Recess and Physical Education permitted children to engage in play and socialization practices to nurture their mood and develop their sense of self. However, in an effort to bolster academic achievement, many schools have decreased or eliminated physical activity as a part of daily school life.

Rational

“As long as there is life, there is movement, and to move is to satisfy a basic and eternal need” (Shawn, 1974).

The current educational milieu has affected the time allocated in schools for movement related activities. The 2001 federally mandated No Child Left Behind Act (NCLB) requires schools to increase their students achievement regardless of socioeconomic, and cultural background, or face harsh penalties from the U.S. government (<http://www.ed.gov/policy>). Thus, schools came under mounting pressure to increase their student's academic performance at any cost (Spring, 2007). Upping academic standards resulted in a decrease in time allotted to non-core curriculum.

However, even before the enactment of NCLB, the majority of students did not participate in daily P.E. courses. As of 2000 only, "8 percent of elementary schools, 6.4 percent of middle/junior high schools, and 5.8 percent of senior high schools provided daily physical education or allocated the recommended amount of time per week (150 minutes for elementary and 225 minutes for junior and senior high schools)"(American Heart Association, 2006). Additionally, the years of 1990-1999 showed that only 65% of U.S. adolescents engaged in regular physical activity; a distinct decrease throughout the last few decades (U.S. Department of Health and Human Services, 2000). Mental health of children has decreased as well. The Center for Disease Control reported that from 2003 to 2004 a sudden 8 per cent rise in suicides occurred in youth under 20 years of age (MMWR, 2007), and the U.S. Surgeon General reported

that one in ten children suffer from poor mental health (U.S. Surgeon General, 2000).

Furthermore, today's society is experiencing the greatest rise in childhood inactivity related illnesses ever recorded. Type two diabetes, obesity, high cholesterol, and blood pressure issues are sky rocketing, as well as rises in depression, anxiety and mood related disorders (U.S. Surgeon General, 2000). Thus, the issue of children's declining health has become a topic of concern for government, communities, schools, and families. With statistics showing that American youth are participating in ever-increasing amounts of unhealthy behavior, an extreme debate ensues about the best use of time in schools and the true goals of American education.

In spite of health related statistics, a majority of schools have decreased time allocated for physical activity. Some theorists believe that the best education requires constant study and academic zeal. Some argue that physical activity related experiences take children away from precious academic subjects leaving students less educated and at a social disadvantage. They argue that U.S. education has slipped behind that of other world leaders because U.S. education lacks cohesive focus, and has too many priorities. In an effort to ensure that students receive the best possible education, some schools in underprivileged areas have resorted to diminishing, and in some cases cutting recess and P.E. altogether.

Yet, others in the educational field believe that children must experience a well-rounded education which encompasses play, pleasure, activity, music, and art, in addition to the core academic curriculum. They argue that through these alternative educational experiences children learn valuable socialization and coping skills; that children come to know their own talents and limitations; children come to know themselves in greater depth, and thus foster great self-respect. People who believe in this form of education also cite the responsibility of education to aid in the development of positive psychological and physiological well-being of children. The argument hinges on the believed connection between mind and body. The goal of education, they argue, ought to focus on developing the whole person: mind and body. They believe that through the balanced, develop of self a person strengthens and nurtures their overall well-being resulting in a well-adjusted individual capable of academic and personal success and well-being.

Under No Child Left Behind schools are required to ensure that students test at average or above average levels in math, writing, reading, and science, but schools are not required to allow students access to Physical Education or recess. Therefore, many schools in an effort to give students the best academic education possible have eliminated or greatly reduced the amount of time spent in physical movement related activities. Simultaneously, children's physical and mental health continues to rapidly decline, leading to lowered states of overall well-being.

Limitations

The limitations of this study include a narrow scope of the available research on physical activities affects on well-being due to the desire to focus the reviewed research on school aged children and college students. All the research analyzed dealt with populations of people four through 21 years of age, and all were students. An enormous amount of research exists on adult populations and psychological correlates of physical activity, but the research on children remains limited. Furthermore, research on physical activities effects on cognitive performance, and motivation to do well academically were not reviewed in an effort to keep the focus on more emotionally centered outcomes of physical activity affects. Also, the majority of the research reviewed did not assess children with physical or learning disabilities.

Statement of Purpose

To understand this question of how physical activity affects children's psychological well-being, one must assess the current literature on the topic. Consequently, the purpose of this paper is to analyze the current literature, examining the relationship between physical activity and psychological well-being, as well as assess the mediating factors between

children's decisions to participate in physical activity particularly in relation to gender and self-efficacy.

Definition of Terms

The proceeding section defines terms in relation to this paper. Personal well-being is defined as a person's overall mental state. How they generally feel based on their quality of life. Personal well-being is not tangible; however, it consists of two parts. Part one, deals with the physical aspects of life, including health, diet, and physical needs being met. Part two, is the psychological aspect and deals with factors like stress, worry, pleasure, discontent and other emotional states. The primary focus of this paper deals with the psychological correlates of personal well-being in relation to physical activity.

Moreover, global self-esteem is defined as a person's over-all self-concept, his or her own personal view of himself or herself. Self-esteem is the overall feeling one has about themselves. Self worth and self-esteem are defined in the same manner for the purpose of this paper.

Self-efficacy is defined as a person's sense of ability to be successful at a given challenge. Self-efficacy is the person's individual belief of their capability in performing and or achieving their desired outcome. Furthermore, self-efficacy is the individual's belief, accurate or not, of whether they can effectively produce or change, the desired effect in a situation. People's self-efficacy can change with different challenges.

For example, a person may feel very confident at passing a physics exam, but incapable of running a twelve minute mile. Therefore, their self-efficacy towards physics is presumably high, whereas their self-efficacy towards running at a moderate pace is presumably low.

For the purpose of this paper movement will be used in terms of physical movement. Movement, dance, and physical activity are defined as ways to move the body, integrating body motions, mind, and spirit. Movement, dance and physical activity are not restricted to competitive sports, and/or exercise, and do not refer to a structured movement in a graded, monotonous or competitive way. However, exercise and sports will be included in the definition of movement and physical activity. Movement curriculum refers to the development and implementation of curriculum that teaches how to use the body as a means of expression, such as through dance and drama. The integration of movement refers to teaching core subjects through the use of movement. For instance, teaching poem rhythm through dance, or a song through hand movements, or verbs through physical action.

Exercise is defined as an intentional use of physical movement to raise the heart rate for health purposes. Exercise will be used to refer to health related activities. Sports fall under exercise, but sports are group based social activities, which incorporate exercise. The central focus for sports is usually about the individuals enhancing their exercise abilities to benefit the teams' game, instead of individual physical gain.

Summary

Schools are under enormous pressure from government and communities to meet the needs of individual well-being, as well as produce academically excellent students. Yet, according to many findings from the Center for Disease Control, Surgeon General and Health and Human Services children's physical and mental well-being continues to decline. Schools appear to be falling short not only academically, but also at fostering emotional and physical well-being in students. With such emphasis on producing high test scores schools are forced to choose between providing students with enriching physical opportunities in which to learn about their health and well-being and relentless academic rigor to meet high test scores and learning goals.

Therefore, debate exists among educational theorists about the best way to educate the American child. Some wish to see academic excellence be the overarching priority, and believe that academic excellence requires rigorous study time and minimal time allocated to other curricular endeavors. Others maintain that academic excellence is an important aspect of education, but that students must experience a well-rounded education complete with ample time to engage in physical activity for the benefit of their mind and body. This paper reviews the research on physical activities affects on psychological well-being of students.

CHAPTER TWO: HISTORICAL BACKGROUND

Introduction

This chapter examines the historical development of American Physical Education, and movement related activities in public school. It also addresses the development of perceived purposes of Physical Education through its evolution, and the debate that currently exists about how best to serve student needs in relation to academic achievement and overall well-being.

Ancient Physical Education Practices

Physical activity is a necessary part of survival. Humans have been relying on their physical abilities to evolve and move from primitive beings to cultured societies. Physicality like mentality has been a valued and prized aspect of various cultures education for centuries. Physical education currently exists as an integral part of curriculum in most cultures. For many cultures such as the ancient Greek and Chinese, physical education was a means of keeping young men in optimal physical shape for militaristic purposes. In China, games were invented for young men to become familiar with in order to avert their attention from hardships in times of war (Van Dalen, 1953). Additionally, the Chinese believed that disease was the effect of an inactive body. Therefore a series of gentle

movements known as Cong Fu were created to maintain the body's natural level of functioning, which was believed to prolong life through a harmonized system (Van Dalen, 1953).

The ancient Greeks valued a well balanced mind and body. The early Greek ideal was the "man of action" (Van Dalen, 1953), a strong and agile individual ready and willing to fight for his country at any moment. Children acquired their understanding and love for physical fitness through play and imitating adults. Greek children were raised in a culture where both brains and brawn were prized. The ideal Greek man evolved from the Homeric age "man of action" to the Athenian age where the emphasis shifted to blend the "man of action" with "man of wisdom." During the time around 776 B.C. the Greeks valued balance and harmony with mind, body, and spirit. As stated in Van Dalen (1953), "Although, the Athenians agreed that a youth must be able to assume his military duties with courage and confidence, they also wanted him to develop the virtue and capacities needed to nurture the peaceful progress of the nation". An educational system that created a well-balanced individual was the goal. The belief that a healthy, ideal person was one of sound mind and body persisted in ancient Greece. In contrast to the Chinese, the Greeks were not concerned with preventing disease; rather they aimed at beautifying and perfecting the human physique. Physical education was an integral part of Greek education and thus life. Physicality was not separate from

other learning's; instead it was integrated into all aspects of life and learning.

The Beginning of American Physical Education

Physical education in the United States (U.S.) was incorporated in drastically different ways than in ancient Greece. Whereas in Greece, education was focused on the development of the whole individual; mind, body and spirit, American public school from the beginning was primarily focused on the intellectual development of the mind. The morality of the spirit was nurtured through home and church life, and the body was believed to function on its own without attention, yet early American life was physically strenuous due to the environment, and thus the physic was constantly worked (Van Dalen 1953). Therefore when physical education became part of the school system the focus centered on building strong muscles and endurance, rather than grace and beauty or balancing mind, body and spirit.

American founders Benjamin Franklin and Thomas Jefferson believed strongly in the benefits of standardized physical education. They understood physical activity as fundamental to a well-rounded citizen and active person of the state. However, three major cultural ideals existed to obscure American demand for physical education; "the overly ardent advocates of manual labor as sufficient for exercise needs, those still strongly influenced by the puritan idea that play in any form is sin, and the

many scholars who felt that, although play might not be a sin, it is most certainly a waste of time” (Lee, 1983). In 1866 California passed the first state law requiring physical education as compulsory in public schools. This signified the first state legislation of physical education. By 1930 a majority of the states passed laws that required physical education as a mandatory subject. However, the U.S. federal government never mandated physical education or movement related activities as a necessary part of U.S. education.

The state legislated compulsory physical education coincided with the new progressive movement in education headed by John Dewey. Dewey advocated for experience based education. He argued that students learn best through experience rather than rote memorization. He believed children must learn and develop naturally, both physically and mentally. And that teachers needed to facilitate learning and step away from the task master role. The new philosophy in education effected physical education to some degree; sports, dance and gymnastics all became part of the curriculum by the late 1930's (Lee, 1983). However, the overbearing coach figure dominated the physical education scene of the 1930's and beyond. Meanwhile, the curriculum lacked the student exploration element that Dewey had advocated.

Of course during the late 1960's and up through the 1980's, a resurgence of Dewey's experience based philosophy became embodied in U.S. education including physical education. Influenced by England's

incorporation of movement methods, American education adopted practices known as Movement Education. This style of physical activity developed by Rudolph Laban, uses a system for analyzing movement based upon certain movement factors, which he labeled time, weight, space, and flow (Fowler, 1981). Laban's original movements incorporated dance and free flow movement with the goal of developing body awareness. He believed that "the individual's use of effort qualities and gesture reflected aspects of personality and inner attitudes" (Fowler, 1981). Movement education sought to develop the child's physical and emotional being simultaneously to foster a deeper sense of self. Before the late 1960's, physical activity in school had been limited to P.E. and recess, but during the 1970's and 1980's physical activity became incorporated into daily activities because of the believed benefits for children's well-beings. During this time, educational goals focused on the student as a whole, incorporating their mind, body, and spirit. The integration of movement activity in daily curriculum, as well as during P.E. engaged students in self-discovery, physical activity and academic success (Gilbert 1977).

Current Physical Activity in Schools

Movement education experienced continued popularity in elementary schools through the 1980's, however educational cutbacks and economic shortages began decreasing time spent in physical education and physical activity related endeavors. As physical education

changed during the 1990's schools shifted away from dance and movement education related activities, and instead shifted towards traditional competitive sports, lifetime sports (swimming, golf and bowling), games and the conventional fitness markers such as running the mile and pull-ups. However, Physical Education goals of the 1990's through current day continued to encompass the ideal balance between mind and body. Standard six of the National Standards for Physical Education states "A physically educated person values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction" (<http://www.aahperd.org>) .

In the midst of the 2001 legislation of the No Child Left Behind Act, schools began scrambling to improve academic achievement. The federally mandated education reform policy of NCLB advocates high-test scores in math, reading, writing, and science for all students regardless of economic or social background. States mandate Physical and health related education, and many states let districts decide a policy suitable for their community. Under pressure to increase academic benchmarks, districts began reducing and in some cases eliminating all opportunities for children to engage in physical activity. In 2005, congress reviewed The Physical Education in Schools -bill 1276- that would have included P.E. as part of No Child Left Behind, making physical education a federal priority of schools. However, the bill stalled for three consecutive sessions. With enormous pressure to increase academic performance, and no support

from the federal government to increase physical and movement related activities, school officials view the elimination of physical activity as one of the solutions for meeting federal and state academic standards.

Summary

While schools officials see the elimination of physical activity as one solution to the increased pressure of heightened academic achievement, health officials warn that decreasing time spent in movement activities results in decreased physical and mental health (Center for Disease Control, 2000, U.S. Surgeon General, 2000, American Heart Association, 2006). Currently a debate ensues about the goals of public education, and how physical activity fits into those goals. Some theorists advocate for the development of the whole student including emotional, physical, and intellectual. They argue that student's mental and physical well-being is as important as their test score in math, reading, and writing. And that physical activity plays a major role in the health and well-being of students. Others argue that public education must work towards excellent academic achievement by all, and that by spending precious time in physical activity rather than study, students don't reach their academic potential (Kean, 1990). How best to serve students needs has yet to be determined.

This paper reviews some of the available research on physical activities affects on psychological well-being of students.

CHAPTER THREE: CRITICAL REVIEW OF THE LITERATURE

Introduction

Chapter one asked the question: how physical activity affects students psychological well-being and examined the current debate in education reform about the importance of allocated time for physical activity in an age of heightened academic standards. Chapter two focused on the historical background of Physical Education and movement education and the beginnings of both in the United States, with some ancient ties to world history. Chapter three reviews the available research to examine the affects of physical activities relation to mood, well-being, self-esteem and differences in students perceptions based on gender and issues related to self-efficacy. Chapter three is divided into subheadings on the topic of the articles summarized: physical activity: Mood and wellbeing; Motivating factors for physical activity: Gender and self-efficacy; Students perceptions of health and physical activity; Integrating movement and physical activity in classroom curriculum; and Girls: barriers to physical activity and interventions.

Physical activity: Mood and Well-being

This first section pertains to research conducted on how different forms of physical activity impacted children's moods and sense of well-being. Well-being was defined as the general life concept a person holds in relation to their self. Well-being encompassed mood, self-esteem, self-efficacy, self-concept and motivation. The studies used a multitude of ages, methods, procedures, and demographics in order to gather data. The research on physical activities affect on mental well-being strongly suggested a positive correlation between frequent bouts of exercise and a positive sense of well-being.

Annesi, et.al. (2007) studied the effects of a 12-week physical activity and health behavior change intervention; Youth Fit For Life, on African American students in 10 after-school YMCA programs and eight P.E. classes in charter schools. Ages ranged from nine to 12 years old (M age =10.1 yr., SD =1.0). The study consisted of two parts. Part one dealt with the physical effects of the program, and part two dealt with the physiological effects of the intervention. For the purpose of this paper, the findings of part two provide relevance. A total of 46 boys, and 57 girls participated from the after-school program, and 21 boys and 27 girls participated from the P.E. classes (N = 151). No significant differences reveled themselves between the two groups. Numerous self-report

assessments were administered at the start and end of the 12-week protocol.

The assessments included The Tension and Vigor Scales of the Profile of Mood States, The Self-Description Questionnaire, The Physical Self-Concept scale of the Tennessee Self-Concept Scale, The Exercise Barriers Self-Efficacy Scale for Children, and the Voluntary Physical Activity single item form. These assessments recorded children's perceptions of their moods, physical appearance and general self, physical self-concept, self-efficacy as a barrier to exercise, and voluntary physical activity respectively.

The after-school program happened three days a week for 45 minute increments. Students participated in a mastery learning environment complete with cardiovascular non-competitive games, strength training, and training in behavior management and adopting self-regulatory skills ("e.g., goal setting, self-monitoring, self-talk/cognitive restructuring, recruiting social support"), general health and nutrition were addressed as well. The P.E. program functioned the same but met only twice a week. Sessions of both the P.E. and after-school program were randomly monitored by a researcher to ensure consistency.

The results found profound increases in all students overall well-being and voluntary physical activity at the completion of the intervention. For the after school program tension decreased ($t = -5.86, p < .001$) and vigor increased ($t = 3.72, p < .001$), all four self appraisal domains: physical

appearance, physical self-concept, exercise self-efficacy and general self increased, $p=.007$, $p=.031$, $p=.003$, $p=.006$ respectively, as well as voluntary physical activity ($p<.001$). For the P.E. group significant correlations existed as a result of intervention as well: tension $p=.066$, vigor $p=.018$, physical appearance $p<.001$, physical self-concept $p<.001$, exercise self-efficacy $p=.003$, general self $p<.001$, and voluntary physical activity $p=.005$. As noted the P.E. classes made greater gains in regards to physical appearance, physical self-concept, and general self. The mastery environment and the inclusion of self and behavior management education appeared to contribute to the high gains in positive well-being. The greater gains towards positive self-regard on behalf of the P.E. participants could have been due to the instructor's previous training in physical fitness education. Overall the intervention appeared successful at heightening students overall well-being.

The limitations of this study included the small sample size, the lack of a non-intervention control group, and the self-assessment questionnaires, and self-selection participation. Additionally, instructors for the Fit for Life Protocol completed only one- five hour training on how to use the curriculum. The instructors in the after school program had no prior experience teaching physical education, whereas the instructors from the physical education classes all had prior experience as physical educators. The differing experience may have impacted the delivery of the curriculum. Lastly, the study may not be generalizable due to the

specific class and population used. Strengths of the study consist of the familiar environment used, the plethora of assessments used and data gathered and the consistency of both programs.

Rehor, Dunnagan, Stewart and Cooley (2001) evaluated the psychological effects of physical activity on mood for 44 college students after a single session of racquetball (N=13), weight training (N=14) or circuit training (N=17) by use of self-report methods utilizing the Profile of Mood States Scale five minutes before the physical activity and five minutes after the physical activity. Participants were divided into the three groups, administered the Profile of Mood States scale and then adjourned to participate in physical activity. After the exercise participants took the Profile of Mood States scale again.

Unreported T scores confirmed a positive change between mood change and physical activity for all. Weight training yielded a decrease in tension, depression, anger, and confusion. The circuit training group showed slight decreases in depression and confusion and dramatic decreases in anger, but no change in tension. And the racquetball group showed no change in tension, or confusion, but significant decreases in depression. According to this study 45 minutes of physical activity contributed to significant decreases in negative psychological factors, and increases positive psychological factors.

The study failed to report specific ages and genders of the participants as well as provide the actual *T* scores or *the level of*

significance for their statistics. Although graphic representations of data were provided to demonstrate the reported increases and decreases of mood states, the significance of these differences is unknown.

Furthermore, the authors of this study failed to provide information regarding the demographics of the population. That in and of itself could easily influence the reported shifts in mood and other variables.

The prior study measured mood changes in college students following a brief period of physical activity. Williamson, Dewey and Steinberg (2001) used a younger population to examine a similar question as to whether or not children experience mood enhancement after short bursts of physical activity as well as following a brief film and what, if any, qualitative differences might be found. Their sample of children (N = 64, boys = 34, girls = 30), were between nine and ten years old. The researchers did not provide a baseline measure of physical fitness or other useful demographics.

The participants engaged in two 15-minute rounds of physical aerobic activity and watched a short, anti smoking video. The two forms of activity consisted of a fun run (running around the gym for 15 minutes) and a free form session utilizing jump ropes, pogo balls, and volley balls. The 15 minute video was an anti-smoking public service production targeted at this age group. The children, divided into three groups, participated in all three experiences but in a different order to control for practice effect. Additionally, students completed a 16 question self-report mood measure

adapted from the Profile of Mood States following each 15 minute round. The results indicated a strong correlation between positive mood enhancement and physical activity ($p < 0.001$), but the inverse was found with positive mood and video viewing. No significant change in mood was found between the two types of exercises; they both yielded the same mood enhancement correlation ($p < 0.001$). Negative mood decreased with the exercise activities but increased following the video. The video viewing resulted in stable negative baseline mood in all the participants.

Overall it seems that short bouts of physical activity appear to have positive effects on children's moods and short bouts of anti-smoking/health related video viewing resulted in a negative mood. The limitations in this study include the researchers' choice in movie material in terms of having no prior findings of the potential impact of the film on any population of children, the lack of a control group, and an inadequate demographic description. The strengths included using a well-normed assessment for mood and the sequencing of the childrens' activities to avoid the practice effect. In addition their research built on prior research regarding the use of 15-minute intervals for all the activities.

Gaynor, Parfitt & Eston, (2005) sought to discover what relationship existed between a child's habitual physical activity level and their psychological well-being for a population of children from an economically-deprived region. They conceptualized well-being as global self-esteem and the absence of anxiety and depression. Their subjects (N=70) were

children with a mean age of 10.4 years with an even split between boys and girls. They were drawn from three rural primary schools in North Wales.

Using three inventories to assess the children's well-being: the State-Trait Anxiety Inventory for Children, the Childhood Depression Inventory, and the Children and Youths Physical Self-perception profile, children were read the items by their *teachers*. Using the Childhood Depression Inventory the child selected the statement that best described him or her. The Child and Youth Physical Self-perception Profile containing 36 items was modified to only six that pertained specifically to global self-worth and esteem. Physical activity was measured using a pedometer for seven consecutive days. The parents of the children recorded the numbers and reset the pedometer every day.

The results of the study suggested there was a strong correlation between both genders for a rise in self-esteem and a shift of depression and anxiety among the children with higher amounts of habitual physical activity. "Activity was significantly ($p < 0.001$) and negatively related to anxiety ($r = -.48$) and depression ($r = -.60$) and positively related to global self-esteem ($r = .66$)." (p. 1794) Overall, this study made a direct connection between high amounts of physical activity and lower levels of anxiety and depression, accompanied by sound global self-esteem for the youths who were getting 12,000 steps a day or more.

The limitations of this study reveal themselves by directly linking physical activity with the child's state of well-being without accounting for other factors that may or may not be present in the child's life. For instance, the research does not take into account socioeconomic status, parents living in the home, or child's social skills and relationships. The strengths include the use of well-normed assessments for depression and anxiety.

Welk and Schaben's 2004 study wanted to determine the relationships among psychosocial correlates and physical activity levels in children who were given "equal and optimal" (p. 63) access to activity occurred during an eight-week long summer fitness camp at a Midwestern university. The population (N =17) was children aged 10-12 years old. The camp was structured the same every day. In order to measure the participants' perceived confidence in physical activities the Harter Perceived Athletic Competence Scale was administered to each participant twice during the first two weeks of camp. To measure attraction to physical activity the subjects were given the CAPA scale consisting of five scales: liking of games, liking of exercise, liking of physical exertion, peer acceptance, and importance of exercise. The third instrument, The Children and Youth Physical Self-Perception Profile (CY-PSPP) measured perceptions of physical conditioning, sport competence, body attractiveness, and strength. Additionally, the CY-PSPP assesses complete physical self worth and an ancillary scale to assess self-esteem.

All instruments were administered to the participants during the first two weeks and during two sessions of the camp.

To measure physical activity the study administrators used an accelerometry-based physical activity monitor known as the BioTrainer activity monitor which detected acceleration in both the vertical and frontal planes of the child's movement patterns. Children wore the monitors for 90 minutes each day for three consecutive weeks during the 8 week summer camp during various forms of tag, capture the flag, kickball and baseball. The amount of physical activity ranged throughout the three weeks, but the children always participated in at least six to seven (30-40 min. each) intervals of activity each week.

Welk and Shaben used the Pearson Product-moment correlation and a three-way (Day x week x interval) ANOVA to identify possible correlations between "volitional activity" and psychosocial measures and to conduct and check for systematic differences in activity levels across the camp activities, respectively. The findings suggested that activity patterns were consistent throughout the three weeks of camp with the pair-wise correlations being significant ($r=.72$, $p<.001$). However, correlations among the psychosocial correlates were less consistent. The relationship of attraction to an activity and physical self-perception, physical self-worth, and athletic competence derived a correlation of $r=.69$ ($p<.05$), $r=.67$ ($p<.05$), and $r=.57$ ($p<.05$), respectively. The results

indicated a connection between Perceived Athletic Competence as being a crucial aspect of “children’s physical activity behavior” (p. 75).

The study found that no matter the choice of activities, children self-regulated their levels of engagement resulting in a consistency of participation throughout the three weeks of the study. This suggests that some children naturally participate in higher levels of physical activity, and enjoy it more than others, and some intentionally limit their participation in physical activity for reasons that were not studied. However, the study revealed that there could be a link between a child’s perceived athletic competence in the physical domain and their physical activity behavior, with an ($r = .72$ $p < .05$). In general, the more competent a child feels in their physicality, the better the chance the child will participate in physical activity.

The limitations of the study include the small population size ($N=18$), the lack of reported gender for the study, how the statistics varied, if at all for gender, and the lack of information reported regarding socioeconomic, racial and personal background of participants. Furthermore, all participants were enrolled in a sports fitness camp, so the population of participants may have had strong inclinations towards physical activity, or have been coerced by parents to be more active, thus negating generalize-ability to a general population of children.

Poulsen, Ziviani, and Cuskelly (2006), examined the “mediating mechanisms influencing the relationship between physical coordination

ability and the outcome variables of life satisfaction and general self-concept. The mediating variables examined were dispositional goal orientations, domain specific self-concept variables and leisure-time participation. It was predicted that partial mediating effects would be found. [I]t was proposed that explanatory links between child-, activity-, and environment- level variables would be more fully understood” (p. 843). At the heart of the study were the questions, “do boys with self-perceived adequate coordination pursue physical activity, and thus maintain a positive well-being and self concept, more than boys who feel inferior in their coordination ability? How does coordination affect male self-concept and life satisfaction? “

The participants were 173 boys whose ages ranged from 10-13 years-of-age. All boys attended all boys primary schools in the Brisbane Metropolitan area of Australia. Sixty of the boys had Developmental Coordination Difficulties (DCD), and 113 boys had no such diagnoses. The participants were group-matched by school year level, chronological age, and socioeconomic status.

The boys were placed in four groups, two DCD groups (severe and moderate) and two non-DCD groups (medium and high non-DCD) based on Movement Assessment Battery for Children (M ABC) percentile scores. The MABC is the most frequently used movement test to screen for children with DCD participating in research. It consists of three tests of

manual dexterity, two tests of ball skills and three tests of static and dynamic balance.

This particular study found high correlations between a boy's physical coordination and their general self-concept ($p < .001$). Boys with DCD both moderate and severe reported less life satisfaction, lower self-concept, and a stronger tendency to rely on electronic sources of media rather than physical activity for their leisure participation. The boys with DCD were less likely to participate in both organized sports and unsupervised social leisure activities. The DCD boys felt social exclusion, and the research linked this with their lack of confidence in their physical domain, and with living in a society that places great social value on sports and physical fitness.

Causgrove-Dunn, Dunn, and Bayduza (2007) questioned how a child's perceived athletic competence effected their sociometric status, and loneliness. Both sets of research examined the relationship between children's physical selves, and their psycho-social correlates. Causgrove-Dunn, Dunn and Bayduza assessed the role in which sociometric status and perceived athletic competence, both personal and by peers, affected 99 boys and 109 girls in grades four through sixth, amounts of loneliness. The boys were of a mean age of 10.08 years and the girls mean age was 10.05 years old. The children came from elementary schools in a western Canadian city. Participants were given one self-report instrument on loneliness, and one on perceived athletic ability. Additionally, the children

had to rate their classmate's athletic ability and identify which classmates they most liked and least liked. The information was used to assess the sociometric status of the classmates.

The loneliness instrument used was the Illinois Loneliness and Social Dissatisfaction Scale, which consists of 24 statements of a personal nature, given a five point scale, children rate the statement from 1 = *always true about me* to 5 = *Not at all true about me*. Athletic ability was measured through a single item indicator where each child rated each child rated their classmates. Sociometric status was rated by each child choosing their three favorite and three least favorite classmates. Instruments were given to each child individually and in private with a researcher present.

The findings revealed significant differences on three of the four dependent variables in relation to gender. The four variables were loneliness, self-rating of athletic ability, athletic ability as rated by peers, and sociometric status. Due to the high gender differences all data was separated between girls and boys after the initial results revealed that boys gave themselves higher self-ratings of athletic ability, boys received higher ratings of athletic ability from their classmates, and boys received lower sociometric status ratings from classmates. However, the difference in loneliness experienced by the two genders was not significant. As for correlational findings, the research presented that girls and boys who received higher ratings of sociometric status, and athletic ability (both by

self and peers) experienced less loneliness. The correlation between loneliness and both sociometric status and perceived athletic ability by peers was ($p < .005$, $R = .36$).

The research makes a strong case for the way children in western cultures with strong values on athleticism, perceive themselves and others. Athletically inclined children and children with access to regular physical activity appeared to hold an advantageous position within their class standing. Additionally, these active children tended to struggle less with feelings of loneliness and isolation. This study revealed the social value of physicality.

The multitude of limitations in this research rest on the fact that it was a self-report study conducted on fourth through sixth graders. Reliability issues arise with young children using self-report protocols. Additionally, the use of a single item indicator for assessing children's perceived athletic ability also raises concerns for reliability and validity issues. Researchers could have strengthened their reliability by interviewing teachers for additional information about sociometric status, and student's athletic tendencies.

While the two previous studies found correlations between a child's perceived physical domain, their self-concept and their positive or negative mental state, this study done by Walters and Martin (2000), argued that aerobic activity does not significantly alter a child's self-esteem or help diminish behavioral problems. The research was done on

157 youth in grades third through fifth. There were two groups, one control group consisting of 80 children who participated in a 13 week minimal aerobic activity program, and an experimental group of 67 children who underwent an intense aerobic exercise 13 week program called “It’s ‘Funner’ to be a Runner” (FTBR). The groups were drawn from different schools, but they were deemed to be fairly similar in their racial diversity and socioeconomic makeup. Both schools were racially diverse and located in San Diego. The researchers worked with the school district to design as homogenous control and experiment groups as possible. The two schools used standardized district curriculum for their physical education programs, and those programs are what the research studied.

Parents of participating children filled out the 13 item Behavioral Rating Index for Children (five point likert scale) which measured the degree of children’s problem behaviors. The children completed the 36 item Self-Perception Profile for Children, which measured six different domains of the child’s self-perception: athletic and scholastic competence, social acceptance, physical appearance, behavioral conduct, and global self-worth. Children chose the statement that is most like them. All measurements were taken at the beginning and the end of the program.

The children participated in their schools P.E. program. The experiment group received a daily 30-40 minute aerobic routine, five days a week consisting mostly of jogging, jump-rope, and aerobic dance. The control group received a 20-30 minute daily program of a variety of

strength building and motor skill based activities such as push-ups, pull-ups, weight lifting, kicking and throwing activities. The experimental group participated in a total of 185 minutes of physical activity as compared to 116.7 minutes that the control group participated in. Additionally, it was recorded that 26.0% of the experimental group was involved in extracurricular sport activities, and 38.3% of the control group were involved in similar activities.

According to the findings of this study the experimental group had no significant change in global self-worth, athletic competence, scholastic competence, behavioral conduct, social acceptance, physical appearance, or problem behaviors. However, the participants in the control group experienced a slight improvement in global self-worth ($p < 0.013$). The authors site that one potential reason for the lack of improvement among the children's self-esteem was the reported abnormally high pre and post test scores for the children's six domains of self-concept. There was not much room for growth in these children's self-esteem. Thus these authors findings support their belief that aerobic exercise does not enhance children's self-esteem if they already obtain normal levels of self-esteem.

The fact that the groups were not truly randomized, both groups participated in some form of exercise, and the fact that the children participating had abnormally high self-esteem to begin with, presents limitations to the study's findings. Further research needs to be done on a truly randomized sample, with a varying degree of self-esteem levels.

Another research team studied the difference in increase/decrease of children's self-esteem as influenced not by aerobic versus non-aerobic activity, but as influenced by a creative teaching method versus the traditional teaching method. Theodorakou, and Zervas (2003) were interested to find if a connection between rises in children's self-esteem would occur as a result of teaching movement exercise through the creative method and/or the traditional method. The authors of the study defined the creative method of teaching movement as a student centered endeavor, where the teacher guides and supports the students, but the movements are improvisational, and experimental; the process centers on the child and their learning to problem solve, explore and discover. The traditional teaching method refers to the typical physical education class where the teacher instructs the students on the physical action, demonstrates the action and then has the children mimic the teacher's action. Traditional teaching method's center on the teacher; the teacher leads and the students follow.

The research took place in Athens Greece. The subjects (N=107) were fifth and sixth grade children, aged 11-12 years old. Both males (N=49) and females (N=58) participated in the study. Subjects came from a local Athenian public school, and had no previous experience with the creative method of movement activity but all had been exposed to the traditional P.E. classes in the past. To gauge the students initial self-esteem, Hart's Self-Perception Profile for Children (SPPC) was translated

and adapted for the Greek population and administered both previous to the children's involvement in the classes, and then during the last week of the three month experiment. The SPPC measures with a great degree of accuracy ($r = .91$), a child's self-esteem by assessing six domains of their perceived self. The six domains include: scholastic competence, social acceptance, athletic competence, physical appearance, behavioral conduct, and global self-esteem/self-worth. Each group, both the traditional and the creative, participated in two 45-minute sessions per week for three months. This equated to a total of 24 hours of instruction and exploration.

Overall, both groups heightened their self-esteem in certain domains as a result of the classes, but the creative group had a significant rise in global self-esteem ($p < .001$) because the creative group improved on all six domains of their self-concept, whereas the traditional group did not have a statistically significant increase in global self-esteem because they only improved significantly in one area. The greatest improvement for the traditional group was between physical appearance and global self-worth (from $r = 0.74$ to $r = 0.89$). Another interesting finding is the correlation ($p < 0.001$) between the creative movement groups increase in scholastic competence. The considerable rise in feelings of competency is associated with the creative methods focus on promoting problem solving skills, trial and error and the generation of ideas. The increase in opportunity for children to experience working on these academic skills in

a risk free environment may lead toward a heightened positive regard for one's scholastic competency. Interesting to note is the fact that the creative group started with lower self-esteem scores than the traditional group. It has been shown in other studies that children with average or normal self-esteem levels typically do not heighten their self-esteem as a result of physical activity, but children with lower than average self-esteem can improve through exposure to physical activity.

Motivating factors for physical activity: gender and self-efficacy

Planinsec, and Fosnarić (2005) sought to determine the relationship between level of physical activity and physical self-concept in young children, as well as the differences between the genders in these two areas. The research took place in Slovenia with children (N =364) in the first grade of a public Slovenia primary school. The mean age of the children was 6.4 years old. 179 boys and 185 girls participated in the study. Teachers and parents completed a questionnaire known as the "Assessment of Physical Activity in Children". Parents and teachers report the duration and level of daily activity of physical movement that the children participated in for one entire week. The scores were taken and then the children were divided into two groups (one high activity, the other low activity) for the research team to continue their tests. Then the "Children's Physical Self-Concept Scale" was administered to the children

in order to determine global self-concept, and the sub-domains of physical performance, physical appearance, and weight control behavior in children.

After analysis, the results determined little significance between genders in the global self-concept scale, and sub-scales of physical performance, physical appearance, and weight control. However, some significance was found between children in the higher activity group and the children in the lower activity group in reference to global physical self-concept, and the subscales of physical performance, and weight control ($p < 0.05$). These findings suggest that the amount of physical activity a child participates directly correlates with their physical self-concept. The more activity, the better a child's physical self-concept is, whereas the lower the activity level, the lower self-concept a child has.

This was not a longitudinal study, but rather a case based study in Slovenia. Additional limitations include that the research was conducted on one age group, from one school. There could be a variety of environmental and social factors that were undetermined by the study's findings. Additional research needs to be conducted on varied age ranges of children, and children from a variety of cultures and socioeconomic backgrounds.

Children's perception of self in relation to physical movement, was studied by Brake and Bornholt (2004), to distinguish if a child's view of competence was discerned from a personal perception or a social

perception; as well as if a child's view of their ability in physical activity is mediated by actual performance. This quantitative study gathered participants (N = 42) from a primary school in Sydney Australia. The participants' ages ranged from 4-12 years old, and were in grades kindergarten through sixth. The children were selected by their teachers due to a wide range of performance at school. "Study 2 examined the children's performance, personal and social self-categorizations in relation to self-concepts about physical movement" (p. 718). Tests were administered to the children by the researchers both inside and outside of classrooms. Results showed that children's views of themselves ranged widely. However, the children showed that they tended to perceive themselves based on social relations. Performance and self-concept in relation to the physical domain remained consistent for both boys and girls regardless of year in school. The other relevant finding for part two of the study, was that children's self-concept and performance abilities did not seem to effect one another ($r = -.20$). Thus children seem to assess themselves based on how others perceive them, as opposed to their actual performance ability. Thus a popular child who has little skill or ability in sports, may not perceive themselves as lacking if their peers never address the student's physical shortcomings, and vice versa, a child who may excel in the physical domain, but is never recognized by peers, may not internalize their success, or perceive their competence. The study suggested a social connection between self-perception.

Another part of the study focused on children's personal perceptions of physical activity with the sense of their individuality and their social basis in relation to their sense of belonging as a mediator. Participants (N = 70) aged five to 12 years old, and were selected by their teachers to demonstrate a wide range in ability of the school work. Again, the students all came from a public primary school in Sydney. After completing the test on "Self-concepts about individuality and belonging" reference test, which consisted of 10 responses to 10 statements (e.g. "At school do you need some time that's just for you?", "At school do you think there are kids similar to you?" (p. 716), and a series of interview questions, and activities that demonstrated the children's self-concepts about physical movement, the research revealed that most children's self-concept of physical movement was positive, but that children's self-concepts about physical movement, sense of individuality, and of belonging varied. However, once again the research concluded that children's self-concepts about physical movement tended to be socially based rather than individually based. The association between self-concept and individuality were not significant. A slightly higher correlation was determined between a child's self-concept, from a social bases, in regards to physical movement. Yet the highest correlating factor found by the study was in regards to a child's sense of belonging at school, and a positive disposition towards physical movement (overall $r=.33$, $p < 0.01$)

for younger children ($r=.42$, $p. < 0.01$), and for older children ($r=.31$, $p < 0.05$).

The findings of this study suggested that children's sense of physical self is mediated by the social realm, rather than the individual realm. These findings link the necessity for positive social influences inside of school where children are constantly subjected to peer appraisal and criticism.

Lee, Fredenburg, Belcher, and Cleveland (1999) sought to understand the meaning of questions in their investigative study on the competence perceptions held by 50 fifth-grade students of differing genders on different physical activities. The researchers wanted to know what role gender played in the student's perception of themselves as more capable in one of the activity over the other, and why they often will not try both activities. Additionally, the research examined the student assessed motivational influences of four different teaching methods. This was a micro study, part of a larger study of ($N = 745$) students of first, third and fifth grade male and females ($M = 376$, $F = 369$) taken from six different region's public schools in the south-eastern part of the U.S. Out of the original 745 students, 50 were chosen because they met the criteria for the study in consideration. These students created four homogeneous groups of 12 children with stereotypical perceptions of sport activities and internalized their beliefs for their own competency (ex. Boys are better at basketball and girls are more suited for dance). These 50 students were

chosen because they indicated an extreme belief in the stereotypical concept of boys performing better at certain sports than girls and vice versa.

The children participated in a standardized open-ended interview process to determine what factors arbitrate student's perceptions of competency and motivation, in addition to how children perceived and assessed teacher motivational practice. Interviewers provided hypothetical situations of motivational beliefs and behaviors of girls and boys. Students were asked about their beliefs of why they thought some activities were more appropriate for boys and others were better for girls.

The questions about gender-based competence were followed by questions of teacher's evaluation processes. Four scenarios were presented where teachers chose to use either individualized mastery, recognition for performance outcomes, rewards for performance outcomes, or rewards for efforts in order to motivate their students. After descriptions of all four processes, the scenarios were presented two at a time, in compared pair format and the children were asked to determine which process would best support the motivation of both girls and boys. For the motivational process choices, students were asked to choose the most effective strategy as compared to every other choice.

The research indicated that social acceptability was a major mediator for why children justified their stereotypical gender beliefs. 53% of males and 45% of females believed that both dance and basketball

were suited better to different genders citing social acceptability as their explanation. Several of the children's statements reflected an intense belief in natural ability as associated with gender. 31% of male responses to justify female competence in dance, and 34% of their responses justified male competence in basketball based off a person's natural ability due to their gender. Similarly, females used natural ability due to gender as a justification for competence and motivational beliefs in dance (39%) and basketball (36%). Effort was not as highly accepted as to why someone would be better or worse at basketball or dance. The girls cited effort as an explanation competence and motivation for dance only 16%, and basketball 19% of the time. Males similarly didn't see effort as much of an indicator of competence and motivational effort, dance (16%), and basketball (14%). The majority of students were deeply concerned with the social acceptability that society placed on gender, and internalized which activity was deemed gender appropriate for different movement activities within the U.S. culture.

As for student's evaluations of teaching practices, the majority of students cited rewards for effort as the practice that would motivate both boys and girls. Reward for effort, was followed by the individualized method. Rewarding outstanding performance by the distribution of tokens to be used in school store, did not receive an abundance of support from the participants in the study. The most harmful of motivational practices in the children's beliefs was the recognition of outstanding performance.

Further research on children's motivating factors, when participating in physical education class, were conducted by Ridgers, Fazez and Fairclough (2007). This research team set out to determine the association among a child's Fear of Negative Evaluation (FNE) and their perceived athletic competence within the context of physical education (P.E.) class. Their specific goal was to determine the correlation between gender and age differences in the dependent variables. Additionally, the research team wished to consider how the above variables could impact on the process of P.E. to students.

The group of students (N = 192, M = 88, F = 104) selected for this study came from five schools (three primary and two secondary) in the rural area of North Wales and the Midlands region of England. The ages of the children were eight to 11 for the primary grades and aged 13-16 for the secondary grades. These age groups were selected due to the findings of other research indicating children experience a drop in perceived self-competence as a result of transitioning between primary and secondary schooling. As in many other studies cited here, this study used the Self-Perception Profile for Children (SPPC) to determine the students perceived competence within the context of P.E. class. The researchers used just five of the questions which dealt directly with children's perceived ability in sports and games. The items were scored on a four point basis with one indicating a low perceived competence and

four indicating a high perceived competence. Fear of negative evaluation (FNE) was assessed through the use of the Brief Fear of Negative Evaluation Scale (BFNE). This FNE indicator determined the severity of apprehension a child endured when presented with the potential of negative evaluation by peer or authority. Children evaluated the degree to which 12 statements are typical of them on a five point Likert scale. The scores range from 1 – being ‘not at all characteristic of me’ to 5 – being ‘extremely characteristic of me’ (p. 342). The children completed these indicators after a single P.E. class. Both the BFNE and the SPPC were given to students during the summer session of the academic year after a two-hour P.E. class where all but one of the teachers was male. The activities which the students participated ranged from competitive team games, to more individual activities where skill acquisition was the aim of the lesson. Three of the preceding lessons before data collection centered on competition for two of the primary classes and one of the secondary, and two on skill development for one primary, one secondary class.

The findings of this particular study revealed significant difference between the way boys and girls experience fear of negative evaluation in P.E. class ($p < 0.01$). Girls routinely reported more FNE than the boys. However there was no significant difference within sex across the two age groups for FNE. The other major finding was the difference in female perceptions of their athletic ability as compared to the males ($p < 0.01$).

Once again, the females tended to feel more inadequate about their physicality than the males, but no within sex differences were found within the age groups. Also, no significant findings were revealed between the two types of activity, skill based or competitive based. The only significant findings in the study were the differences in the genders perceptions of their FNE, and their perceived athletic abilities, with girls being more susceptible to feelings of negativity and inadequacy. Also, the research correlates higher FNE with lower perceptions of athletic competency ($p < 0.05$).

In general it appeared that young females tend to experience greater amounts of anxiety and feelings of inadequacy in P.E. classes when compared to their male counter parts. The limitations of this study include the lack of investigation of the importance of athletic competence and its effect on FNE. Second this study was brief and cross-sectional, longitudinal studies are needed to evaluate how children's fear and perception of their athletic competence changes, and what factors attribute to the development of the strong athletic competence and a lack of FNE.

Chase (2001) explored the question of how the variables of self-efficacy, age, and gender of children influenced their persistence, their present effort, and their future self-efficacy. Chase divided her population (N=288) of boys and girls into two groups: high or low self-efficacy. The participant sample of high self-efficacy children was 169 and 119 children

were sorted into the low-self efficacy group. The groups were then divided by age into three groups: 8-9 year olds (N=67); 10-12 year olds (N=71) and 13-14 year olds (N=150). These participants were drawn Midwest elementary and middle schools in the same districts. The majority of the participants were white (95%) with the remaining participants represent various racial groups. The population of girls consisted of 143 students and the boys consisted 145.

Self-efficacy was measured by asking four questions to rate individual level of ability and self-confidence on a Likert scale from 0-10 with 0 being “not sure” and 10 being “very sure,” in relationship to a specific physical sport or skill where they had perceived high or low self-efficacy. The final question was an attribution question provided after a performance scenario presented as a part of the study. In the performance scenario the children were advised they had failed to perform their skill. Children were then asked to rate how true a set of two, pre-determined attributions were for why they might have failed.

In general, Chase found significant differences across efficacy groups in the choice to participate. Sixty nine percent of the high self-efficacy girls chose to participate in the activity in the future despite imagining themselves having failed based on the scenario. Thirty-one percent of the low efficacy girls would chose to participate in the future ($p < .001$). Likewise 76 percent of high efficacy boys would participate in the future as compared to 24 percent of low-self-efficacy boys ($p < .001$).

These findings were true only for the oldest group of children. No significant difference was found for the two younger groups of children.

Overall, it appeared that self-efficacy was significant for older children in contrast to younger children. There appeared to be no difference in terms of gender across the sample for any age group. The higher the self-efficacy as measured by Chase appeared to result in higher levels of persistence across time when the child is faced with failure. In addition, high self-efficacy in children appeared to result in increased effort and future self-efficacy. In all cases gender was not significant but age played a factor. There are several limitations to these findings based on Chase's assumptions and procedure. The use of a single question to measure a child's sense of self-efficacy is problematic as there are excellent measures of self-efficacy that would provide a broader picture of a child's sense of ability and inability. The single question approach for each of the measures of persistence, future self-efficacy and increased effort are highly vulnerable to social desirability and the demand characteristics of the experimental procedure.

Annesi (2004), like Chase (2001), examined how self-efficacy impacted, and is impacted by physical activity in children nine to 12 years of age, and additionally research how childrens' rated tension and depression changed as a result of 12 weeks of physical activity. The total number of children (N = 64, girls = 28, boys = 26) participated in a 12-week after school program for three days a week for 45 minutes each

session. Ninety three percent of the participants were African American, from low to moderate socio-economic backgrounds. The research took place in the southeastern region of the United States. The children were divided into groups of 12-15 participants, and each group had a counselor trained in the curriculum used. Each session had three to four sessions of cardiovascular activity, which were centered on non-competitive games and individual actions. Two days a week, participants engaged in resistance training appropriate for their bodies. Additionally, one day a week the program included interactive sessions on goal setting, positive self-talk, recruiting social support, and other behavioral strategies intended to support continued physical activity were included. The participants beginning exercise self-efficacy, tension and depression were assessed using standard self-report methods. Self-efficacy was measured using the Exercise Self-Efficacy Scale for Children.

For analysis, significance was set at .05 for all changes and correlations. Significance was found for psychological factors and correlations. The findings are as follows for changes in children's psychological states: Exercise Self-efficacy Scale for Children ($p < .03$), Profile of Mood States (Tension) ($p < .04$), Profile of Mood States (Depression) ($p < .02$). Overall change in psychological perspective in relation to tension ($r = -.44$, $p = .001$) and depression ($r = -.33$, $p = .01$) scores. The study's findings reveal a significant correlation between physical activity and positive psychological change. Apparently, the

participants in the study also indicated a strong desire to continue their physical activity as indicated by the changes in self-efficacy scores. However, the research cannot determine specific causation of mood change due to the lack of control group in this research.

Students Perceptions of Health and Physical Activity

Honkinen, Suominen, Valimaa, Helenius and Rautava (2005) sought to determine which causes in relation to sense of coherence and physical activity were related to perceived health among 123, 12 year old school children from 35 Finnish public schools. Sense of coherence (S.O.C.) consists of three domains: comprehensibility, manageability, and meaningfulness, a person with a high sense of S.O.C. perceives the world as comprehensible, predictable and meaningful. Twenty-two of the schools were middle class, six were upper-class, and seven were socio-economically deprived.

All participants completed a questionnaire which addressed the student's: health perceptions, father and mother's occupation, S.O.C. statements, physical activity schedule, height and weight, social support received from teachers, grades in mathematics, grades in native language, grades in first foreign language, class environment, and the occurrence of psychosomatic symptoms. All responses were analyzed

collectively, and then the girls were analyzed again separately; both sets of data revealed similar results.

But six situations were found to correlate with students perceptions of poor health regardless of gender: a high frequency of psychosomatic symptoms, infrequent physical exercise ($p < .0001$), lower than excellent grades in mathematics ($p < .0050$), a weak sense of coherency ($p < .0229$), insufficient social support from teachers ($p < .178$), various perceived problems in the classroom environment ($p < .0239$), and obesity ($p < .3364$). Father's and mother's occupations as well as grades in language appeared not to affect student's perceived concepts of health. And over half of the participants reported excellent health, while the other half reported average or failing health. It appeared that children perceive health as a multidimensional construct of the mental, physical and social self.

While the study's results proved quite a few statistically significant findings, they reported no r-values and their method of testing were shallow for the amount of correlates they researched. Furthermore, the team constructed their own questionnaire to address all the domains studied, but failed to give an in-depth review of the questionnaire that was administered to the students. Nothing was reported about who administered the questionnaire or how the questionnaire was administered to the participants. However, the sample size was quite large and representative of students in the Finnish region and the research team

used logistical regression analysis and then a multivariate logistical regression model to ensure statistical accuracy for their questionnaire which gives the research heightened validity.

While Honkinen (et.al) explored 12 year old students perceptions of health in Finland, Walton, Hoerr, Heine, Frost, Roisen and Berkimer, (1999) inspected the theory of stages of change in 518 Western Michigan fifth and sixth grade students perceptions towards physical activity. The stages of change moved through five stages beginning at pre-contemplation and ending in maintenance. From their teachers, the children received surveys that measured which stage of change they resided in, as well as a physical activity log which they were instructed to keep for five days. Only 285 students returned their daily activity log.

The student's willingness to participate in habitual physical activity was judged by four questions from the original paradigm of Prochaska, "exercise" was classified as "at least 30 minutes of exercise or physical activity that does not include the exercise you get in physical education class." Physical activity from the past year was measured using the Past Year Leisure Time Physical Activity Questionnaire. The participants recollected 14 day physical activity was calculated with the Modifiable Activity Questionnaire for Adolescents. Finally, three sets of matched survey questions were written for the study regarding attitude towards physical activity, exercise, and physical education. This was assessed with a five-point Lickert scale.

The results indicated no significant differences by grade, but when grouping pre-contemplation, contemplation, and preparation as “pre-action” stages, and action and maintenance as “post action” stages categorized 40% of students in pre-maintenance and 60% of students in maintenance stages. More boys reported being in maintenance stages than girls (57.9% of boys vs. 39.5% of girls, $p < .05$) and more girls were in preparation stages (21.5% of girls vs. 10.3% of boys, $p < .05$). For pre-contemplation, contemplation, and action gender differences were insignificant. Within the students reporting less than 30 minutes of physical activity a day on the daily log 76% reported being in pre-action stages ($p < .05$), and students reporting less than 30 minutes of daily exercise, 67% also reported being in post-action stages ($p < .05$). A total of 22% of all students reported total lack of physical activity. Also, the results showed that more fifth graders favored P.E. and liked an increase in P.E. time, as compared to sixth graders. This connection revealed a link between increased age/grade level and decrease in attraction to physical activity.

Apparently younger children liked P.E. more than older children, and boys tended to engage more frequently in regular physical activity than girls. The study’s findings are limited to the fact that the researchers did not investigate correlates between why younger students prefer physical activity, and why boys tend to maintain a higher level of exercise than girls. Also, the study limited itself to one small geographic region,

and needed a larger scope. However, the study used several methods to collect data, and ran several analyses to ensure reliability.

Almqvist, Hellnas, Stefansson and Granlund (2005), looked into childrens' general perceptions of health concepts. The study based the research on 68 children (55.9% boys) between 4-5 years old from two community pre-schools in middle sized towns in Sweden. The research was conducted through an interview process. The interviewer asked each child five questions relating to the participants perceptions of health among others, health actions, consequences of health, threats against health, and consequences of ill health.

The individual answers from the children revealed that 50% of participants associated health with at least three of the health dimensions (body, activity, participation, and environment), revealing a multidimensional perspective of health, largely dependent on the ability to perform desired physical and social tasks. Eighteen percent of children related health to all four health dimensions, and 12% of children related health to a single dimension, either body or activity. Thus the majority of children interviewed perceived health as a multidimensional state of being that is affected by physical, mental and social aspects of life.

This study's boundaries reside in the fact that it was done in rural Sweden, and thus the results may not be transferable to American youth. Also, the methods used to assess children's perceptions of health were not standardized assessments. The strengths of the study reside in the fact

that the data was content analyzed, the researchers became familiar with the students before interviewing them, and the interviews took place on an individual basis where the participants had the opportunity to explain and define their answers in their own words.

Although Almquist (et. al.) interviewed second grade children to understand their perceptions of overall health as related to five domains of health, Martin (2002) researched the perceptions of high, average and low physically skilled second grade students in relation to physical education class, and physical education teachers. The students came from two different schools, and four different classes in the Pacific Northwest. A total of 64 children were videotaped during three P.E. sessions and then 43 of them were interviewed and audio taped individually. Only 29 students were both videotaped all three times and interviewed. Thus, the data rests on 29 students' responses and videotapes. The interview questions all pertained to the students perceptions of P.E. class and teachers, what they liked and didn't like about P.E. class and teachers, and if and why they think P.E. is or is not important. After taping and interviewing ceased, the researcher reviewed the videotapes and each participant was coded for high (N=7), average (N=12) or low (N=10) performance skills based solely on the videotapes. Then the researcher matched the responses to the students with their skill level in P.E. class.

All the 29 second graders liked P.E. class regardless of their skill level, and all thought that a good P.E. teacher was "nice" and not "mean".

The low and average groups tended to make general responses to questions, and cited safety and behavior related issues as why P.E. was important. Whereas the high performing group gave specific answers (naming games and activities that they liked, thought important etc.) to questions, and rarely indicated safety and behavioral issues as important learning. Thus the results indicate that P.E. class, curriculum and teachers need to provide varied experiences and opportunities to suit the needs of all students and thus provide successful experiences for all students regardless of their skill level.

These results are not generalizable to a larger population in part due to the small sample size. Also, the interviews took place in the P.E. classes of the students; therefore the environment could have substantially impacted participant's responses to questions particularly about whether they liked P.E. class. Furthermore the participant's skill level was judged based on the researcher's perceptions, and no statistical analysis was conducted. However the researcher conducted each interview individually and audio taped all interviews in order to produce accurate and accountable qualitative data from responses. Additionally, the researcher taped each class three times, and built a modest relationship with the participants in order to produce authentic responses from the participants.

Similar to the previous studies, Treasure and Roberts (2001) explored the intertwining of students' perceptions of the motivational

climate and beliefs about the causes of success, inclination for challenging tasks, and contentment in physical education. The participants were 50 female and 46 male seventh and eighth grade students from a public school in the Midwestern United States. The mean age was 12.08 years old, with varied ethnicities: 68% White, 24% Black, 4% Hispanic, and 4% Asian. The research was based on the premise of a two week mastery experience in physical education, and performance experience. The mastery experience focused on a multitude of tasks designed for students to find their own personal success and self referenced improvements. The instructor gave praise privately and individually to students based on persistence, effort and improvement, and students performed in different ability groupings. Performance experience P.E. resulted in restrictive tasks emphasizing performance and instructor created criteria for improvement and success. Approval and praise was given in front of the entire class, and was reserved for students with the best performance. Students were grouped by ability and a time limit was set for skill acquisition and improvement.

The multitude of tests given to students assessed their perceptions both before and after the intervention took place. The assessments used were as follows: Perceptions of Success Questionnaire, an adapted version of the Perceived Motivational Climate in Sport Questionnaire, the use of two independent observers who watched a P.E. class, a 17 item scale which assessed three subscales: motivation or effort, ability, and

deception, two questions pertaining to preferences for challenging tasks, and an eight item scale which measured satisfaction and boredom during the "TARGET" intervention.

The findings of the study revealed that correlations existed for all the domains in both the performance and mastery orientated P.E. classes. Mastery oriented experiences positively correlated with perceptions of success, motivation or effort and satisfaction ($p < .01$). However in performance condition settings the correlations were negative for beliefs about motivation, success or effort, task challenge, and satisfaction, but positive for deception ($p < .01$). Thus the mastery setting provided students with a perception of greater personal success and thus appeared to motivate them more and create more satisfaction with their P.E. performance as compared to the performance environment.

The instructors for the P.E. classes were highly qualified and accustomed to teaching in either a performance or mastery experience setting, and a significant amount of statistical analysis was administered to all test results. However, the study was conducted over a short two week period which could result in inaccurate data, or exaggerated p values. Also, no interviewing of participants took place within the two week time. All data collected came from Lickert scales and adapted norm tests and no reliability or validity measurements were given for the CAPAS.

While Treasure and Roberts (2001) looked into the causes of motivation, success and satisfaction in physical education, Paxton,

Estabrooks, and Dzewaltowski (2004) researched the connection between perceived physical competence, attraction to physical activity, and physical activity conduct in 63 rural 4-H members from a small Midwestern town. Of the participants, 66% were girls, all were Caucasian, and the mean age was 11.5 years $SD=1.77$.

Data was gathered through a compilation of assessments.

Physical activity was measured through The Physical Activity Questionnaire for Older Children (PAQOC: grades 4-8), the assessment of perceived physical competence was taken through an adapted version of Harter's original Perceived Physical Competence Scale for Children, and attraction to physical activity was assessed using the Children's Attraction to Physical Activity Scale (CAPAS). Trained research assistants administered the tests to all the participants at the 4-H location, and anti-biasing measures were taken to ensure answer reliability.

The first results indicated that as children's perceived physical competence raises so does their attraction to physical activity and the likelihood that they will increase their physical activity. Before mediation analysis was conducted the bivariate correlations were rather significant between physical activity and competence ($r=.34$, $p<.01$), physical activity and attraction ($r=.45$, $p<.01$), and attractions and competence ($r=.63$, $p<.01$). Additionally, when attraction to physical activity was added as a mediator between perceived physical competence and physical activity, the correlation associated with perceived physical competence was

reduced ($p > .05$). Thus it appeared that the relationship between perceived physical competence and physical activity is mediated by attraction to physical activity. Thus if participants' perceptions of physical competence and attraction increases then physical activity may increase as well.

Three limitations require mentioning; the age range of the participants was substantially greater than in other studies of this sort. The range of age could impact validity and consistency of the findings, but the ages were typical of 4-H clubs thus allowing generalization for other 4-H clubs. Also, the study design was cross sectional; no allowance was made for interpreting how perceptions of physical competence lead to attraction to physical activity, which then leads to physical activity behavior, yet mediation was determined and used. Lastly the sample size was rather small which could have exaggerated the results, or produced A-typical results of a sample of larger participants.

Integrating movement and physical activity in classroom curriculum,
and intervention programs

Harrell, McMurray, Gansky, Bangdiwala and Bradley (1999), explored the population effects of both classroom-based and risk-based eight week interventions designed to reduce cardiovascular disease risk factors in children. The participants (N=2109, 1043 boys, 1066 girls)

came from third and fourth grade classrooms in 18 schools from North Carolina. Six schools were assigned to each of the three groups (risk-based, public health approach or control group). The risk based group was comprised only of students who had qualified for one or more cardiovascular disease risk such as obesity, high cholesterol, physical inactivity, and risk of smoking. For this group three interventions were used: nutrition classes (n=393) twice a week, physical activity classes (n=213) three times a week, and “don’t start smoking classes” (n=455) twice a week. The public health approach was conducted on all children in a classroom, and took place in the classroom with the use of American Heart Association lower and upper elementary program kits, implemented by the classroom teacher twice a week for eight weeks. The content focused on choosing heart healthy foods, the dangers of smoking, and the importance of habitual physical activity. Additionally, these children received 20-plus minutes of physical activity three times each week. The control group received no intervention.

Students were asked at the beginning of the study if they had ever smoked a whole cigarette and if “they smoke now”. For data related to physical activity, participants completed an adapted version form of the Know Your Body Health Habits Survey. Health knowledge was measured (at posttest only) with a questionnaire adapted from the Heart Smart test which tapped knowledge of smoking, heart healthy eating habits, and

exercise. Cholesterol was taken, weight, height and BMI were measured, and skin-fold tests were administered.

Results showed that only self-reported physical activity score and total healthy heart knowledge showed changes with intervention. Total knowledge in the classroom-based intervention schools was significantly greater than that in the control schools (7.86; 95% CI=3.32, 12.40). The physical activity score improved significantly only in the risk-based schools (3.87; 95% CI=1.35, 6.39). The MANOVA results indicated a significant overall intervention effect ($p < .001$). Both intervention groups significantly decreased body fat, while body fat in the control group increased. All three groups showed significant changes in BMI ($p < .01$) with the two intervention groups increasing muscle mass, and the control group increasing fat. Changes in physical activity scores were significantly different among the three groups ($p < .01$).

Overall, the public health approach intervention yielded the greatest changes as related to: in depth heart health knowledge, reduced cholesterol and skinfold, increase in aerobic power, and well-maintained blood pressure. While correlations were not determined, the researchers suggested the success of the public health approach resulted from social engagement, additional support provided by the classroom teacher, and the feeling of inclusiveness provided by the classroom approach, as compared to the risk intervention approach.

The strengths of this study include the randomized approach, the use of a control group, as well as the comparison between a small group intervention approach, and a large group intervention approach, and the thorough approach to data collection. Also, the sample size was large and diverse. Furthermore the research did not appear to control for varying implementations of the interventions, which could drastically alter the way the children received the interventions, and thus skewed the results.

Although Harrell (et. al) (1999), explored the population effects of both classroom-based and risk-based eight week interventions designed to reduce cardiovascular disease risk factors in children, Sallis, McKenzie, Alcaraz, Kolody, Faucette and Hovell (1997), monitored and measured the effects of a two year long physical education intervention Sports, Play and Active Recreation for Kids(SPARK) designed to increase physical activity among (n=955) fourth and fifth grade students from urban California during physical education (P.E.) as well as outside of school. The design consisted of three groups: a control group which received no intervention, but usual P.E. class, a (SPARK) specialist led P.E. class, and a (SPARK) trained classroom teacher who implemented the (SPARK) curriculum with students. The intervention groups were constantly monitored by the investigation team and given feedback with additional training as needed. Two consecutive cohorts entered the experiment and participated in their respective design as both fourth and fifth grade students. Self report and fitness data were collected at the beginning and end of each school year.

Each school selected had just one of the designs implemented at their school, seven schools were selected in all. A total of 264 students participated in the specialist-led design, 331 in the teacher-led, and 360 in the control group. The subjects ethnic distribution was as follows: 82% European American, 12% Asian/Pacific Islander, 4% Latino, 2% African American, and 53% of subjects were male.

The intervention components consisted of three, 30 minute session of P.E. per week, 15 minutes of health fitness and 15 minutes of skill fitness. Progression was developed through modifying the intensity, duration and complexities of the activities. Students were instructed to self monitor and record their progress monthly in an effort to encourage self-motivation. In addition to the physical component, weekly 30 minute self-management classes were taught, which focused on behavior skills to encourage physical activity outside of school. Lastly, homework and monthly news-letters were sent home to encourage parent child physical fitness opportunities.

The data collection included self-reported physical activity with the use of a one-day recall checklist, one weekday and one weekend day per semester the students wore an accelerometer to measure their out of school physical activity, cardiovascular strength was measured through the one-mile run, sit-ups were used to measure muscle and endurance strength, pull-ups were the measurement of upper body strength and hamstring stretches indicated flexibility. Height and weight were taken for

each participant. Lastly, video cameras randomly selected and observed four children every 20 seconds during rotating four minute blocks throughout the class to monitor activity type and level of exertion.

The overall successes of the interventions varied. They appeared to increase amount of time spent in physical activity during P.E. by an average of 13 hours as compared to the control group. However, the intervention failed to get children more physically active outside of school. Individual health related outcomes varied moderately for the intervention groups, particularly for girls, as compared to the control group. Girls participating in the specialist led intervention improved considerably in the mile-run. There was no difference between boys in different groups for the mile run. Also, the sit-up tests revealed differences for girls among the intervention groups and control groups, but none for boys. Girls in the intervention groups were able to perform an average of 11 sit-ups more than girls in the control groups by the end of spring quarter in fourth grade ($p < .002$), and fall of fifth grade ($p < .001$). At the conclusion of the study, no significant differences between the groups were found for skin-fold tests, BMI or weight. Thus, the interventions were successful at increasing time spent in physical activity and higher calorie burning resulted, and girls in the interventions appeared to benefit slightly more than those in the control, but boys seemed to achieve the same physical fitness goals regardless of condition.

The limitations of the study included a significant difference between sample size in the control group and the specialist led intervention group, a rather small selection of schools all from the same district, and a lack of baseline data collected on the accelerometers prior to participants use. However many measures were created to ensure consistent delivery of intervention lessons, including videotaping, personal observation on behalf of the research team, ongoing training and feedback from the research team, as well as the availability of consistent curriculum. Lastly, the team used a control group as well as two different types of experimental groups to gather the most complete data possible on the effectiveness and variables of the (SPARK) program.

Oliver, Schofield and McEvoy (2006) examined the feasibility of creating and integrating a four week curriculum incorporating physical activity with English, social studies, mathematics, statistics, and homework for 78 fifth and sixth grade students from three upper class Auckland New Zealand primary schools. The second aim was to identify if the integration of physical activity would enhance the amount of time spent in physical activity at school.

The curriculum design was a comprehensive, thematic four week program that revolved around the central idea of a “walk around New Zealand”. All children wore a pedometer for three week days prior to the study to establish baseline physical activity levels. Then children wore the pedometers for the next four weeks except while sleeping and

participating in water activities. Teachers recorded step counts at the beginning of each school day, and the weekend totals were taken Monday mornings when students arrived at school.

In order to minimize for a ceiling effect, students were divided by gender and then grouped by baseline activity levels. The findings indicate that boys accumulated 2000 steps more than girls during intervention weekdays ($p=.03$), but no difference during weekends. All participants were significantly more active during weekdays than weekends during intervention ($p= .0001$), but no significant difference was determined from baseline to intervention physical activity levels for the group as a whole. However the individual groups activity levels changed depending on their baseline activity levels. The boys in the lowest activity level group increased their daily steps by an average of 1,000 steps but did not achieve significance. Girls in that group increased their steps on average by 2,000 steps a day ($p=.04$). Students in the second lowest physical activity group who accumulated less than 15,000 steps a day during baseline increased significantly in their physical activity levels (boys $p=.04$, girls $p=.01$). However, boys in the highest quartile of physical activity did not significantly change their physical activity, but girls in that quartile did ($p=.02$). Thus the results are best understood in the subgroups as opposed to the whole group. It appeared that physical activity increased as a result of intervention when baseline physical activity decreased and greater increases occurred for girls.

The lack of diversity among the students in the study creates a pitfall for the findings. Students were all from the same district, and high socioeconomic status, furthermore they were convenience sampled and not randomized. Additionally, the sample size was quite small and ungeneralizable. While the study collected baseline data from its participants, the researchers failed to utilize a control group for comparison. And the sole use of a pedometer to measure physical activity provides incomplete data on physical activity engagement. Lastly, the four week length of the study was short and did not provide for long term results.

Although Oliver, Schofield and McEvoy (2006) examined the feasibility of creating and integrating a four week curriculum incorporating physical activity, Dowda, Pate, Trost, Almeida and Sirard (2004) investigated if Moderate to Vigorous Physical Activity (MVPA) varied with differences in policies/practices and overall quality of preschools. Nine preschools, three of each type (private, church affiliated or Head Start) were randomly selected from Columbia, South Carolina to participate. A total of 266 children ranged in age from three to five years old (60% African American and 53% girls) were enrolled in the study.

The use of a modified version of the Observation System for Recording Activity in Preschools allowed researchers to observe children for one hour on two to three days, and record their activity level and intensity. Also, researchers conducted a structured interview with an

administrator from each preschool. The interview determined the practices and policies of the preschool in relation to active and sedentary activities promoted by the preschool, such as time outside, time inside devoted to play, field trips and allotted screen time. After the interview the preschools were divided into two groups those that had implemented policies to promote physical activity and those that did not. Also, class size was determined, as was the educational background of the teachers. Finally, one classroom from each school was evaluated using the Early Childhood Environment Rating Scale-Revised Edition (ECERS-R). This instrument assesses the seven different domains of the classroom environment such as space and furnishings and parent and staff needs. The (ECERS-R) is a 43 item Lickert scale.

The findings revealed no significant differences between the three types of preschools. However, children who attended preschools that promoted four or more field trips a month participated in higher amounts of moderate to physical activity (MVPA) than those that did not sponsor as many field trips ($p=.001$). Class size did not have a significant difference on MVPA ($p=.08$). Surprisingly, children attending preschools with more time permitted outside had significantly lower levels of MVPA, than students who attended preschools with restricted outdoor time ($p =.04$). After adjusting for race, age, sex, and BMI, children with college educated teachers spent more time in MVPA than students with non-college educated teachers ($p=.03$). Support from community organizations,

screen time use and preschool quality were not associated with MVPA levels either overall or on the playground. Yet children in overall higher quality preschools spent significantly ($p=.05$) less time in sedentary activity than children who attended less quality preschools. Overall, the two most significant factors in promoting physical activity amongst preschool children were field trips and college educated teachers.

Limitations consist of the cross-sectional design of research, and the limited research done on policies and practices of the preschools. Many policies, and factors not included could affect students' physical activity level in the preschool setting. But the interview process and personal observation of the collected data encourages reliability for the sample size and the sample of participants was rather large.

Girls: barriers to physical activity and intervention

With so much of the previous research detailing girls' lack of participation in physical activity (Felton, et.al. 2005, Pate, et.al. 2005, Dwyer et.al. 2006) and serious declines of adequate physical activity as age increases (Health and Human Services 2000), the review of research investigating girls perceived barriers to physical activity and interventions tailored specifically for young females is necessary. While the legislation of title IX in 1972 prohibited sex discrimination in educational environments (Kientzler, 1999) current estimates suggest that girls are still

50% less likely to participate in physical activity as compared to boys (Kientzler, 1999). The research in this section conducted qualitative research to investigate why so many young girls do not participate in leading healthy active lifestyles.

In general the research found that girls perceive multiple barriers to participating in physical activity. However teachers and schools can succeed at helping the majority of their female students to enjoy and participate in physical activity. With careful planning, and attention to girls specific environmental, social and physical needs the barriers disintegrate, and girls not only participate in physical activity, but the vast majority enjoy their daily P.E. classes and continue activity outside of school. While Felton (2005) and Pate (et. al.) (2005) did conduct their research over a period of two years in order to track the evolution and success of the LEAP intervention, their research failed to track the girls into further adolescents in order to determine the long term success of the intervention once P.E. ceased to exist as a requirement.

Dwyer (et. al.) (2006), investigated perceived barriers to physical activity on behalf of 73 adolescent girls (35% Asian, 24% White, 22% Black, 1% Latin American, 8% other, and 10% multi-racial) living in Toronto Canada. The selection ensured ethnoracial diversity. The girls were between the ages of 15-16, in grades 10 and 11. The participants were placed into focus groups consisting of eight to twelve girls and a moderator. They attended seven sessions total. The focus group

investigated and discussed why physical activity is performed, even if done rarely, the obstacles girls encountered that make participating in physical activity challenging, and suggestions for improving physical activity within their community. All sessions were audiotaped, and transcribed verbatim. Then the tapes were analyzed, and lists of themes were generated and coded until agreement was reached within the research team as to internal consistency.

The results indicated that the participants, regardless of their ethnicity, had a plethora of perceived barriers to participating in physical activity, these were: lack of time, involvement in technology-related activities, influence of peers, parents and teachers, concern about safety, inaccessibility of facilities and cost of using them, competition, and body centered issues. Among the different focus groups all participants cited the above barriers to physical education, but the main challenge to participating in physical activity was lack of time. Many girls discussed their overwhelming homework and household chore loads. Some girls discussed their challenges with having to take on a part time job to help support their families, and maintain decent grades so they could get a good education. This finding suggests that teachers and administrators need to adjust the environment in schools to compensate for the lack of free time the girls mentioned.

The strengths of this study reside in the focus group approach, where the participants accurately described their concerns

towards physical activity. Additionally, all sessions were audiotaped and transcribed, then coded to ensure consistency. Adding strength to the results was the diversity of the participants races and cultural backgrounds. The researchers used effective qualitative research methods. However, the sample of participants was quite small and came only from an urban metropolis which limits the generalizability of the finding. Also, the study focused on perceived barriers, thus making it hard to determine if the same barriers exist for other girls outside of the sample.

Kientzler (1999) explored three questions addressed through a survey as to (1) why and how much physical activity fifth and seventh grade girls participate; (2) what conceptions girls have about the benefits of physical activity; and (3) which girls participate in physical activity. The sample consisted of 51 fifth grade girls, and 55 seventh grade girls from three different schools in one district from a southwestern city in the U.S., aged between nine and thirteen. The girls ethnoracial demographics were as follows: 1% African American, 4.1% Asian, or Pacific Islander, 8.2% were Hispanic, 85.7% White, and 1% other. 12.4% of the girls came from lower socioeconomic households, 87.6% did not. The assessment was used to determine the answers to the three questions; (1) why and how much physical activity fifth and seventh grade girls participate; (2) what conceptions girls have about the benefits of physical activity; and (3) which girls participate in physical activity was developed by Kientzler and termed the Girls Physical Activity Survey (GPAS). The GPAS was a

comprehensive survey of 39 questions graded with a Lickert type scale. The P.E. teacher at each school administered the assessment to the participating girls during P.E. class.

A combination of descriptive statistics and quantitative statistics revealed that 99.6% of girls participate in physical activities because they are fun, 65.9% do it to “stay or get in shape”, and 42.9% “to stay healthy”. The most common reason for not participating in physical activities was due to “conflict with other activities” (72%). Other reasons were “I can’t find a sport I like” (37.3%); “I don’t feel like it” (32%); “I have a chronic ailment” (26.7%); “I am not competitive” (24.7%); and “I don’t want to embarrass myself” (20%). Physically active girls suggested teaching the benefits of regular physical activity, make exercise more fun, encourage the development of new skills through a variety of sports, and have teachers and coaches who better understand girls in order to involve non-physically active girls in exercise. Girls in both grades agreed that they would be more drawn to sports if teams played one another for fun rather than for competitive reasons. Additionally both grades agreed that having coaches and teachers who understand their students and players would make sports more enticing and P.E. classes should not be graded by how good a student is at a particular skill or sport. Additionally, students in both grades who participated in regular physical activity appeared to have better knowledge of benefits of physical activity and health related issues ($p > .0001$). Positive correlations were found between girls physical activity

and their parents physical activity ($p < .001$). But no significant correlation was found between parental verbal encouragement and actual participation in physical activity. Girls who participated in physical activity on average tended to perceive their academic grade one grade higher than those who did not participate in physical activity ($p < .007$), and perceived their physical ability higher than girls who did not participate in physical activity ($p < .0001$). Thus girls who participate in regular physical activity appeared to have better self-concept perceptions. Like the Dwyer (et. al.) (2006) study found, many factors influence girls perception and participation, or lack thereof in physical activity. But again the main reason for non-participation seemed to be a lack of time due to involvement in other activities.

The limitations of this study include the small sample size. The fact that the majority of participants were involved in regular physical activity could potentially skew the findings, and all the participants came from the same area. However, the researcher chose the higher socioeconomic location because she sought to eliminate lack of resources as one potential reason for non participation. All data was gathered through survey on a non-normed assessment which was too broad. The research would have benefited from the use of interviews and more specific assessments.

Unlike the above studies, Pate, Ward, Saunders, Felton, Dishman and Dowda (2005), were not concerned in assessing girls perceived

barriers to physical activity, but rather if an intervention known as the Lifestyle Education for Physical Activity Program (LEAP) would encourage girls to participate in physical activity and ultimately increase their time spent in physical activity and change their conceptions of P.E., and their self-efficacy towards physical fitness. The study sampled two consecutive cohorts of ninth grade girls (N= 1604) from 24 high schools, 47.5% were African American and 52.5% were white. Schools were analyzed for socioeconomic and racial statuses and then divided and paired for intervention and control schools. Each intervention school was compared to a similar demographic control school.

The intervention was structured as a reorganization of P.E. in the high schools, with an emphasis on creating a girl friendly P.E. experience. No new curriculum was introduced. Instead schools organized a team of LEAP leaders to revamp the existing curriculum in order to suit the needs of young girls. Changes included providing all girl P.E. classes, with focuses on dance, aerobic, weight training and non-competitive games and sports. An environmental component existed as well. Schools needed to display positive images of healthy active women, promote physical activity outside of school in the school paper and on bulletin boards, and encourage teachers to engage in visible physical activity during school hours.

The measurement of physical activity included The 3-Day Physical Activity Recall which had students chose from a list of 55 activities what

they did for each 30 minute block of time from 7am to midnight, for three consecutive days starting with the most recent and working back. Height and weight were also measured. Both procedures were done twice; first at the end of eighth grade to establish baseline, then again at the end of ninth grade to establish results.

ANCOVA results showed that girls who participated in the LEAP schools were significantly more active than girls in the control school ($p=.05$). One academic year of exposure to the leap intervention resulted in an eight percent increase in vigorous physical activity for the participants as compared to the control group. However the no change in weight or BMI was noted. Thus it appeared that the LEAP intervention was successful at increasing girls physical activity, but not thorough enough to reduce weight, or increase muscle mass.

The limitations of this study include the fact that one of the aims was to increase girls' self-efficacy towards physical fitness, yet no data was reported on how the intervention affected self-efficacy and exercise. Also, the research used a self-report physical fitness measure as opposed to an accelerometer, which provides more accurate data of actual physical fitness. Lastly, the schools were all from one state, but the state or region of the schools was never revealed. The study was strong in that it had a large sample size, that was evenly divided between Black and White participants, and that the control schools were paired with intervention schools that had similar socioeconomic and racial profiles. Also, the

schools were pulled from rural, urban and suburban settings which allows for generalizability. Lastly the methods were statistically well validated.

Finally, Felton (et. al.) (2005) conducted a case study from one of the high schools in the above study. All general methods of data collection and intervention procedures were carried out the same as in the above study. The population in this study was significantly smaller (N=124). Though, the state was revealed: South Carolina.

This school initiated girls only P.E. classes with great success. The first year only four classes were offered, but so much demand existed that all ninth grade girls opted for girl only P.E. the second year. Within these classes were new approaches to help girls assess their physical activity and be more physically active in class and outside of school, such themes as goal setting, decision making, communication skills, time management and application of physical activity skills outside of class were discussed in one 90 minute class period each week. Girls developed a personal portfolio that included assessments of their physical activity level, nutritional status, and body measurements. Each girl set goals and developed an individual fitness program. Pedometers were implemented for a new unit called "Tracking Steps". The pedometers were so popular many girls purchased their own. Additional units on self-esteem, body image and self-defense were implemented. Parental involvement was advocated and encouraged through the use of information packets and homework lessons that required parents to be involved in their daughters

fitness routines. Also, recruited community members taught classes such as self-defense, tae-bo and kickboxing.

At the end of the second year of the LEAP intervention a brief survey was administered to two classes (N=75) to assess the participants overall feeling towards P.E. and physical activity. The survey revealed that 90% of the girls liked P.E. and looked forward to it every day. All girls enjoyed having a variety of activities to chose from, being in a group, and learning how to set goals to be physically active. One participant said “I look forward to coming here every day. It is fun and I learned that exercise is fun.” Generally, the LEAP intervention appeared to succeed at motivating girls to participate and enjoy physical activity more than traditional P.E. classes. On average the girls tended to perceive themselves as more capable of maintaining a physical fitness routine due to knowledge of benefits and sheer pleasure, and were more involved in vigorous physical activity then those not in the leap program.

Triangulation resulted in accurate data regarding extent of intervention development and implementation, as well as measured physical activity change among girls. Additionally, qualitative data were collected by an independent evaluator. Because secular trend data was not collected the conclusiveness of this study was limited.

Summary

Chapter three was a review of the research about physical activity and its psychological effects on children and students. The findings of the studies were summarized and analyzed, based on the conclusions provided. The research was reviewed to examine how physical activity affects students' perceptions of self, and well-being, and how P.E. affects students' concepts of physical activity. The majority of the research on physical activity's affect on mood and well-being indicated that increases in physical activity usually resulted in enhanced mood and self-esteem.

The section on gender and self-efficacy as motivating factors for children to engage in physical activity revealed that young children tend to involve themselves in socially accepted gender specified sports, and as they age these social perceptions become even stronger. Older girls particularly tend to have lower self-perceptions and self-efficacy in physical activity. And self-efficacy and P.E. environment are two strong mediating factors towards student tendencies to engage in physical activity. The research found that efficacy building activities instead of skill based performance activities increased children's attraction to physical activity.

The research on students' perceptions of health and physical activity showed that students view health as a multidimensional structure which included regular physical activity. The research also showed that

students preferred a mastery experience in Physical Education where they set their own goals for mastering skills and meeting personal health outcomes, as compared to a performance based grading system where the teacher creates a standard for all students to meet.

The integrating physical movement and activity in classroom curriculum and revamping traditional P.E. section concluded the integration of physical activity into core curriculum engaged children in more physical activity when constructed as a consistent part of their daily curriculum.

Research on the barriers that girls face in participating in regular physical activity showed that girls endured numerous barriers to physical activity ranging from lack of time, to poor self-esteem. However, one school intervention constructed specifically to engage girls more comprehensively in physical activity inside and outside of school, resulted in improved activity level, perceptions of P.E. class, and attraction to physical activity inside and outside of school.

The findings of the literature reviewed have fairly similar results with some dissenting conclusions. Most studies noted differences in gender perceptions of physical activity and how current Physical Education curriculum tends not to cater to children with lower physical self-concept and efficacy. Other studies revealed benefits for intervention programs that create Physical Education environments tailored to both boys and girls that focused on mastery situations rather than performance. Still,

other studies findings focused on the relationship of physical activity to mood change, depression alleviation, bolstering of self-esteem and fostering positive self-concept. The majority of studies found positive correlation between mood and physical activity, but some studies found no connection between any of the above factors and physical activity.

A major weakness in most of the studies hinged on the fact that they were not longitudinal (with a few exceptions), nor did they do follow up research. Except for a few, most studies populations were from similar areas, and the numbers of participants were small negating generalizability. Also, no research was conducted on why physical activity tended to enhance mood state and self-esteem and foster self-efficacy.

Chapter four outlines the summary of the findings from this chapter with respect to the above mentioned topics. Then chapter four will consider classroom implications and suggestions for future research.

CHAPTER FOUR: CONCLUSION

Introduction

Chapter one explained the rationale of this paper as examining the effects of physical activities relation to mood, well-being, self-esteem and differences in students perceptions based on gender and issues related to self-efficacy. Chapter two focused on the historical background of Physical Education and movement education and the beginnings of both in the United States, with some ancient ties to world history. Chapter two also examined the current educational debate about the necessity of recess and Physical Education in the decade of No Child Left Behind legislation which demands extraordinary rises in student test scores. With many schools scrambling to meet federally legislated standards the solution often tends to decrease student time spent in movement related activities, and increase time in sedentary study activities. An extreme educational schism about the importance of physical activity for children's physical health, mental health, and academic achievement potential in school versus the necessity for strict academic excellence and how to merge the two currently ensues.

Chapter three reviewed the available research to examine how physical activity affects student's well-being, as well as student's perceptions of physical activity, health and P.E., and what motivating factors influence participation in regular physical activity. The articles in chapter three were also reviewed and critiqued based on the studies research strengths and weaknesses. General strengths of the research reviewed include the use of logistical regression analysis and multivariate logistical regression models to ensure statistical accuracy, the use of normed assessments, multiple methods for collecting data and the use of both qualitative and quantitative approaches to research.

The majority of the studies reviewed used sound research methods such as reliable assessments and statistical analysis but faults were found with all studies. The majority of the research did not use large or diverse enough sample sizes. Many of the studies participants were selected from the same geographical area and came from similar backgrounds. There were some studies with large numbers of participants but even those studies used students from the same county or state. Also, all the studies reviewed failed to do longitudinal research. Most of the studies conducted research within a few weeks, or months' time frame. While there were a few studies that conducted research lasting over a one to two year period, all studies failed to conduct follow up research on participants. This is problematic because initial research results could have been skewed or affected by environmental change or other unknown

reasons. Follow up research and longitudinal studies provide long-term data which can offer trends and more reliable results.

Also, none of the studies provided research into why children's moods tend to change positively with bouts of physical activity, some speculated that the change in mood could relate to social engagement, change in blood pressure, and brain activity, or change in environment. But no conclusive research was conducted to provide statistical data to confirm researcher's beliefs. Understanding why children's moods are positively impacted by movement and exercise is essential information for this debate.

Chapter four is the concluding chapter of this paper. This chapter revisits the guiding question, how does physical activity affect students sense of self and well-being, and uses a summary of the findings - based on the five areas: physical activity: Mood and wellbeing; Motivating factors for physical activity: Gender and self-efficacy; Students perceptions of health and physical activity; Integrating movement and physical activity in classroom curriculum; and Girls: barriers to physical activity and interventions from the initial review, to answer the question of the study. Implications for classroom practice, and suggestions for further research proceed the summary of findings.

Summary of Findings

How does physical activity affect students sense of self, and well-being? This was the guiding question for this review of the professional literature. The question is important considering the current educational debate about the use of time in school and how best to serve student needs. Is physical activity important enough to take time away from core curriculum subjects? Some believe time devoted to physical activity in school is a distraction from necessary curriculum such as mathematics and language. Others believe that physical activity is as necessary a component of education as any other subject, particularly with the rise of inactivity related illnesses plaguing children. The Surgeon General noted in 1999, 13% of children aged 6 to 11 years and 14% of adolescents aged 12 to 19 years in the United States were overweight. This prevalence has nearly tripled for adolescents in the past 2 decades. Thus, the Surgeon General recommended 60 minutes of moderate physical activity most days of the week to combat the risks involved with inactivity. Also, population studies show that at any one time between 10 and 15 percent of children and adolescents have some symptoms of depression (Smucker et al., 1986). Major depression among all children ages 9 to 17 has been estimated at 5 percent (Shaffer et al., 1996c).

Thus, The opening study conducted by Rehor, Dunnagan, Stewart and Cooley (2001) evaluated the psychological effects of physical activity on mood of college students after a single session of non-competitive physical activity and found that 45 minutes of physical activity contributes to significant decreases in negative psychological factors, and increases positive psychological factors. Williamson, Dewey and Steinberg (2001) examined a similar question as to whether or not children experience mood enhancement after short bursts of physical activity and found that short bouts of physical activity appeared to have positive effects on children's moods. Gaynor, Parfitt & Eston, (2005) sought to discover what relationship existed between a child's habitual physical activity level and their psychological well-being for a population of children from an economically-deprived region. The results of the study suggest there is a strong correlation for both genders and a rise in self-esteem and a shift of depression and anxiety among the children with higher amounts of habitual physical activity. Activity was significantly ($p < 0.001$) and negatively related to anxiety ($r = -.48$) and depression ($r = -.60$) and positively related to global self-esteem ($r = .66$). Although these findings are significant, they are not supported by the next study's findings.

In Contrast, Welk and Schaben's 2004 study wanted to determine the relationships among psychosocial correlates and physical activity levels in children who were given "equal and optimal" access to activity. Correlations among the psychosocial correlates were inconsistent. The

relationship of attraction to an activity and physical self-perception, physical self-worth, and athletic competence derived a correlation of $r=.69$ ($p<.05$), $r=.67$ ($p<.05$), and $r=.57$ ($p<.05$), respectively. Poulsen, Ziviani, and Cuskelly (2006), examined the “mediating mechanisms influencing the relationship between physical coordination ability and the outcome variables of life satisfaction and general self-concept. The mediating variables examined were dispositional goal orientations, domain specific self-concept variables and leisure-time participation. This particular study found high correlations between a boy’s physical coordination and their general self-concept ($p<.001$). Boys with Developmental Coordination Difficulties (DCD) both moderate and severe reported less life satisfaction, lower self-concept, and a stronger tendency to rely on electronic sources of media rather than physical activity for their leisure participation. The boys with DCD were less likely to participate in both organized sports and unsupervised social leisure activities. The DCD boys felt social exclusion, and the research linked this with their lack of confidence in their physical domain, and with living in a society that places great social value on sports and physical fitness. Causgrove-Dunn, Dunn, and Bayduza (2007) assessed the role in which sociometric status and perceived athletic competence, both personal and by peers, affected loneliness. The findings revealed significant differences on three of the four dependent variables in relation to gender. The four variables were loneliness, self-rating of

athletic ability, athletic ability as rated by peers, and sociometric status. The difference in loneliness experienced by the two genders was not significant. As for correlated findings, the research presented that girls and boys who received higher ratings of sociometric status, and athletic ability (both by self and peers) experienced less loneliness. The correlation between loneliness and both sociometric status and perceived athletic ability by peers was ($p < .005$.) indicating a connection between the loneliness a child experiences and their perceived sociometric status and athletic ability. Dissenting results came from Walters and Martin (2000), who argued that aerobic activity (running) does not significantly alter a child's self-esteem or help diminish behavioral problems. Another research team studied the difference in the increase or decrease of children's self-esteem as influenced not by aerobic versus non-aerobic activity, but as influenced by a creative teaching method vs. a traditional teaching method. Overall, both groups heightened their self-esteem in certain domains as a result of the classes, but the creative group had a significant rise in global self-esteem ($p < .001$) because the creative group improved on all six domains of their self-concept, whereas the traditional group did not have a statistically significant increase in global self-esteem because they only improved significantly in one area.

All but one study found significant correlations between physical activity and mental well-being in children. The study that found no correlation focused its research only on running rather than a program

with multiple outlets for physical activity. The other studies which found significant correlations between physical activity and positive well-being used various forms of movement and exercise. This may indicate that children need to find a form of exercise they enjoy in order to reap the psychological benefits of movement, rather than simply participating in a form of exercise for the sake of cardio vascular activity.

Another aspect of research that was reviewed was the role gender plays in mediating attraction to physical activity. Planinsec, and Fosnaric (2005), delved into the relationship between level of physical activity and physical self-concept in young children, and how the differences between the genders in those two areas effects motivation towards physical activity. They found that gender was not a significant factor mediating children's perception of self in relation to physical activity, but the other findings indicated that the amount of physical activity a child participates in directly correlates with their physical self-concept. The more activity a child is involved in, the better a child's physical self-concept, regardless of gender. Children's perception of self in relation to physical movement was studied by Brake and Bornholt (2004) to distinguish if a child's view of competence was discerned from a personal perception or a social perception; as well as if a child's view of their ability in physical activity was mediated by actual performance. Their findings suggested that children's self-concept and performance abilities did not seem to effect one another ($r = -.20, ns.$). Thus children seem to assess

themselves based on how others perceive them, as opposed to their actual performance ability. Lee, Fredenburg, Belcher, and Cleveland (1999), investigated the competence perceptions held by students of differing genders on different physical activities; what role gender played in student's perception of themselves as more capable in one activity over the other, and why genders often will not try both basketball and dance. Additionally, the research examined the student assessed motivational influences of four different teaching methods. The research indicated that social acceptability was a major mediator for why children justified their stereotypical gender beliefs. They found that social influences were the greatest indicator of how children perceived what physical activity they should participate in, rather than natural inclination. Further research on children's motivating factors, when participating in physical education class, were conducted by Ridgers, Fazey and Fairclough (2007). This research team set out to determine the association among a child's Fear of Negative Evaluation (FNE) and their perceived athletic competence within the context of physical education (P.E.) class. Their specific goal was to determine the correlation between gender and age differences in the dependent variables. Additionally, the research team wished to consider how the above variables impacted students P.E. process. The findings were significantly gender based. Girls tended to experience much higher bouts of self-doubt in their physical ability and fear of negative evaluation as compared to the males in the study. One potential reason

that Ridgers, Fazey and Fairclough (2007) found differences between gender's perceptions of perceived self-competence in relation to physical activity as compared to Planinsec, and Fosnaric (2005) who found gender to not be a mediating factor was the difference of age in the population studies. Planinsec and Fosnaric (2005) worked with a much younger population than Ridgers, Fazey, and Fairclough (2007), and research has noted that girls self-competence tends to diminishes in early adolescents.

The final two studies encompassed gender and self-efficacy's role as a mediating factor for participation in physical activity. Chase (2001) explored the question of how the variables of self-efficacy, age, and gender of children influenced their persistence, their present effort, and their future self-efficacy. There appeared to be no difference in terms of gender across the sample for any age group. The higher the self-efficacy as measured by Chase appeared to result in higher levels of persistence across time when the child was faced with failure. In addition, high self-efficacy in children appeared to result in increased effort and future self-efficacy. In all cases gender was not significant but age played a factor. Annesi (2004), like Chase (2001), examined how self-efficacy impacts, and is impacted by physical activity in children nine to 12 years of age, and additionally researched how children's rated tension and depression changed as a result of 12 weeks of physical activity. She found that physical activity did affect children's' mood states positively, and that self-efficacy mediates attraction to physical activity.

Thus, the majority of studies linked self-efficacy, perceived self-competence and gender as mediating factors toward attraction to physical activity. The above findings indicate that children have multiple reasons to or not to participate in physical activity. Children need to enjoy the activity which they are participating in and feel confident in their ability in order for continued participation. Children also liked to feel confident that they were participating in a socially appropriate activity mediated by gender. Gender appeared to have a substantial influence on older children's attraction toward physical activity.

The following set of research articles investigated student's perceptions of health and how physical activity effects health. Honkinen (et. al.) (2005) sought to determine which causes in relation to sense of coherence (S.O.C. consists of three domains: comprehensibility, manageability, and meaningfulness, a person with a high sense of S.O.C. perceives the world as comprehensible, predictable and meaningful) and physical activity were related to perceived health among, 12 year old school children. It appeared that children perceive health as a multidimensional construct of the mental, physical and social self, and how a child perceives their health effects their sense of coherence. Walton, (et. al.) (1999) inspected the stages of change in fifth and sixth grade student's perceptions towards physical activity. The stages of change moved through five stages: pre-contemplation, contemplation, preparation, action, and maintenance. The findings indicated that more boys were in

maintenance stage, and more girls were in preparation stage; suggesting that boys tended to participate more regularly in physical activity than girls. Also older students had more of a dislike for P.E. than younger students, correlating rising age with diminished interest in physical activity. Almqvist (et. al.) (2005) looked into children's general perceptions of health concepts, and like Honkinen (et. al.) (2005) found that children associated health with at least three of the health dimensions (body, activity, participation, and environment), revealing a multidimensional perspective of health, largely dependent on the ability to perform desired physical and social tasks. Martin (2002) researched the perceptions of high, average and low physically skilled second grade students in relation to physical education class, and physical education teachers. Findings indicated that the average and low skilled students had different experience and expectations for P.E. than more physically skilled students. Similar to the previous studies, Treasure and Roberts (2001) explored the intertwining of students' perceptions of the motivational climate and beliefs about the causes of success, inclination for challenging tasks, and contentment in physical education. Mastery oriented experiences positively correlated with perceptions of success, motivation or effort and satisfaction ($p < .01$). However, in performance condition settings the correlations were negative for beliefs about motivation, success or effort, task challenge, and satisfaction, but positive for deception ($p < .01$). Thus the mastery setting provided students with a perception of greater personal success and thus

appeared to motivate them more and create more satisfaction with their P.E. performance as compared to the performance environment. Paxton (et. al.) (2004) researched the connection between perceived physical competence, attraction to physical activity, and physical activity conduct. The results indicated that as children's perceived physical competence raises so does their attraction to physical activity and the likelihood that they will increase their physical activity. Additionally, when attraction to physical activity was added as a mediator between perceived physical competence and physical activity, the correlation associated with perceived physical competence was reduced ($p > .05$). Thus it appeared that the relationship between perceived physical competence and physical activity is mediated by attraction to physical activity. Therefore, if participants' perceptions of physical competence and attraction increases then physical activity may increase as well. All in all the research examined suggested that for children to be attracted to physical activity, P.E. teachers need to create mastery environments that encourage children to challenge themselves by their own measures. And that if children feel confident and successful in physical activity then their attraction goes up, and they will perform it more regularly.

Physical Education (P.E.) classes comprise the chief U.S. social institution for promoting and teaching children how to accomplish and maintain physical fitness and overall health throughout their lifetime. However the current high stakes educational milieu, joined with the rise in

type two diabetes, obesity and depression in school aged children leads many to wonder if traditional P.E. courses accomplish their intended goal. Thus policies are being scrutinized, and research is taking place to determine how to engage, motivate and integrate physical activity into daily curriculum, without taking time away from traditional academic subjects.

Therefore, another important research topic was how to encourage children to engage in more physical activity outside of school and on the weekends. All studies proved inconclusive as to how to engage children in adequate amounts of physical activity outside of school, particularly on the weekends. However, Oliver, Schofield and McEvoy (2006) found that by integrating physical activity into the daily school curriculum, inactive students were able to increase their daily physical activity in school. This leads to the question of how to mainstream integrated physical activity into daily classroom curriculum.

Harrell (et. al) (1999), and Sallis (et. al.) (1997) found that through enhancing and modifying P.E. teachers and physical educational specialists alike could significantly increase the amount of physical activity participated in during traditional P.E. classes. Harrell (et. al) (1999), and Sallis (et. al.) (1997) also emphasized the necessity of proper training and resources for classroom teachers who are responsible for their students P.E. component. Previous to interventions students taught P.E. by their classroom teacher were significantly less active than those taught by

specialists. However, with adequate training, feedback and resources teachers improved their student's physical activity levels significantly.

Unfortunately only one study was conducted over a significant amount of time, and the others were done over short periods of time. Though, overall all the research found that by utilizing smart planning, integration methods and adequate teacher training and resources students physical activity levels can and will rise significantly. Dowda (et. al.) (2004) investigated school policies and procedures to determine how physical activity in preschools is affected by administrative decisions. Their findings suggested that policies and administrators which encourage teachers to integrate physical activity, field trips and sensory learning help students to meet their daily fitness requirements. However, how to engage children outside of school in fitness activity has yet to be determined.

With so much of the previous research detailing girls lack of participation in physical activity (Felton, et.al. 2005, Pate, et.al. 2005, Dwyer et.al. 2006) and serious declines of adequate physical activity as age increases (Health and Human Services 2000), the review of research investigating girls perceived barriers to physical activity and interventions tailored specifically for young females became necessary. While the legislation of title IX in 1972 prohibited sex discrimination in educational environments (Kientzler, 1999) current estimates suggest that girls are still 50% less likely to participate in physical activity as compared to boys

(Kientzler, 1999). The research in this section conducted qualitative research to investigate why so many young girls do not participate in leading healthy active lifestyles. Both Kientzler, 1999, and Dwyer (et. al.) 2006 specifically investigated girls perceived barriers to physical activity and found numerous reasons ranging from self-consciousness, lack of time or opportunity, disinterest in activities offered in P.E., dislike of competitive environments, lack of self-efficacy in physical tasks, and some girls reported simply not caring about physical fitness. Both studies found that many girls were disenchanted with the opportunities provided in traditional P.E. classes and desired more female focused environments and tasks. These findings suggested that teachers and administrators need to revamp physical education curriculum to include young women's physical fitness desires, as well as provide opportunity for female specific physical activity inside of structured class-time.

The following studies (Felton, 2005 and Pate et. al. 2005, Russell et. al. 2005) focused on how one intervention, Lifestyle Education for Physical Activity Program (LEAP), designed specifically to promote physical activity in females at the high school level fared in the public school setting. Russell (et. al) 2005 is the larger of the two studies sampling 24 high schools. Felton (2005) researched one of the 24 high schools and conducted a case study on the participants and staff of that particular high school. The design of the research did not completely overhaul existing P.E. curriculum, but tailored the existing curriculum to

suit the needs of girls in the school. Non coed P.E. classes were provided, and fitness tasks such as aerobics, dance, self-defense and weight training were implemented. Additionally, the schools promoted teachers, school staff and families to increase their physical fitness, started promoting physical activities on bulletin boards and in the school newspaper, and representing positive images of active females in the halls and in P.E. The intervention at the case study school observed by Felton (2005) resulted in an eight percent increase in physical activity on behalf of the participating females, and participation in physical activity outside of school with family and friends improved, as well as a significant increases in positive perception of physical activity and its benefits for life and health of the body.

In general the qualitative research methods found that girls perceived multiple barriers to participating in physical activity inside and outside of school. But teachers and schools can succeed at helping female students enjoy and participate in physical activity. With careful planning, and attention to girls' specific environmental, social and physical needs the barriers disintegrate, and girls not only participate in physical activity, but the vast majorities enjoy their daily P.E. classes and continue physical activity outside of school.

Through the use of qualitative and quantitative data, the overall findings of the research indicated that children who participated in regular physical activity tended to have better mental well-being and self esteem

and that well-being could be positively influenced by increased amounts of physical activity and movement related tasks. The research also found that attraction to physical activity was mediated by several factors including age, gender, self-efficacy and circumstance of participation. It appeared that in order for students to engage in regular exercise and have mood positively affected by the exercise, they had to enjoy the activity and feel supported and safe during the activity. Research also found multiple social issues and barriers regarding why girls in particular struggle to include physical activity in their lives as they age. From the majority of the research, it appeared that k-12 students experience a positive change in mental well-being from physical activity.

Classroom Implications

The implications of the findings for the classroom from the research analyzed suggested that students' mental and physical well-being's benefit from movement related activity in their days. Through increased exposure to physical activity opportunities students could potentially enhance their sense of well-being and reduce their risk of inactivity related illnesses. These opportunities can arise during structured athletic time such as P.E. and recess or through the integration of physical activities in daily curriculum. According to the findings of the research mastery environments provide children with more confidence bolstering experiences in relation to physical activity, as compared to performance

conditions where students get graded on their skill ability rather than their own personal goals and progress. Thus curriculum and the needs of students must be evaluated to foster greater attraction to physical activity and children's personal concepts of physical ability. This finding particularly applies to girls who tend to have decreased attraction to physical activity as they age. Not only does their attraction decrease towards physical activity, but their self-concepts and self-esteem diminish with age as well.

Therefore, students would benefit from the incorporation of numerous opportunities to engage in physical activity through the integration of active learning into daily tasks, frequent stretch and movement breaks, and regularly scheduled movement time that focuses on the mind-body connection provided in a mastery environment. Furthermore, the encouragement of administration to adopt a school wide physical activity promotion program which helps students recognize not only the importance of physical activity but how to make time for the movement process, and provide positive images of all types of people engaging in physical activity is essential. Lastly, a non-competitive, mastery environment after school program which engages girls in physical and health related activities to foster efficacy in establishing and sustaining healthy lifestyles would provide girls with opportunities to be healthy and gain a better sense of well-being.

Implications for Further Research

While the majority of the findings in the research analyzed had similar consensus on the affects of physical activity on positive well-being of children, and the mediating factors between a child's attraction to physical activity as being sense of self, age and gender, many of the articles lacked long term evidence of their findings. More longitudinal research needs to occur on the affects of physical activity on children's state of well-being and self-concept, as well as the mediating factors of attraction towards physical activity.

Furthermore, numerous studies examined if physical activity impacted a child's mood state, but none of the studies researched why physical activity affected children's mood states. The same is true for mastery environment P.E. versus performance environment P.E. The findings indicated that children prefer to engage in mastery experiences in relation to physical activity, but no research was done as to why children become more attracted to P.E. and physical activity when a mastery environment exists. Thus, research into why children respond better and feel more comfortable in mastery environment physical activity situations needs to be conducted.

Lastly, much of the research was based solely on quantitative data, or qualitative data, rather than a combination of both. A combination of

both types of research would yield more well-rounded data for schools and community programs to base interventions on.

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