A Dissertation

entitled

Perceptions and Evaluation of a Physical Activity Program

by

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This qualitative case study, conducted in the Midwestern United States, explored the perceptions of teachers at two different elementary schools as they implemented a physical activity program during the school day. The program engaged students in daily physical activity through brief, organized, structured physical exercise. Interviews and classroom observations uncovered six primary themes. There were differences between urban-suburban schools, primary-intermediate grades, gender, teacher participation and enthusiasm, relationships to other lessons, variety in music selections, student leadership, and combining singing or chanting with physical activity. Teacher perceptions and researcher observations reported a positive impact on student motivation, school climate, attitude, self-esteem, and energy for academic tasks. Through these themes a deeper understanding of program implementation was gained, and recommendations for future implementation were created.
Dedication

To my father, who served as my perpetual rock of undying support. I miss you everyday.

To my mother, who has shown me the importance of loving and caring for others.

To Michael, for tolerating my ups and downs over the past 7 years of this process.

To all of my family and friends, who encouraged and tolerated me throughout this entire process.
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Table of Contents

CHAPTER

I.

Introduction........................................................................................................ 1
Identification of the Problem.............................................................................. 7
Physical Activity Program Description................................................................. 8
Purpose and Research Questions........................................................................ 8
Overview of Methodology..................................................................................... 9
Limitations........................................................................................................... 12
Significance of the Study....................................................................................... 13

II.

Review of the Literature..................................................................................... 15
Theoretical Framework......................................................................................... 17
Research Regarding Physical Activity, Self-Efficacy, Self-Esteem, and Motivation.................................................................................................................. 20
Physical Activity, Health Implications, Biological Response, Learning, and Structure.................................................................................................................. 29
Physical Activity and Gender Differences......................................................... 37
Physical Activity and Academic Achievement.................................................. 40
Summary............................................................................................................. 47

III.

Methodology.................................................................................................... 49
Qualitative Design............................................................................................... 49
V.

Summary and Discussion ........................................ 96
Review of Methodology .......................................... 96
Re-statement of the Research Questions ...................... 98
Connections Between Research Questions 1-5 and Themes .. 99
Findings Related to Research Question 6 ....................... 105
Relationship Between Current Study and Prior Research ... 109
Implications for Practice ......................................... 114
Recommendation for Future Research ......................... 117
Conclusion .................................................................. 118

REFERENCES .................................................................. 119

APPENDIX A

Staff Interview 1 Protocol .......................................... 128

APPENDIX B

Staff Interview 2 Protocol .......................................... 130

APPENDIX C

Principal Interview 1 Protocol .................................... 132

APPENDIX D

Principal Interview 2 Protocol .................................... 134

APPENDIX E

Field / Observation Note Template ................................ 136
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td><em>Data from Case Study 1 Pre and Post Program</em> Implementation</td>
<td>59</td>
</tr>
<tr>
<td>Table 2</td>
<td><em>Data from Case Study 2 Pre and Post Program</em> Implementations</td>
<td>60</td>
</tr>
<tr>
<td>Table 3</td>
<td><em>Interview Participants</em></td>
<td>66</td>
</tr>
<tr>
<td>Table 4</td>
<td><em>Observations by Grade Level and Gender</em></td>
<td>68</td>
</tr>
</tbody>
</table>
CHAPTER I

Introduction

In the 1980s, the U.S. educational system began to fall under a great deal of governmental scrutiny. *A Nation at Risk*, a report published by the National Commission on Excellence in Education (1983), brought the inadequacies of the American educational system to the forefront and created urgency for educational reform. The urgency for reform was based on research that was providing data that American schools were not producing highly-educated members of society. The decline in knowledgeable, educated individuals was not only evident in what business leaders were pointing out as a lack of quality applicants to lead businesses into the turn of the century, but it was also evident in the amount of academic remediation occurring in the military services, the number of remedial courses being offered at colleges and universities, and an enormous reduction in scientific achievements attributed to a lack of higher-order thinking skills. The findings presented in *A Nation at Risk* were the primary catalyst in the creation of several pieces of federal legislation that attempted to impact how education was delivered to students. *No Child Left Behind* (2001) and the *Individuals with Disabilities Education Act* (2004), legislation implemented during the George W. Bush administration, initiated a trend in employing accountability measures to address not only the quality of curriculum and how education is delivered to students, but also how educational professionals would be trained, how growing the human capital within the educational system would be accomplished and how funding for districts would be changed.

The development of these accountability measurements by the government required school districts to implement continuous improvement plans to not only monitor
progress, but also begin to reflect truly on how to develop quality educators, and structure school schedules to maximize instructional time to address the evident deficits. Districts began to administer state-mandated assessments at various grade levels so that departments of education at the state and federal level could quantify the performance of students and school districts. School districts began to receive state report cards that highlighted in detail how their students were performing in comparison to other students around the state. These report cards also included disaggregated performance data based on student demographics including ethnic background, socioeconomic status, competence in the English language and disability status. These pieces of legislation forced the school district administrators to change forever their mindsets regarding the delivery of education to students in this country. The legislation required schools to focus on all students and make quality education for all a priority.

During this period of educational reform, the technology boom emerged and with it the popularity of computers, computer games, and electronic devices that began occupying the time of America’s youth. These new sources of entertainment led to the trend towards children being less physically active and developing more sedentary lifestyles (Dorman, 1997). The expansion of the technology age, coupled with the attempt to address the accountability standards by spending more instructional time on traditional academic content resulted in a trend towards a reduction of time spent in schools on less academic curriculum such as the arts and physical education (Wilkins, Graham, Parker, Westfall, Fraser, & Tembo (2003). The Center for Disease Control and Prevention (2002), explained that one of the consequences of this combination of trends was an alarming rate of increased childhood obesity. The number of cases of overweight
young people between the ages of 6-19 more than doubled between 1982-2002. In terms of overall fitness levels, Americans are less fit now than they were 40 years ago, even though far more knowledge exists regarding the effects and benefits of health and wellness than ever before (Gao, Newton, & Carson, 2008). At least half of today’s youth do not engage in sufficient physical activity necessary to promote long-term health into and throughout adulthood. The overall Body Mass Index (BMI) in 18-29 year olds rose five percent between the years 1991-1998 alone. Type 2-diabetes mellitus has become one of the most commonly diagnosed diseases in children. In 2003, more children ages 6-10 suffered from cardiac arrest than ever before in history of the U.S. (Langford & Carter, 2003). The movement in the 1980s that focused on both health and wellness sparked a greater level of interest in exercise psychology and its effects on various psychological processes (Tomporowski, Davis, Miller, & Naglieri, 2008). Using physical activity to combat health issues beyond strict weight control has been considered by other countries for centuries. European countries evaluated how physical activity and health education improved overall hygiene and stopped the spread of diseases in areas of high poverty, which governments agreed were likely to always exist in society (Bloomfield, 2007).

Greek and Roman societies stressed the importance of educating the whole person; mind, body, and spirit for overall personal well-being, including how this holistic approach impacted learning tasks. In modern times physical activity and physical education have been used in conjunction with other activities to shape the whole child. Social cognitive theory suggests that people have judgments about their capabilities to execute or organize courses of action necessary to engage in specific types of
performances or task accomplishments (Bandura, 1993). Bandura defined this concept as self-efficacy. He also explained that how people behave can often be predicted by their beliefs about their ability rather than their actual ability to accomplish a task (1993). An individual’s self-efficacy beliefs help to determine how he or she will act upon the knowledge and skills he or she has acquired.

Tomporowski et al. (2008) explained how socioeconomic status and physical activity impacts students from different financial backgrounds. Their research indicated a positive relationship between student levels of self-esteem and participation in physical activity programs and academic performance especially in urban elementary students. A significant impact of the physical activity program was found for suburban elementary students but this impact was less than the impact of the program in the urban elementary students.

There has been an increase in research studies exploring the impact of physical activity on self-efficacy beliefs, self-esteem, and motivation since the turn of the century (Dzewaltowski, Geller, Rosenkranz, & Konstantinos, 2010; Schmalz, Deane, Birch, & Davison, 2007; Stein, Fisher, Berkey, & Colditz, 2007; Tremblay, Inman, & Williams, 2000). This research reinforced the idea that not only does physical activity help students through the reduction of excess weight and risk of future weight issues, but also improves self-esteem, motivation, and overall self-concept, which also impact academic achievement (Tremblay, Inman, & Williams, 2000).

Educators continue to look for creative ways to adjust scheduling and school curriculum to maximize instructional time and improve student achievement; however, this often times comes at the expense of recess, physical education, art, and music
classes. Research has supported that losing instructional time for physical activity during the school day does not negatively impact students’ academic achievement (Trudeau & Shephard, 2008). Various studies have shown that there are creative ways to incorporate physical activity into the school day, including the insertion of academic curricular elements within physical education classes (Demetriou & Honer, 2012; Faigenbaum, Farrell, Radler, Zbojovsky, Chu, Ratamess, & Hoffman, 2009; Vail, 2006). Some have suggested periodic breaks throughout the day, or extended time allotted for physical education classes. Other studies employed a variety of quantitative measures to confirm the relationship between student fitness levels, and improvement in academic achievement (Chomitz, Slining, & McGowan, 2009).

Among the findings related to physical activity and academic achievement was the influence of student participation in organized team sports during non-instructional time at school. In general, participation, or lack of participation, can impact students’ feelings of connectedness to a school or organization, and some studies also found slight improvements in academic performance. However, researchers did not attribute lifelong wellness to the competitive nature of the team concept. Organized sports teams were described by several researchers as different than wellness/physical education curriculum that focuses on lifelong health and well-being in a non-competitive, more educational manner (Debate, Gabriel, & Zwald, 2009; Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2009; Jonker, Elferink-Gemser, & Visscher, 2009; Maloney & McCormick, 1992; Sadler, 1992).

Physical activity and regular exercise have implications for weight management and health benefits, but in addition to these natural biological responses, a major impact
on how the brain is affected has been identified. For example, aerobic exercises were found to yield improvements in the neuroelectric functions in the brain and cause greater allocations of attention resources to working memory (Castelli, Hillman, Buck, & Erwin, 2007). Physical activity was also reported to stimulate neural development and create dense neuronal synapses and higher capillary volume (Chomitz et al., 2009). Hillman, Castelli, and Buck (2005) reported a strong connection between aerobic fitness and neuro-cognitive functioning, which is related to reaction times, psychomotor speed, processing speed, and increased dopamine levels in the brain. One study reported that during the process of exercising the prefrontal cortex (problem-solving area) of the brain is stimulated. This problem-solving area of the brain shows increased levels when learning complex physical movements (Sallis, McKenzie, Kolody, Lewis, Marshall, & Rosengard, 1999). The central nervous system was impacted by altering anxiety chemicals that dominate behavior. These chemicals are carried along finite numbers of neurological channels. During and just following exercise the chemicals such as endorphins, stress relievers, immune system boosters, and serotonin, mood enhancer, and energy elevator fill those channels and improve emotional and cognitive abilities (VanAndel & Austin, 1984). A meta-analysis of 18 studies on aerobic exercise and brain implications yielded positive statistically significant results in four areas of brain functioning; executive functioning (scheduling, planning, and working memory), controlled processing (automatization of response sequences), visuospatial processing (perceptual learning), and speed processing (places demands on simple reaction times) (Tomporowski et al., 2008).
Identification of the Problem

Schools have a limited amount of time during the school day to address all of the needs of students. In addition to measured curricular components, schools work to socialize and acculturate students in good decision-making processes, problem-solving skills, and working with others, as well as how to be healthy, contributing, productive members of society. In a struggling economy, districts must be creative and innovative in being as efficient and effective as they can with limited resources, yet still address the academic and some non-academic needs of students. For example, Gaus and Simpson (2009) recommended integrating movement into classroom activities throughout the day in five to 10 minute increments in an attempt to enhance a quality physical education program.

The purpose of this dissertation study was to assess teachers’ and administrators’ perceptions of, and to describe teachers’ and administrators’ experiences with, the implementation of a physical activity program during each school day. Teachers’ perceptions are important especially at the elementary level, because teachers get to know their students on a much deeper level, as the majority of the school day is spent with the same teacher. Teachers should be encouraged to tell their stories in terms of the whole child, and have the opportunity to share their perceptions and feelings regarding such a program’s impact on a child’s educational experience, as well as its effect on the culture and climate of the educational environment. It is difficult to determine which combination of variables effects a child’s educational experience and academic performance. Based on teachers’ perceptions of the program implementation, I predicted that themes would emerge indicating if the physical activity program experience was
perceived to have had a positive or negative impact on students.

**Physical Activity Program Description**

The physical activity program used for this study was designed around a limited 10-12 minute window available each day for implementation. The structure used included warming up, stretching, cardiovascular movement, yoga, and breathing on a daily basis. The breakdown of the structure was as follows:

- 1-2 minutes full body warm-up,
- 1-2 minutes full body stretching,
- 6-8 minutes cardiovascular movement to increase heart rate, and
- 2-3 minutes cool down including yoga/core strengthening/breathing.

There was a different program for each day of the week, to be repeated every week, but each day had the same structure and format for consistency. The program was implemented in one urban and one suburban elementary school.

**Purpose and Research Questions**

The purpose of the study was to document the process of a physical activity program implementation along with documenting the perceptions and experiences of teachers who participated in its implementation. A better understanding of the implementation process may help more school leaders and teachers consider implementing such programs for student and school benefits in the future. Comparisons between the urban and suburban experience provided valuable information in how to shape future programs of this nature.
Research Question One
What are teachers’ experiences implementing a physical activity program?

Research Question Two
What are teachers’ perceptions of the differences between primary and intermediate grade levels during the implementation of the physical activity program?

Research Question Three
What are teachers’ perceptions of how boys and girls react differently to a physical activity program?

Research Question Four
How did the individual teachers impact the implementation of the physical activity program?

Research Question Five
How do teachers describe students’ attitudes and behaviors just before and immediately following the daily physical activity program?

Research Question Six
What similarities and differences were there between the two cases?

Overview of Methodology
A qualitative case study approach was the method used to describe the experiences and perceptions of those involved in the implementation of the physical activity program. According to Creswell (1998) and Merriam (2002), case studies narrate descriptive stories of participants or observers, in thick, rich detail. These authors also explained that case studies typically involve a program, an event, an activity, or a specific group of individuals. This study examined two cases, an urban elementary school with a
high level of poverty and lower achievement scores on state standardized tests, and a suburban elementary school with a low poverty level and high achievement scores on state tests. The urban elementary school had implemented the physical activity program for a full school year prior to the study, and the suburban elementary school was beginning their implementation of the same program at the outset of my investigation. The principal from the urban elementary had worked with a children’s hospital in order to address the increased issue of child obesity in her school. The suburban elementary principal was interested in implementing a physical activity program to align with the school’s renewal plan that focused on health, wellness, and physical exercise. Both schools were attempting to address the issue of child obesity in hopes of creating well-balanced, well-adjusted, and well-educated students.

I secured background data for the two cases through state department of education report card information, along with data held on district student information management systems. The two cases involved in this study had different student demographics and were at different implementation points. The urban elementary school had used this particular physical activity program during the 2010-2011 school year, with the intention to continue its implementation in the 2011-2012 school year. Interviews with teachers and administrators were reflective in nature as to their experiences, and how they planned to change or alter the program based on these experiences and perceptions. The suburban elementary school implemented the same program used at the urban elementary the previous year with a few modifications based on understandings gained by the urban elementary during first year implementation. I used some of this information in the design process of the program for the suburban elementary school. I conducted
interviews with teachers and administrators from the suburban elementary school to gain insight to pre- and post-implementation perceptions and perspectives. Experiences and perceptions data were collected through the use of two different interview protocols. A Staff Interview Protocol, (See Appendices A and B), was created for the staff members who were implementing the physical activity program for the first time. A Principal Interview Protocol, (See Appendices C and D), was conducted for the principal of each school. Interview protocols contained three different question types, and in addition to the interviews, there were other data collection formats;

- informal conversation interviews, which used a spontaneous generation of questions and conversation flow, that allowed for casual discussion (Gall, Gall, & Borg, 2003);
- open-ended questions which were highly structured and relied on scripted questions asked in the exact same way for each participant, but also allowed for rich descriptive feedback from the interviewee (Turner, 2010);
- general interview guides, which were generally worded so that the same areas of information were collected (Gall et al., 2003); and
- field observations, (See Appendix E), of students’ interactions, attitudes, participation, as well as staff reactions, attitudes, and actions.

The cases were described using rich, descriptive detail to capture the experiences and perceptions of those involved in the physical activity program implementation. I analyzed the cases for common themes and then compared similarities and differences among perceptions and observations across both cases.
Limitations

The scope of this study was limited to one urban elementary school in a low-performing district located in the Midwest, and one suburban elementary school in a high-performing district also located in the Midwest. The physical activity program was nearly identical in format and content implemented at both schools. The program was not implemented at the same time at both schools. The urban school started the program one year before the suburban school; however, both schools implemented the physical activity program daily. The urban school continued to implement the program for a second year, simultaneous to the initial suburban school implementation, though they modified it slightly based on what they learned from the first year of implementation. The suburban school applied some of the modifications recommended by the urban school after their first year of implementation.

Consistency of program implementation in classrooms at both schools was controlled only in the sense that teachers used the same video materials in the program execution, and the program was implemented at a consistent time every day. My observations were designed to capture the relationship between the attitude of the teacher and student attitudes that might potentially have impacted the program implementation outcomes.

Biases that exist during research studies can have an impact on findings and interpretations of data (Merriam, 2002). My role as the primary researcher, observer, and interviewer, as well as my role in approaching the suburban school to ask for their participation, brought potential biases that need to be acknowledged. I am a supporter and advocate for improving health and wellness in all people. The positive experiences
that I had, during my own primary and secondary school years, created a selective attention to details that support my positive personal and professional opinions about the physical activity program. Such experiences have the potential to create a bias that can be addressed through implementing a consistent protocol for acquiring field notes (See Appendix E) to address consistent data collection (Creswell, 1998).

This study was limited in its ability to determine any causal relationships between program implementation and student learning based solely on teachers’ perceptions and experiences. Many variables affect how students function in school. These variables are connected to lifestyles and circumstances out of the schools’ control. Different ability levels, self-esteem, and motivational levels that students possess are additional variables that impact student achievement. These variables are different for each child, so reactions to the implementation of a physical activity program were likely to differ across children.

**Significance of the Study**

The purpose of this study was to describe teachers’ perceptions and experiences with the implementation of a daily physical activity program. The growing childhood obesity epidemic currently plaguing our youth cannot be ignored. The increasing demands placed on educators, schools, and districts to continuously improve student academic achievement impacts how schools use their time during the school day. Implementing physical activity programs at the start of the school day that take little time away from core curriculum and yield a positive impact for schools can be very beneficial. By investigating and describing participant perceptions across more than one demographic environment, implications for additional studies and future implementations
in particular environments can be more fully understood by educational decision makers, teachers, and researchers.
CHAPTER II

Review of Literature

This literature review is organized around theoretical frameworks and central themes found in the relevant literature regarding the impact of physical activity on students’ academic achievement. Physical education and daily physical activity have existed in the educational environment for decades. As curricular standards change, and educational environments focus more and more on academic results used to compare our societal accomplishments with global competitors, we, as a nation have lost sight of how the whole child has been impacted. According to the National Children & Youth Fitness Study, (NCYFS), at least half of youth today do not engage in physical activity appropriate to promote long-term health (Langford et al., 2003). This same study reported that as a nation, the Body Mass Index, (BMI), a measure of the body’s fat content to lean muscle mass ratio, rose 5% in our population of 18-29 year olds in just seven years. Furthermore, the NCYFS indicated that type-2 diabetes and childhood obesity are now the most commonly diagnosed physical health issues in children (Langford et al., 2003). A most alarming statistic offered by Hillman (2005) is that children between the ages of six and ten are suffering from episodes of cardiac arrest more than at any other time in our nation’s history. A single answer or cause for this epidemic was not acknowledged within the literature reviewed. Explanations ranged from the various forms of technology that keep children sitting in front of computers and televisions for longer periods of time than ever before, to the breakdown of interpersonal relationships created by the social-networking phenomenon. Regardless of the cause, this is an area that society can no longer ignore as declining global positioning for our country
slips, the cost of health care reaches astronomical historical levels, and the health and welfare of our children and their future hangs in the balance. Ehrlich (2008) stressed the importance of working with the whole child in addressing the issues surrounding the relationship between physical activity and wellness in children.

In order to improve the physical condition and direction of our youth, it is simply not enough to increase the amount of time devoted to physical education. Ehrlich (2008) suggested that any program aimed at changing an attitude, perspective, or way of life surrounding this topic must include a structured daily physical activity program; daily nutritional considerations, overall health education, physical education, counseling, and an environment focused on school health, as well as environmental health. Schools may not have the resources to address all of these issues. Elements of student wellness can be addressed by implementing a physical activity program on a daily basis to start addressing the physical, emotional, and psychological wellness of children (Coe, 2003). Coe provided the following descriptions to differentiate between physical activity, physical fitness, and exercise:

Physical activity is defined as any bodily movement produced by skeletal muscle that results in caloric expenditure. The term “physical activity” differs from the term “exercise” in that exercise is a subset of physical activity that is planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness. Physical fitness is often a result of a physically active lifestyle. Physical fitness is a set of attributes that people have or achieve that relate to the ability to perform physical activity. (pp. 6-7)
Theoretical Framework

There were several theoretical frameworks that emerged through the review of literature that were related to the impact that a physical activity program has on motivation, self-esteem, learning, biological/physiological responses, psychological responses, health/wellness, and students’ academic achievement. The frameworks set forth differed in perspective and were related to various learning styles, social/emotional development, and behavioristic approaches to education and learning. Burns (1995) presented the theory of learning as a relatively permanent change in behavior with behavior including both observable activity and internal processes such as thinking, attitudes, and emotions. Burns also suggested that sometimes learning does not manifest itself in observable behavior until some time after the actual instruction has taken place. Although Burns’s theory may be applicable in many situations requiring the learning of a task through repetition, it was criticized for its educational applications because higher-order thinking skills were typically not involved in the process of learning through repetition (Laird, 1985).

Social Cognitive Theory

Social Cognitive Theory offered the strongest connections and applications to the types of studies conducted throughout the research I reviewed. This theory explained how individuals acquire and maintain certain behavioral patterns. I uncovered definite parallels between the health sciences and psychological sciences in relation to this theoretical framework. The original Social Learning Theory was developed in 1941 by Miller and Dollard and was expanded by Bandura and Walters in 1963. Bandura went on to provide his concept of self-efficacy in 1977 (Bandura, 1997). Bandura explained that
Social Cognitive Theory provides a framework for designing, implementing, and evaluating particular programs. Glanz, Rimer, & Lewis (2002) explained that three factors, environment, people, and behaviors, are constantly influencing one another. He proposed that due to this triangular relationship these factors are not just individually influencing one another, but in addition, combinations of any two can affect the third.

Bandura (1986) explained Social Cognitive Theory in the following manner:

> In Social Cognitive Theory, the learner is viewed as thoroughly integrated with the environment within which he or she is learning. The learners’ cognitive responses, behaviors, and environment all work together to create learning. Learners observe models and build self-efficacy, their belief that they can accomplish the work modeled. Based on the learner’s understanding of why it is important to learn something and their belief that they can accomplish the learning, learners will then self-regulate their learning and become proactive in their efforts to gain mastery. This is integrating the learner into the social environment. (pp.18)

The following definitions offered by Glanz et al. (2002) are provided to help explain this conceptual model.

**Environment.** Environment is defined as those factors that are physically external to the person. They provide opportunities and social support. Environments can be social including family, friends, and colleagues, or physical such as the size or temperature of a room. (pp. 169)
**Behavioral capability.** Behavioral capability is the knowledge and skill that someone possesses in order to perform a given behavior. It promotes mastery learning through the building of skills. (pp. 169)

**Expectations.** Expectations are the anticipatory outcomes of a particular behavior. Modeling particular expectations provide positive outcomes for healthful behaviors. (pp. 169)

**Expectancies.** Expectancies are the values that a person places on a given outcome. Incentives are presented to change behavior so that it will have functional meaning. (pp. 169)

**Self-Control.** Self-control is the personal regulation of a goal-directed behavior or performance. Exercising self-control provides opportunities for self-monitoring, goal setting, problem solving, and self-reward. (pp. 169)

**Observational Learning.** Observational learning is a process in which behavioral acquisition occurs by watching the actions and outcomes of others’ behaviors. This includes the observing of credible role models of the targeted behavior. (pp. 169)

**Reinforcements.** Reinforcements are the responses to a person’s behavior that increase or decrease the likelihood of reoccurrence. Reinforcements promote self-initiated rewards and incentives or consequences. (pp. 169)

**Self-Efficacy.** Self-efficacy is a person’s confidence in his/her own ability to perform a particular task or possess a particular behavior. This is approached through small steps to ensure success in behavioral change. (pp. 169)
**Emotional Coping Responses.** Emotional coping responses are strategies or tactics that are used by a person to deal with emotional stimuli. These responses provide training in problem-solving skills and stress management. (pp. 169)

**Reciprocal Determinism.** Reciprocal determinism is the dynamic interaction of the person, the behavior, and the environment in which the behavior is performed. Multiple avenues to behavioral change are considered, including environmental, skill, and personal. (pp. 169)

Pajares, & Urdan (2002) concluded that Social Cognitive Theory is applicable and relevant for designing health education and health behavior programming. He explained that it is essentially connected to how people acquire and maintain certain behavioral patterns. Pajares recommended using this theory as a basis for providing intervention strategies.

**Research Regarding Physical Activity, Self-Efficacy, Self-Esteem, and Motivation**

The connections between the body and mind have been studied in many different ways over the decades. Medical studies have shown the positive benefits that physical activities and physical fitness have on the overall physical well being of the individual. These studies were documented with evidence and facts that have been proven repeatedly over time. Studying the impact and effects of the same physical activities and fitness programs on the mind, self-efficacy, self-esteem, and motivation and behaviors is much more difficult (Yu, Chan, & Sung, 2006).

Efficacy beliefs influence how people think, feel, become motivated, and how they behave. Bandura is a leading researcher in the field of efficacy and self-efficacy. His work primarily focused on the human self-regulatory processes that govern human
development, and he argued that effective intellectual functioning requires more than simply understanding factual knowledge and engaging in reasoning activities. Bandura (1993) also suggested that one of the most powerful components in any activity is the power of the individual’s belief about his or her own capabilities to exercise control over his or her own level of functioning. He explained that if students experience a failure, it weakens their self-efficacy beliefs and results in increased anxiety. Bandura postulated that if students were filled with self-doubt, they will feel that any efforts to change will be futile and do little to change their situation. He expanded his perspectives in 2001 to include efficacy beliefs that are linked to three domains of human functioning. These domains are classified as the academic domain, social domain, and self-regulatory domain. The academic domain is the individual conviction that one can successfully perform a given academic task at a designated level. The social domain is described as the idea of surrounding oneself with individuals that share common values and belief systems will support and reinforce individuals’ ideals and perspectives. The self-regulatory domain is connected to the ability to have open communication with parents and others regarding predicaments and issues outside of normal social or professional circles and advice is solicited in managing issues. Pajares, & Miller (1994) suggested that self-efficacy is differentiated from self-concept with self-efficacy being a context-specific assessment of competence to perform a specific task. He stated that self-efficacy is an individual’s judgment of his or her own capability to execute specific behaviors in specific situations, whereas self-concept is more directly related to overall perception of self worth.
Efficacy was reported to be impacted by many environmental variables including personal experiences, situations, physical activity, physical fitness levels, and overall mental wellness (Gao et al., 2008). A recent study conducted by Ogden (2006) reported that the United States has shown the greatest increase in overweight children in our country’s history, and that students are less fit now than 40 years ago. As a result, in recent years school physical education programs have attempted to reach all students in order to address this issue, with an overall idea of increased levels of physical fitness for all students (Levin, S., McKenzie, T., Hussey, J., Kelder, S., & Lytle, L., 2001). Part of this shift also involved a change in physical education classes based on building athletic competence to focus more on health-related fitness (Gao et al., 2008). In a study conducted in a suburban district in the U.S., 305 middle school students in grades six to eight participated in 60 minutes of physical education on alternate days in four-week units. The physical education program focused on adapting learning and activities to individual levels of ability in order to avoid student perceptions of incompetence. Gao discovered that students were more likely to participate when they believed that they could accomplish a particular task. This author also reported that students who felt efficacious were more likely to, (a) perform at higher levels overall, (b) try new behaviors, (c) to expend more effort on those behaviors, and (d) persevere longer when they encountered challenges. In the study conducted by Gao et al. (2008), data were collected from surveys and pedometer readings, along with strength/endurance tests. The results showed that students’ past experiences were a significant predictor of participation and motivational levels.
A study conducted in California involving 954,000 students in grades five through nine used FITNESSGram assessments and SAT-9 test scores in order to identify a possible relationship between physical activity participation and increased (a) brain function, (b) energy levels, (c) high self-esteem, and (d) its impact on academic achievement (Scheuer, & Miller 2003). In the research report, Scheuer relayed that there was a positive correlation between students’ performance on the FITNESSGram assessments and their overall performance on the SAT-9 test. This author explained that as students’ fitness levels increased, so did their performance on the SAT-9 achievement tests, indicating a possible link between fitness and academic achievement.

Within the literature I reviewed physical activity and physical education were purported to create anxiety in many youth, especially those who have not had positive experiences with either one (Treasure, & Roberts 1995). Part of the job of educators and schools is to provide students with the skills and appropriate motivations to achieve. As the concern over maintaining healthy lifestyles grows, it is important to foster and nurture motivation in students to participate in physical activities. Treasure and Roberts (1995) looked at the basic components of Achievement Goal Theory and its potential to enhance motivation through physical education. These authors found that by changing the focus of physical education to provide more experiences for personal growth instead of the competitive nature of traditional physical education programs, students were more motivated to participate in physical activities. For many years researchers interested in motivation have studied individuals’ perceptions of ability, as it is the variable that is used when one measures himself or herself against others.
Nichols (1984) described two goal orientations, task and ego, differentiated as personal theories of achievement. Task orientation was defined by Nichols as a conception of ability that focuses on developing and learning new skills in order to master a task. The ability of the individual is based on putting forth maximum effort and is self-referenced. Nichols described ego orientation as a conception of ability that focuses on demonstrating success in learning new skills with minimum levels of effort and by outperforming others. These orientations are pertinent to the physical education/activity experience because they drive individual motivation. Ames and Archer (1988) explained that if a student is good at something, he or she wants that to be noticed, so the motivation to perform the task grows so that acceptance and recognition increases. If a student works hard to achieve a task, the same is true of wanting that effort to be acknowledged. These authors reported that the inherent nature of physical education is the competition factor. They believed that it is the role of the physical educator to help improve student motivation by using varieties of tasks, and creating a climate in which demonstrated ability is based on personal improvement and effort; this improves student motivation.

There are many connections linking participation in regular physical activity and health improvements. There are also perceptions that indicate that spending time on physical activities during academic instructional time interferes with academic growth (Tremblay, Wyatt, & Williams, 2000). Additional recent research indicated that there are higher levels of academic learning per unit of class time for students who are physically active, and a strong relationship was reported between student participation in physical activities and student self-esteem (Gruber, 1986: Shephard, 1997).
Tremblay et al. (2000) conducted a study in New Brunswick, NJ, involving fifth and sixth grade students and utilized a questionnaire to ask students questions pertaining to the academic and classroom social climate in their school, along with questions about their family background. The questionnaire/survey also asked students about their levels of participation in physical activities, Measures of the affective domain, including self-esteem, were also administered during the study. The physical activity probes asked students about the types and duration of particular physical activities they engaged in. The findings showed that there was a positive relationship between students’ physical activity levels and their self-esteem indicators. This was the case even when socio-economic status was factored into the equation.

Shephard (1997) described a study he conducted in 1950 to determine the impact of a program involving taking daily supplements and participating in physical activity each afternoon during the school day. This study used a control group and a treatment group. Although instructional time for the treatment group was reduced by 26% to account for the physical activity time, the findings indicated no statistically significant difference in academic performance. Teachers reported that students in the experimental group were calmer, more attentive in class, had better attendance and had fewer discipline problems during the study period.

A six-year longitudinal study exploring the relationship between academic performance and increased physical activity involved a sample size of 546 students and the addition of one hour per day of physical activity during the school day. An experimental design including treatment and control groups was utilized. Students in the experimental group engaged in the physical activity program resulting in a 14% reduction
in academic instructional time. The researchers reported that students in the experimental group outperformed students in the control group on measures of academic achievement. Although a true causal link could not be established, teachers reported that children in the experimental group were better behaved, were more academically motivated, displayed higher levels of self-esteem, and more self-confidence with the increase in physical activity (Tremblay, Inman, & Williams, 2000).

Trudeau and Shephard (2008) compiled and analyzed 16 studies involving physical activity programs across two different categories in order to identify common implications reported across the investigations they reviewed. These studies utilized differing physical activities, age ranges, and varied in the frequency and duration of physical activities or sport programs implemented. Trudeau and Shephard discovered that the researcher who conducted all 16 investigations reported similar themes within their results. All of the studies included some combination of elementary aged students in grades kindergarten through six. Sample sizes for the studies ranged from 24 to 655 students. The physical activity programs implemented ranged from 19 additional minutes of physical activity per day up to 70 additional minutes per day devoted to physical activity of some kind. Some of the activities involved structured time, and others used a combination of structured and unstructured time. A number of the programs involved sports. In 16 studies reviewed by Trudeau and Shephard attempts were made to control for specific variables, whether it is socio-economic status, gender, family structure, or other demographic variables. Seven of these studies relied on quasi-experimental designs, meaning that they were similar to true experimental design, but they lacked the key ingredient of random assignment, and examined the impact of student participation in
sports, physical education, and physical activities. Nine of the studies were cross-sectional. Many subjects participated at the same point in time. Regardless of the variables considered, the number of student participants, or the duration/type of physical activity implemented in the studies reviewed, Trudeau and Shephard discovered the following themes that consistently emerged across them:

1. Students who self-identify with their school, are a part of a team, club, or particular extra-curricular activity, have lower levels of misconduct.
2. According to student self-reports, or teacher observations, students who engaged in physical activity regularly reported higher levels of concentration.
3. Students who experienced emotional problems prior to the physical activity displayed fewer disruptive episodes/behaviors when they participated in the program of physical activity prior to attending academic classes.
4. Students’ self-esteem, self-image, and overall emotional well-being improved for all participants regardless of the specific physical activity.
5. Cognitive functioning was perceived as improved, especially in students younger than 11 years old.
6. Participation in school sports or physical activity programs within schools was an overall predictor of increased overall academic achievement.

Although studies reviewed by these authors varied in focus and variables, all 16 reported connections between student involvement in physical activity and a change in student attitude towards school and learning in general.

A number of studies linked the body’s physiological reaction to physical activity, exercise, and psychological wellness. Ismail and Trachtman (1973) connected the body’s
physiological reactions to physical activity with Locus of Control Theory. These authors explained that this theory is based on the idea that people involved in physical activity develop a sense of control over themselves, creating a sense of well-being and improved self-concept. The improvement of self-concept was previously found to promote higher levels of school engagement by Van Andel in a study conducted in 1984.

Hilyer and Mithell (1979) conducted a 10-week study involving three groups of college students in which one group engaged in physical activity along with counseling, a second group participated in only physical activity, and a third group, serving as a control group did not engage in physical activity. Based on data collected through interviews, these researchers reported that following the implementation of the physical activity there was a major increase in students’ self-concept, a sense of mastery, and an increased sense of control over self and environment, regardless of actual improvement in level of fitness.

Culturally speaking, Chinese society, specifically parents, place great pressure on children to demonstrate a very high level of academic achievement. In this culture academic achievement takes priority over the physical and psychological well-being of children (Yu et al., 2006). A study conducted by Wong, Weist and Cusick (2002) involved 333 Chinese children between the ages of eight and 12. This study included high academically achieving athletes, high academic achievers who were not athletes, and athletes who were not high academic achievers, in an attempt to determine which group had the highest level of self-esteem. The assessment instrument administered to students contained questions regarding the types of physical activities they were involved in, the times of day they engaged in them, along with the duration and frequency of these activities. These authors reported that the students’ physical activity levels were not
significantly related to their academic achievement; however, participation in physical activity was related to student conduct and self-esteem. The relationships described in this study indicated that based on similar levels of physical activity reported, boys experienced an improvement in self-esteem but girls did not. However, girls had higher overall levels of academic achievement. One bias presented by the authors in their report of this investigation was described as primarily cultural, because the Chinese culture is far less supportive of girls participating in physical activity, and this was likely reflected in their reported levels of self-esteem following the physical activity. In this case, higher academic achievement improved self-esteem, and higher levels of physical activity improved self-esteem, but there was no significant relationship to physical activity participation and increase in academic achievement (Wong et al., 2002).

Physical Activity, Health Implications, Biological Response, Learning, Structure

Physical activity and exercise have well-documented implications on the overall health and wellness for individuals who engage in this type of activity on a regular basis. The health implications found by researchers to be impacted by physical activity are related to the human body and its natural biological responses to the physical activity. Coe (2003) asserted that physical activity can protect people from getting chronic diseases such as dyslipidemia, an elevation of bad cholesterol and fat levels in the bloodstream that can cause heart disease, hypertension, obesity, impaired glucose tolerance, high blood pressure, (a condition closely related to the potential of causing strokes), and overall sedentary behaviors. The fitness movement in the 1980s focused on overall health and wellness and sparked a greater level of interest in research related to the
psychology of exercise, and the effect of exercise and physical activity on various psychological processes (Tomporowski, Davis, Miller, & Naglieri, 2008).

Biological responses to physical activity that interest educators the most involve what occurs within the brain chemically and physiologically to potentially impact a student’s experience at school. These biological responses impact the brain, body, social-emotional, and psychological condition of the child, which can impact the student’s ability to learn and engage in academically productive behaviors (Vail, 2006). During physical activity, there are chemicals released in the brain that have different functions. Endorphins are released in the brain in different quantities related to the amount of time spent in vigorous physical activity. As these endorphins are released in the brain, they play an important role in reducing stress, decreasing the desire to overeat, improve the body’s overall immune system, and provide an increased level of energy (Rhodes, 2003). Serotonin, also released in the brain during physical activity, works to improve mood while at the same time decreasing the risk of heart disease. Brain Developed Neurotrophic Factor, or BDNF, is a chemical in the hippocampus that increases during exercise. This chemical controls learning and memory in addition to producing and protecting the neurons that strengthen brain synapses (Rhodes, 2003; Tomporowski, 2008).

A theory was developed following a study conducted in 1978 by Schwartz, Davidson, and Goleman. This theory linked biological responses to physical activity and how the brain and central nervous system worked together to carry various anxieties along a finite set of channels through the body. These channels can be dominated by various chemicals in the brain and initiate particular physiological and psychological
responses. If the channels are dominated by depressive or anxiety-stimulating chemicals, the results are an anxious response. Physical activity has a cleansing effect on these channels by creating a neutral experience within them, and this decreases anxious or depressive feelings.

Types of biological responses have been found to be influenced by different types of exercises and physical activities. Brain Gym activities, developed by Paul and Gail Dennison, are performed slowly and use cross-lateral movements, similar to those used in Tai Chi. These movements allow both brain hemispheres to work together to enable the organization of brain functions (Vail, 2006). Complex movement sequences, common in some aerobic activities, have been reported to stimulate the prefrontal cortex of the brain, which is a major problem-solving area of the brain (Sallis, et al., 1999). These authors also conducted studies in 1997 and 1998 using laboratory rats and aerobic type activities, and revealed that rats that engaged in regular physical activities of varied durations possessed a greater number of neural connections and more brain capillaries than sedentary rats. In addition, the physically active rats showed improvement in attention due to elevated neuro-hormonal mechanisms.

Another study conducted in 2005 used seven categories of measurement (perceptual skills, intelligent quotient, academic achievement, verbal tests, math tests, memory, and developmental readiness) to connect cognitive processing to the neuro-electric patterns in the brain, specifically Event-Related Brain Potentials, or ERP (Hillman et al., 2005). This study showed that participation in aerobic activity increased the stimulation of this response and that it increased P3 amplitude and latency, which is connected to attention and working memory.
Additional attempts to connect how students perform and engage in scholastic endeavors involved studies that analyzed students’ existing physical fitness levels and attempted to compare these to performance on state standardized tests. A study conducted by Chomitz et al., (2009), involving just under 4,000 students in grades kindergarten through eight, used Body Mass Index (BMI), student weight, strength measurements, and overall fitness scores to compare student performance on standardized tests in English and Math. Students were assigned scores based on their fitness performance in five categories: (a) cardiovascular endurance, (b) abdominal strength, (c) flexibility, (d) upper body strength, and (e) overall agility. Standardized tests were used as academic achievement measurements. These researchers found a positive relationship between students’ fitness scores and achievement on state assessments. The positive relationships reported were limited to the subjects assessed on the standardized assessments (reading and math).

Gibson, Smith, and DuBose (2008) conducted another study involving 4,905 students that looked at the biological response of Body Mass Index (BMI) and implemented a physical activity across the curriculum, also referred to as a (PAAC) program called Take 10. This program utilized 10-minute increments of physical activity at various points throughout the educational day. The program included an additional 90 minutes per week of physical activity incorporated into the educational schedule. The overall goal was a reduction in student BMI ratings, and this had a measurable impact on student attitudes, teacher attitudes, and an increased level of student engagement on curricular components.
Similar to the study conducted by Chomitz et al. (2009) on existing fitness levels and student engagement in cognitive activities, Castelli et al. (2007) conducted an investigation in Illinois involving two urban elementary schools involving third and fifth grade students. This study used Fitnessgram, a program designed to measure various components of students’ fitness, such as strength, endurance, and cardiovascular fitness, in conjunction with another program, PACER (Progressive Aerobic Cardiovascular Endurance Run), to establish fitness levels of students. The sample of 259 participants represented various demographics. State assessments were used to compare various fitness levels to academic abilities. The element of difference in this investigation compared to the Chomitz et al. (2009) study was an additional measure that identified the type and duration of physical activity, as well as the hypothesis that students’ fitness levels might also impact student academic abilities. Castelli et al. (2007) reported that students who exhibited higher scores on the aerobic endurance measures also obtained higher scores on the standardized assessments. These researchers also reported lower scores overall for students who had elevated BMI scores. The Castelli et al. (2007) study results served to support previous arguments that students with greater aerobic fitness levels have more effective neuro-electric profiles as shown on stimulus discrimination tasks, in addition to engaging in more appropriate behaviors, and faster, more accurate reactions within working memory (Kramer & Hillman, 2006).

A meta-analysis conducted by Hillman et al. (2005) involved 16 independent studies that relied on true experimental designs indicated that there was a positive relationship between physical activity (various types, frequency, and duration), and cognitive functioning in school-age children. Another meta-analysis completed by
Tomporowski, et al., (2008) on 18 different studies that focused on four areas of cognitive processes; executive functioning (scheduling, planning, working memory), controlled processing (automatization of response sequences), visuospatial processing (perceptual learning), and speeded processing (places demands on simple reaction times). These researchers revealed that aerobic exercise, specifically, had a large positive effect on cognitive performance. These authors suggested that this effect is directly tied to the capacity to learn.

Learning was described in the literature as a behavioral change that results from situational experiences rather than genetic development. Motor learning involves those movement behaviors that are acquired through general practice and experiences (Sadler, 1992). The studies conducted by Sadler compared the health impact and fitness levels of students to cognitive functions and executive functioning. Body composition, physiology, and psychology all played a role in the cognitive functioning of individuals. Cognitive functioning was related to both academic achievement and behavior.

An additional biological response encountered in various studies about how the brain and body react to physical activity involved students at the onset of puberty (Chomitz et al., 2009). This study involved levels of dopamine and endorphins released in the brain. It also considered the physical maturity of areas of the brain, specifically the underdeveloped hippocampus in preadolescent children (Hillman et al., 2005). As preadolescents transitioned into phases of puberty, self-reported levels of activity changed. There was an increase in body fat, and this had a negative effect on motor performance and motivation. During pubertal development, early maturation caused an increase in sedentary behaviors in middle school girls, but not in high school girls, and
not in boys at all. An Amsterdam study revealed that during biological maturation, late bloomers were more active than early maturing youth (Coe, 2003). A study conducted by Scheuer and Mitchell (2003) involved adolescents during this transition phase. It was discovered that sustained periods of physical activity (over 20 minutes) not only increased cerebral blood flow, but also increased body hormone levels.

Anxiety and depression in adolescents continues to be a growing issue. The research supports that a reduction in psychosocial responses related to anxiety and depression was strongly associated with increased physical activity during adolescence (Chomitz et al., 2009). As physical fitness increased, there was a measured reduction in reaction to emotion. There were also reported improvements in sleep patterns. Students that were more physically fit had slower heart rates, had lower blood pressure, and reduced levels of cortisol released in the brain. Cortisol inhibits rational thinking, and this created a more balanced psychological disposition, including the reduction of anxiety (VanAndel & Austin, 1984).

Physical education programs contain their own body of knowledge, and are different than athletic programs because they are focused more on producing capable and productive people contrary to athletics that promote competition between individuals (Sadler, 1992). The structures of physical activity and physical education programs are extremely varied. The literature that I reviewed indicated that these structures made it difficult to determine if there were optimum thresholds of physical activity and intensity in terms of benefits gained (Coe, 2003). Sadler (1992) explained that the health benefits of any structured physical activity program should contain elements that address cardiovascular endurance, muscular strength, endurance, and flexibility for total body
impact. The research also supported that regular intervals of physical activity (three to five times a week), and sustained duration during activity were necessary for any physical and/or emotional benefits. The importance of using qualified, highly-trained, physical education specialists to work with students was stressed. The results from studies that have evaluated similar programs implemented by individuals with varied degrees of expertise, experience, and education yielded strong positive relationships associated with program implementation by experts. The more education, training, and experience a facilitator had, the better the students achieved, no matter what the performance measure (Sallis, et al., 1999).

School physical education programs were the most widely available resources for promoting physical activity, health education, and guiding students towards decisions to enable healthy life habits. Langford and Carter (2003) explained that physical education programs needed to contain components that not only educated students about good physical fitness techniques, but the programs needed to contain components that addressed the emotional and mental health needs of students, as well as elements that addressed nutritional choices for an overall wellness education. A large study conducted in Korea involved a sample size of 6,463 fifth, eighth, and eleventh grade students and involved gathering data through surveys. The study involved evaluating students’ eating habits including types of food and frequency. There were also data collected regarding students’ physical activity habits and fitness levels. The results of this study revealed statistically significant connections between students that made healthier food choices at regular durations and their performance on fitness tests. Also statistically significant was
the connection to the healthier food choices, the fitness levels and academic performance in school (Kim, et al., 2003).

The studies and literature referenced indicated that implementing physical activity programs and improving the quality of physical education programs in our schools has not had negative effects on the performance or engagement of students in the classroom. The study results supported health benefits of physical activity, and the positive biological responses that had positive correlations to the coping ability of youth. Creating the ideal program would involve more research, and would involve a total wellness perspective to address not only increased and improved physical activity, but also nutritional education, and social/emotional wellness.

**Physical Activity and Gender Differences**

Based on the literature that I reviewed, physical activity, exercise, and sports participation had different implications for males and females. Debate et al. (2009) conducted a study that focused on specifically designed sports programs and physical activities for adolescent girls. Culturally speaking, in most countries, females were portrayed as more frail, fragile, and less physically strong than their male counterparts. They described this as a prominent cause in females’ perceptions of themselves as weaker, with lower self-esteem levels. This impacted females’ commitment to health and wellness. These researchers explained that despite all of the known benefits of physical activity, whether physical, mental, emotional, or social, females, across all age groups, were less physically active than males.

Gender differences connected to sports participation and physical activity engagement were addressed in a study by Fox et al. (2009) and focused specifically on
differences between middle and high school males and females. The researchers studied a sample of 4,746 middle and high school students and discovered that one-half to three-fourths of all middle school and high school students in this study participated on at least one sports team. Middle school males had the highest level of sports participation while high school females had the lowest level. What remained the same was that boys and girls that participated on an organized sports team showed an increase in their grade point averages. More males showed increases because more of them were associated with athletic sports teams.

A New Brunswick study conducted by Tremblay, et al., (2000) considered a sample of 6,900 grade six students and how various aspects of home and school environments affected attitudes, behaviors, and school achievement. This study showed that, based on the elements of social climate within classrooms and school, and family background, females had much lower levels of self-esteem. When additional physical activity was implemented, this changed, and there was a balancing out of self-esteem and motivation levels between both males and females.

A longitudinal study conducted by the Centers for Disease Control and Prevention (2002) involved 5,316 students in elementary grades kindergarten through five. The study was conducted to determine the effects of participating in physical education activities for two different time frames. One physical activity program was 70 minutes or more of physical activity per week versus 35 minutes or fewer per week. The results of this study revealed no change in males’ academic achievement regardless of the program in which they were involved. This was not true for females. Females in this study that
participated in 70 or more minutes of physical activity per week showed gains in academic achievement over females that participated for 35 minutes or fewer per week.

Trudeau and Shephard (2008) conducted a study in Canada involving third grade females. He compared females that were considered obese to their same-aged peers that were considered average or height/weight appropriate. Although there was not a large difference in the academic achievement between the groups, females that were considered more obese exhibited more socially inappropriate behaviors such as arguing, fighting, sadness, and loneliness. This connected to the research that indicated females’ feelings of their own value and self esteem played a large role in their overall mental and academic well-being. This research also supported the need for programs that involved social/emotional coaching in addition to elements of physical activity (Debate et. al. 2009). Debate et al. (2009) studied a sample of 1,034 females who became involved in two such programs, Girls on the Run and Girls on Track. These programs were designed with sports program components aimed at getting females interested in physical activity, while also providing gender-specific life skills. Both programs had a curriculum that promoted positive emotional, social, mental, and physical development and were both 12 weeks in length. The findings from this study indicated a strong connection between a sense of well being and a commitment towards future physical fitness and healthier lifestyle choices.

The Debate et al. (2009) study argued the significance of an overall wellness theme to physical activities, especially when considering the impact that it had on females. The Debate study did not involve any male students. A study conducted by Yu et al. (2006) in Hong Kong used a variety of measures and determined relationships
between physical activity and various points of performance. It revealed a great deal about the impact that cultural norms played on the gender roles within society. This study compared the physical activity levels of males and females to self-esteem, academic achievement, and behavior conduct levels. Females outperformed males in all categories except in the area of conduct. This was attributed to embedded cultural norms of Chinese society that focused strongly on academic performance, and less on athleticism and physical wellness. For females in Chinese society, it was not as acceptable to be highly engaged in physical activity. This was more expected from males in the population. As a result, increased physical activity in females led to lower self-esteem and greater incidents of inappropriate conduct in the classroom. This study revealed the significance of cultural norms and the different values that societies place on particular activities and how they were valued differently based on gender.

**Physical Activity and Academic Achievement**

Much of the literature I reviewed focused on connections between physical activity participation and improvements in academic achievement. Studies on this topic spanned the world, used samples varied in size and scope and included individual grade levels at particular schools to several grade levels for entire districts. Although some positive correlations have been small, others were statistically significant and have had other student benefits that warranted additional research in this field.

A study conducted in Western Europe by Balding (2001) involved 1,400 students in grades five through seven and used surveys to inquire about types of activities students were involved in, and duration and frequency of particular activities, including classifications of whether or not the activities were organized athletic teams. This study
highlighted the shift in perspective about types of activities youth are interested in and will participate in when given the opportunity outside of the physical education classroom. When students participated in activities of their choice (roller-blading, martial arts, skateboarding in males, and basketball and football for females) participation and overall fitness levels increased.

Student fitness levels were used to determine if there were characteristics common to specific levels of academic achievement. Fitnessgram, (used as a fitness level measurement in many studies), was also used in a study conducted by Chomitz, Slining, and McGowan (2009) involving 1,841 students in grades four, six, seven, and eight in a district classified as an urban district. The five tests used in Fitnessgram were categorized as endurance cardiovascular test, abdominal strength, flexibility test, upper body strength, and agility. This study used BMI scores that were collected using a standardized protocol. The fitness measures were scored based on the number of fitness tests that students passed. Standardized test scores, raw passing and non-passing scores in English and Math were used for academic measures. The statistical analysis indicated that student fitness levels were strongly related to academic performance on standardized tests, specifically Math more than English. The results indicated that the more fitness tests a student passed, the higher the achievement score on the test.

Several studies that involved large student samples obtained results that were generalized over populations with similar circumstances, and three large studies that involved similar age groups of students, had similar findings in their research. Dwyer, Sallis, Blizzard, Lazarus, and Dean (2001) studied 7,961 school children between the ages of seven and 15 and considered various measures similar to that in the Fitnessgram
program, found that cardiorespiratory endurance levels were most positively related to academic performance. A similar study in Seattle conducted by Martin and Chalmers (2007) involved 5,847 students in grades three, five, six, and eight used The President’s Challenge Youth Fitness test, (a norm-referenced battery of 11 different areas of physical assessment), and used raw scores and converted them to percentages based on the norms. The Iowa Test of Basic Skills was used as the measure of academic achievement in this study. There was a small correlation between higher levels of physical fitness with higher levels of academic performance. This was not statistically significant in this case.

A New Brunswick study involving 6,923 grade six students considered relationships between physical activity, self-esteem, academic achievement, and BMI. This study discovered strong relationships between physical activity participation and increased levels of self-esteem, but small, not statistically significant positive relationships between physical activity levels and academic measures (Tremblay, Inman, & Williams, 2000).

Several research groups, (Tomporowski, Davis, Miller, & Naglieri, 2008; Trost, & Van der Mars, 2010; Trudeau, & Shephard, 2008), analyzed large scale studies conducted in various parts of the world, and after they reviewed various types of analyses used, (correlational, longitudinal, experimental), provided similarly themed reviews:

1. Involvement in physical activity had a weak positive relationship to academic achievement.

2. Participation in any physical activity, including organized sports teams, positively impacted self-esteem, motivation, and executive-functioning.

3. Duration and frequency of physical activity impacted the type and level of benefit to the individual.
4. Increased time spent on physical activity or physical education during the instructional day did not negatively impact academic achievement.

5. Causality for improved academic performance was not determined because of the complexity of the variables involved and potentially impacted by participation in physical activity.

A different perspective involved a study conducted by Maloney and McCormick (1992) at the collegiate level and addressed the ties between academic achievement and participation in college athletic programs. Thousands of students’ records were analyzed and considered everything from, (a) types of courses that college athletes took, (b) grades they earned, (c) time of year they were enrolled in those courses, (d) difficulty levels of the courses, (e) attendance, (f) type of sports team, (g) practice schedules, and (h) competition schedules. The findings explained that students that participated in non-revenue collegiate sports had the same level of academic achievement as their non-athlete peers, whether they were in season or not. The students that played revenue sports such as basketball and football did show a decline in GPA while in season and taking less rigorous courses than their peers.

Jonker, Elferink-Gemser, and Visscher (2009) conducted a study focused on athletic sports team participation at the secondary level and compared similar statistics almost a decade apart. The research team discovered that there were some inherent differences in perceptions and importance of pre-professional athletics between current times and a decade ago. They explained that more students participated in university athletics now than in the past, and had an overall higher academic performance. The results from their survey revealed that the majority of the students felt that it was due to
the intense training for their athletic sports and the amount of self-regulation needed to be successful that drove this difference. They cited the skills of problem-solving, constant decision-making, and self-motivation as instrumental in their academic success as well. Research limitations included that individuals that participated in athletic sports teams were more motivated than average students at the same grade/age level.

Hill and Gracia (2006) expressed that physical activity and sports team participation have well-documented benefits on the health of individuals. How physical activity and sports team participation impact cognitive development or learning was not completely understood. They argued that intelligence levels drew individuals to specific activities and/or athletic sports teams, and involvement in the activity enhanced cognitive ability or there could potentially be a third factor, such as personality, that can explain both characteristics.

Fox et al. (2009) compared sports team participation and participation in general physical activity and determined the various impacts of both on academic achievement. This study involved 4,746 middle and high school students. The instrument for this study was a project EAT survey (Eating Among Teens). This 221-item survey assessed the eating behaviors, physical activity, weight-related issues, and other components of adolescent health. Questions regarding sports team participation in addition to an LTEQ (Leisure Time Exercise Questionnaire) categorized student responses into one of three categories of hours spent on vigorous, moderate, or mild intensity physical activities during a particular week. There was a way to designate if the activity was related to sports team participation or not. Unlike most statistical analysis of achievement data, this study used self-reporting questionnaires regarding grading information. Results from this
study indicated that there was a positive relationship between sports team participation and moderately vigorous physical activity and academic achievement in high school males and females, but not so in middle school males and females.

Physical education programs have changed and evolved from programs that taught skills related to particular sports activities with yearly repetition of learned skills, into curriculum that taught important components of life-long wellness. Research reviewed supported the idea that anyone over the age of six should be engaged in at least 30 minutes of moderate intensity exercise or physical activity everyday (Langford, Carter, & LaGary, 2003). As districts continue to face budget cuts, Gaus and Simpson (2009) recommended that educators look for ways to incorporate more physical education and physical activity into their curriculum to make up for reductions in these programs, for example through the integration of movement into classroom activities. Adding five 10-minute sessions of activity throughout the day will provide health benefits equivalent to one 60-minute session meant to enhance, not replace physical education programs.

Vail (2006) explained that creativity in how a school day is used can have a major impact on the experiences gained by students. A physical education teacher incorporated core curricular content into his physical education class in order to promote higher levels of academic achievement. He used math problems on his climbing wall so that as students climbed the wall they problem-solved their way through the physical challenge of the climbing wall. Students solved 30-40 math problems at the same time. Students reported that physical education class became the class that all students got excited about all the time. Teachers reported improvements in academics, although causation for the
change was difficult to isolate. These activities supported the need for improved physical education programs. Physical education classes cannot be substituted with regular recess periods that also nurture social play opportunities. Recess experiences that incorporate physical activities in combination with social experiences are supported by Ramstetter, Murray, and Garner (2010) who reported that children, especially at younger ages, developed intellectual constructs and built cognitive understanding through hands-on, manipulative experiences that typically happened during unstructured, social play opportunities.

A study conducted by Coe (2003) tested a physical activity program involving 214 grade six students as a part of the Healthy People 2010 program. Students were divided into two groups, one with physical education classes during semester one, and one with physical education classes during semester two. Physical education classes were 55 minutes everyday; however, the average amount of time actually spent on physical activity was only 19 minutes. Height and weight were compared prior to the beginning of the study and following the treatment. This researcher used Fitnessgram and PACER data in his analysis. These programs measured cardiorespiratory endurance and body composition which, based on the research elements, were the most important measures of health-related fitness. The results of this study indicated that enrollment in physical education class did not affect how well students performed in school. This could perhaps be explained based on the average of only 19 minutes per class period spent on moderate to vigorous physical activity. Students enrolled in the physical education class during test administration showed a higher score on standardized assessments.
An extensive review of the previous research focused on physical activity and its connection to academic achievement framed the rationale for Prosser and Jiang’s (2008) longitudinal study. They claimed to be the first to conduct longitudinal studies after an initial three-year study, and professed to continue to monitor students throughout their lives. In addition to academic achievement, Prosser and Jiang indicated that they would measure, (a) cardiovascular structure and function, (b) blood markers of degenerative diseases, (c) psychological influences on lifestyle and health, (d) self-esteem, (e) stress, (f) anxiety, (g) motor control, (h) anthropometry and body composition, (i) components of bone strength, (j) fitness assessment, (k) measurement of physical activity, (l) family involvement, (m) medical history, (n) nutritional intake, (o) pubertal assessment, and (p) skeletal age. Their study results indicated a positive correlation between sustained physical activity participation over time and improvement in the physical condition of students overall.

Summary

The literature reviewed for this study focused on elements involved in students’ participating in various physical activities and how those activities impacted their overall health, emotional state, and academic achievement. The studies used a variety of instruments, assessments, and programs to determine the impact of physical activity on student behaviors and physical wellness.

The positive health implications associated with participating in physical activity are supported through the literature reviewed as lower body mass indices, reduced blood pressure levels, and increased levels of endorphins. The health improvements were associated with students’ increased ability to participate in physical activities including
organized sports. They had higher levels of endurance and were physically stronger and more alert.

The literature consistently supported the findings that students that participated in physical activities, even those activities associated with organized sports teams, had improved levels of self-efficacy, self-esteem, and motivation. Based on the studies reviewed, there was a positive correlation between physical activity and improvement in student self-perception. This positive self-perception helped students embrace learning and have a more positive attitude associated with the educational experience.

In addition to the physical and emotional benefits that physical activity had on students, the reviewed literature also revealed a difference in the impact the activity had on the different genders. The studies indicated that there were higher levels of improvements in attitude and self-esteem in females than in males. Males overall had higher levels of self-efficacy both before and after physical activity participation. In some cases, activity participation was shown to negatively impact females, especially in cultures where academic focus took precedence over physical prowess.

The majority of the literature reviewed attempted to measure the impact that physical activity had on the academic performance of students. Various assessments and tools used in the studies reviewed would indicate that there is a positive correlation between participation in physical activity and improved academic performance. Isolating other variables that could impact that improvement was an admitted barrier to the various studies. By continuing to study the phenomenon of learning, cognitive development and functioning, and physical activity, educators will help to isolate the most effective strategies to use to efficiently maximize the learning opportunities for our students.
CHAPTER III

Methodology

Purpose of the Study

The purpose of this study was to document the implementation of a physical activity program and to describe the program participants’ experiences and perceptions in order to develop a deeper understanding. The impact of physical activity on academic achievement and social/emotional development continues to be studied and analyzed as districts across the country search for ways to creatively address the increasing accountability standards for student academic achievement and wellness with low-cost, high-yield strategies. Chapter II focused on the review of research surrounding this complex topic. Authors acknowledged the difficulty in isolating the specific variables that impact academic achievement and students’ development through the implementation of various physical activity programs. I found little research that described the overall experiences and perceptions of those involved in implementing a physical activity program.

Qualitative Design

I selected a qualitative case study approach for a number of reasons. Qualitative research involves varied materials and methods that are used to describe routines and moments in individuals’ lives (Denzin & Lincoln, 1994). Van Maanen (1988) recommends the use of qualitative design when developing an understanding of the lived experiences of others. Because there are multiple perspectives describing experiences and perceptions of this program implementation, this approach to the study was most appropriate. This combination of multiple perspectives is a strategy to add rigor, breadth,
richness, and depth to inquiry (Flick, 2002). I also selected a qualitative design because
Merriam (2002) describes that qualitative studies use a) natural settings, (field-focused),
and b) the researcher as a key instrument of collecting data in the form of words or
pictures, in addition to developing a deeper understanding of the study participants’
perspectives and experiences and contribute to the knowledge base of the topic. Outcome
measures are more process than product and data are inductively analyzed. Participants’
perspectives and meanings are expressively described with detailed language and rich
description. Creswell (1998) argued that qualitative research questions typically start
with how or what so that there is a detailed topic description. Qualitative studies have
variables that are not easily identified and are used when there is a need to develop
theories around emerging themes. The qualitative approach was the most suitable for this
program implementation study (Bogdan & Biklen, 1992).

Case Study

I selected a case study because case study in qualitative research was defined by
Creswell (1998) as,

an exploration of a bounded system or a case, or multiple cases, over time
through detailed, in-depth data collection involving multiple sources of
information rich in context. Case studies tell detailed stories, rich in descriptive
text that enables readers to visualize the experiences. A case study is bounded by
time and place, and the case is a program, an event, an activity, or individuals.
They also involve elements of human experience. (p. 37)

Merriam (2002) also described qualitative case studies as analysis and
descriptions of a bounded phenomenon such as a program, an institution, a person, or a
process. I applied this definition to my selection process since this study involved reflecting on a program implementation and involved the descriptions, feedback, and perceptions of the participants in the study. I used two case studies to investigate experiences and perceptions involved in the implementation of the physical activity program.

**Research Questions**

The research questions posed within this study covered a variety of themes identified in the review of the literature in order to develop a deeper understanding of teachers’ experiences and perceptions as a result of implementing a physical activity program:

- **RQ1** - What are teachers’ experiences implementing a physical activity program?
- **RQ2** – What are teachers’ perceptions of the differences between primary and intermediate grade levels during the implementation of the physical activity program?
- **RQ3** - What are teachers’ perceptions of how boys and girls react differently to a physical activity program?
- **RQ4** – How did the individual teachers impact the implementation of the physical activity program?
- **RQ5** - How do teachers describe students’ attitudes and behaviors just before and immediately following the daily physical activity program?
- **RQ6** - What similarities and differences were there between the two cases?
In order to address effectively this type of question in a qualitative case study, Creswell (1998) recommends that researchers use multiple and different sources, methods, investigators, and theories to provide corroborating evidence.

**Setting and Participants**

This dissertation study was conducted in the natural setting of classroom environments. I collected qualitative data through observations completed across various classrooms, observations of students’ behaviors, and interviews of staff members individually during the physical activity program implementation. I conducted individual interviews due to scheduling conflicts associated with attempting group interviews and interactions. I expanded the number of interviews in order to establish credibility to themes that emerged through the interview process.

There were two primary differences between the cases. One was related to student demographics and the second difference was the length of program implementation. Participants in Case Study 1 had experienced a full year of implementation more than Case Study 2. Demographic data between Case Study 1 and 2 were varied greatly. Case Study 1 involved a large urban elementary school with a high level of poverty with 95% of students being on free and reduced-price lunch. Case Study 2 involved a large suburban elementary school with 5% of the students on free and reduced-price lunch.

I utilized a combination of purposeful sampling and convenience sampling procedures to identify possible study participants. I selected these methods of sampling based on Creswell’s (1998) recommendation. He suggested that purposeful sampling was important in order to find cases and situations that would help to validate previous
research with similar criteria. The urban elementary was selected based on this criteria in addition to the school being one that would participate in the study, as the principal was a professional acquaintance of mine. This also categorized the use of the urban elementary as a convenience sample. The selection of the suburban elementary was also categorized as both purposeful and convenience sampling. The suburban elementary was looking for ways to expand on their renewal plan of a focus on health and wellness, and this program worked well within their concept for expansion. The suburban elementary was also close enough to observe frequently with little inconvenience.

Case Study 1

The first case studied involved an elementary school in a large urban school district in the Midwest. This case enrollment was 350 students in grades Pre-kindergarten through five. The Students with Disabilities (SWD) subgroup for this school was 16% of the student population. Approximately 95% of students enrolled at this school qualified for free or reduced-price meals. This school was rated as being in Academic Emergency status on the State Department of Education report card for the 2009-2010 academic year. This rating was based on student academic performance on state standardized tests involving the curriculum that the state indicators expressed students should have mastered by the time the test is administered. This rating indicated that the school had not met those academic standards. State data also revealed a steady decline in students’ reading and math achievement scores in third and fourth grade along with a decline in fifth grade scores. This decrease was a three-year trend for this school with the most decline being shown between the 2007-2008 and 2008-2009 academic years. The state performance data indicated that there was an increase in math and
science achievement scores of fifth graders attained during the 2009-2010 academic year as compared to the 2008-2009 scores. In an attempt to address the continued declining scores, the school principal, a former physical education teacher, designed a short physical activity program. This program was to be implemented at the start of each school day involving all students. This school’s entire student population participated in the physical activity program on a daily basis. The program was intentionally structured as follows,

- 1-2 minutes full body warm-up,
- 1-2 minutes full body stretching,
- 6-8 minutes cardio, and
- 2-3 minutes cool down including yoga/core strengthening/breathing.

In order to reduce the monotony there was a different program for each day of the week, but each day’s program had the same structure and format for consistency. After one full year of implementation, staff interviews were conducted in an effort to describe their experiences with the program implementation and any perceptions related to changes in the data and to clarify teachers’ perceptions of how the program implementation impacted changes in academic performance data.

**Case Study 2**

The second case studied was at an elementary school in a medium-sized suburban school district in the Midwest. This school’s enrollment was 450 students in grades kindergarten through five. The Students with Disabilities (SWD) subgroup was 5% of the student population. Approximately 5% of students enrolled at this school qualified for free and reduced-priced meals. This school was rated as *Excellent* based on the State
Department of Education report card for the 2009-2010 academic year. Although the state achievement data revealed a slight increase in grade three reading scores, there was a decline in grade three math scores as well as grade four reading and math scores on the state tests. Grades five and six showed increases in reading, math, and science scores.

All students participated in a daily regime of a focused physical activity program at the beginning of the school day. This school’s entire population participated in the program. The program was structured identically to the program implemented in Case Study 1, with the differences between the two cases being that, (a) the interviews were conducted at the same time, but perspectives of those from Case Study 1 had developed over a year and one grading period as compared to Case Study 2, in which the perspectives were developed during a single grading period; and (b) the leaders in the videos in Case Study 2 were students.

**Data Collection**

Merriam (2002) suggested that in qualitative research, data analysis and data collection occur simultaneously in order to interpret appropriate findings and themes while information is current and fresh within the researcher’s experience. Data were collected using a variety of methods. Demographic and academic data were gathered in cooperation with building principals to provide additional baseline data to compare between schools. This information was reviewed to determine connections to themes that emerged from the study. Teacher participant interviews and observations were conducted to gather data related to perceptions of program implementation and its impact on students. Merriam (2002) recommended that when employing a case study research approach, multiple sources of data add to the transferability of findings and theme
validation. Detailed descriptions of the situations and circumstances were included to help the reader to understand the perspectives and experiences encountered by the study participants, and helped define this as a study appropriate for the case study approach.

Field notes recorded during classroom observations focused on describing students’ attitudes, behaviors, and interactions prior to, during, and following the physical activity program. In addition, teachers’ actions were observed and recorded (see Appendix E). Gall, Borg, and Gall (1996) suggested that observational research conducted by the researcher was usually flexible and did not need to be structured around a hypothesis. This method created the opportunity for themes to emerge. Merriam (2002) explained that observations could be categorized ranging from complete observations when the observer is unknown to those being observed, to active participant where the observer is participating while observing. Creswell (1998) suggested the use of an observation protocol that includes both descriptive notes (detailed description of what is happening in the environment), and reflective notes (thoughts and questions that occur to the observer at the time they occur). I analyzed my field notes in an attempt to compare my perceptions to those of the participants. I believed that similarities identified between the two might serve as a method of triangulation to build confidence in the accuracy of the emerging themes.

Four interview protocols (see Appendices A, B, C, and D) were used for staff interviews at both schools. The interview protocols used a combination of three different types of interview questions. The question types were informal conversational, general, and open-ended. *Informal conversational interviews* described by Gall, Gall, and Borg (2003) rely “…entirely on the spontaneous generation of questions in a natural
interaction, typically one that occurs as part of ongoing participant observation fieldwork” (p. 239). With this type of interviewing, there are typically no specific questions asked, which allows for flexibility, but unfortunately, these authors indicated that this type of interview lacks reliability. The *General Interview Guide* approach as described by Gall et al. (2003) was a structured approach to the interview process. These authors suggested using consistent questions that are deliberately worded so that the same general areas of information can be collected across all participants. Gall et al. went on to explain the General Interview Guide approach still allows for flexibility in how questions are posed, and the ability to ask clarifying or probing questions as needed. Turner (2010) characterized *open-ended interviews* as highly structured and reliant on questions that are identically worded, but constructed in a way that allows participants’ responses to contain as much detail and description as they desire to provide. Turner also suggested that it is important to use a structured protocol when conducting interviews so that there is clarity to the process for those being interviewed and it should include items that explain the purpose of the interview, format of the interview, approximate estimate of the time that it will take, in addition to how responses will be logged.

Interviews with the staff participants were conducted periodically to gather detailed descriptions of their experiences and their perceptions of students’ attitudes, academic engagement, academic achievement, interpersonal skills, and overall attitudes towards classroom activities. The purpose of recording and analyzing field notes was to use more than one data collection method in order to triangulate the data. As recommended by Creswell (1998) and Merriam (2002) I used multiple data sources and searched for convergent themes to provide a depth of understanding and clarity to the
research questions. The data collected for these studies represented various sources and perspectives and were designated in Table 1 and Table 2.
Table 1
*Data from Case Study 1 Pre and Post Program Implementation*

<table>
<thead>
<tr>
<th>Source of Data</th>
<th>Description of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Department</td>
<td>State Report Card, grade 3, 4, and 5 state indicators, assessment results, three year trends, performance index, value-added measures, adequate yearly progress by subgroup, percentage of students at each performance level, average daily enrollment, demographic breakdown, and school designation</td>
</tr>
<tr>
<td>Participant Interviews</td>
<td>Interviews consisted of subjective questions regarding teacher attitudes towards program and subjective opinions about student engagement and attitude towards program participation and implementation, discussions about noticeable behavior changes in students who are actively participating in the program, and the impact of program implementation on student academic achievement</td>
</tr>
<tr>
<td>Researcher Observations</td>
<td>Two observations per grade level during program implementation, excluding grade one, observing behavior of students and teacher prior to, during, and following program implementation, types of social/emotional interactions amongst student peers, student interactions with the classroom teacher, types of instructional activities immediately following program implementation, teacher attitude and reaction to program implementation</td>
</tr>
<tr>
<td>Principal Interview</td>
<td>Interview of principal including clarification regarding dialogue regarding program implementation fidelity, culture of school following program implementation, how program was communicated to school population, perceived issues with implementation, perceived benefits of implementation, recommendations for change in program implementation</td>
</tr>
</tbody>
</table>
## Table 2
*Data from Case Study 2 Pre and Post Program Implementation*

<table>
<thead>
<tr>
<th>Source of Data</th>
<th>Description of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Department</td>
<td>State Report Card, grade 3, 4, and 5 state indicators, assessment results, three year trends, performance index, value-added measures, adequate yearly progress by subgroup, percentage of students at each performance level, average daily enrollment, demographic breakdown, and school designation</td>
</tr>
<tr>
<td>Participant Interviews</td>
<td>Interviews consisted of subjective questions regarding teacher attitudes towards program and subjective opinions about student engagement and attitude towards program participation and implementation, discussions about noticeable behavior changes in students who are actively participating in the program, and the impact of program implementation on student academic achievement</td>
</tr>
<tr>
<td>Researcher Observations</td>
<td>Two observations per grade level during program implementation, observing behavior of students and teacher prior to, during, and following program implementation, types of social/emotional interactions amongst student peers, student interactions with the classroom teacher, types of instructional activities immediately following program implementation, teacher attitude and reaction to program implementation</td>
</tr>
<tr>
<td>Principal Interview</td>
<td>Interview of principal including clarification regarding dialogue regarding program implementation fidelity, culture of school following program implementation, how program was communicated to school population, perceived issues with implementation, perceived benefits of implementation, recommendations for change in program implementation</td>
</tr>
</tbody>
</table>
Site Selection and Bias Clarification

I have always been an advocate for physical activity. As a child, I was surrounded by music, as my father was a member of a five-piece band. This band rehearsed during the evenings and performed about twice a month at various locations throughout the city. I spent a great deal of time as a child dancing, and being very physically active. In school, I found it difficult to sit still, and was frequently disciplined because of my active demeanor and behaviors, at times resulting in being tied to a chair, which, by today’s standards would be an unacceptable practice, but at that time it was a strategy used by teachers in an attempt to settle students. As I entered high school, a single teacher, my choir director, recognized this behavior early and arranged for me to “take three laps” around the building just prior to her class everyday to help me burn off some of that energy so that I could focus during her class. I was successful in this class, partially due to my ability to stay out of trouble because of being better able to focus. I eventually went to college and majored in music. As a vocal music teacher at an urban high school, I found that strategies that helped my students focus for class involved some minor physical movements and breathing prior to focusing on the singing. I observed that students who participated in the show choir, (which incorporated dance in addition to singing), were more engaged, had more fun, were happier overall, and had a more positive educational experience than students in my other vocal groups.

As I continued down my educational path and moved into administration in the urban district and eventually to my current position in a suburban district, my interest in the influence of physical activity has never diminished. This interest continued to
increase as I began to suspect that there might be a correlation between students’ academic performance and their participation on one of our 32 athletic teams.

At a social gathering during the winter of 2011, I was talking with a friend who happened to be a principal at an urban elementary school as well as a former physical education teacher, and we were discussing various workouts and stumbled onto the topic of how to get kids more physically active. Through this conversation I learned that she had been trying to do that at her elementary school and was working with Children’s Hospital to implement a program. She indicated in this conversation that they had been implementing the program in the mornings for a few months, and she was excited about what she was seeing and hearing about the program. We discussed the program, its components, and reasons why various exercises were selected. As a result of this conversation, I began thinking about the possibility of initiating a physical activity program in my district.

My district holds administrator meetings at various points throughout the year. At one of these meetings, shortly after my conversations with the principal from the urban elementary school, we, as schools, were presenting our School Renewal Plans. We did this so that our colleagues from other buildings, in addition to our district-level administrators, were aware of the various initiatives that different buildings wanted to implement to improve their schools. One of our district elementary principals presented a renewal plan that focused on the overall health and wellness of students, staff, parents, and community members. Following this meeting, I approached this principal and discussed the idea of implementing a daily physical activity program that aligned with their renewal program, I explained that initiating and monitoring this process would also
provide a great opportunity for conducting a research study as I was approaching the dissertation phase in my doctoral program. She was excited about the possibility, and wanted to set up a meeting with her School Renewal Team, so that I could discuss the program, the process, and ideas for implementation. Prior to meeting with the suburban elementary group, I gathered information from the urban elementary principal about what she found worked well with the program implementation and what she would change with future program implementation.

In mid spring of 2011, I met with the suburban elementary School Renewal Team to discuss the program and its implementation in their building, and they were excited about the possibility. I moved forward with the planning and preparation needed for program implementation beginning in the fall of 2011. After more discussions with the urban elementary principal, who led the workouts in the video series for her school, I discovered that she changed the videos to incorporate students from her school to encourage more student buy-in for the program’s implementation during the next year. Based on this idea, I approached the structure slightly differently with the suburban school. After securing the video recording studio in my current building, and the appropriate assistance from staff and students who were familiar with the equipment, I met with the suburban school principal and discussed the process for creation of the workout videos. I decided that various teachers would lead the workouts and we would incorporate a few students, utilizing different students and teachers in each video in order to incorporate as many known people from the school as possible in the video series. The suburban principal agreed to assist in the collection of the appropriate consent and release forms for staff and students involved in the videos that would be used for the program.
The suburban principal selected the staff and students that were invited to participate in the video series creation. The appropriate forms were distributed and collected prior to program recording, so that students could legitimately participate in the creation of the videos to be used for the program.

This phase of the project worked out differently than planned, because more students were present for the recording of the video series than I anticipated. As this event occurred in the summer and parents and students arrived at the studio with the expectation of being a part of the video series, I changed the plan at that moment. I decided that the older students, after some coaching, would lead the workouts in the videos instead of the teachers. Using this plan allowed all the students who were present to participate in the workout videos. The actual workouts were structured the same as those used in the urban school videos. The videos were recorded and distributed to the suburban school prior to the program’s implementation at the start of the 2011-2012 school year.

Participants

The study participants I interviewed included teachers from each building who were implementing the physical activity program within their classrooms. Some of the teachers from the suburban school were members of the School Renewal Team who interacted with me in the spring of 2011 to discuss the opportunity of implementing the physical activity program. The average tenure of teacher participants interviewed from both buildings was just under 21 years (See Table 3). The names of the actual teachers have been changed for the purpose of maintaining confidentiality.
The two cases had different demographic bases. Of the observed classes, the urban school had 230 African-American students. The suburban school had 231 Caucasian students.
Table 3
*Interview Participants*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Name</th>
<th>Position</th>
<th>Grade</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>Ms. Auxier</td>
<td>Administrator</td>
<td>K-5</td>
<td>27</td>
</tr>
<tr>
<td>Urban</td>
<td>Ms. Anderson</td>
<td>Teacher</td>
<td>K</td>
<td>18</td>
</tr>
<tr>
<td>Urban</td>
<td>Ms. Bell</td>
<td>Teacher</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Urban</td>
<td>Ms. Carson</td>
<td>Teacher</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Urban</td>
<td>Ms. Dawson</td>
<td>Teacher</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Urban</td>
<td>Mr. Eubanks</td>
<td>Teacher</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Urban</td>
<td>Ms. Farley</td>
<td>Teacher</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>Suburban</td>
<td>Ms. Grouse</td>
<td>Administrator</td>
<td>K-5</td>
<td>30</td>
</tr>
<tr>
<td>Suburban</td>
<td>Ms. Garrett</td>
<td>Teacher</td>
<td>K</td>
<td>18</td>
</tr>
<tr>
<td>Suburban</td>
<td>Ms. Harris</td>
<td>Teacher</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Suburban</td>
<td>Ms. Inman</td>
<td>Teacher</td>
<td>2</td>
<td>18</td>
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<tr>
<td>Suburban</td>
<td>Ms. Jones</td>
<td>Teacher</td>
<td>3</td>
<td>27</td>
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<tr>
<td>Suburban</td>
<td>Ms. Kraus</td>
<td>Teacher</td>
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<td>15</td>
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<tr>
<td>Suburban</td>
<td>Ms. Layman</td>
<td>Teacher</td>
<td>5</td>
<td>22</td>
</tr>
</tbody>
</table>

**Summary of Teacher Interviews**

All teachers were asked the same interview questions according to building. The urban school had an additional question due to their difference of one year of extra implementation (see Appendices A and B). Their responses were audio-recorded and transcribed using the same methods. The questions asked of both building administrators...
were almost identical and similar to those questions asked of the teachers who were implementing the program within their classrooms (see Appendices C and D).

Classroom Observations

I conducted 25 classroom observations, with the goal of observing at least two workout sessions per grade level included in the study. The only variation from this intended plan was at the urban school. Due to scheduling conflicts and equipment malfunctions, the first grade observations did not occur. In place of this, two additional observations of second grade students were conducted to replace the planned first grade observations. A breakdown of the number of students observed by grade level, and by gender is provided in Table 4.
Table 4  
*Observations by Grade Level and Gender*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Grade</th>
<th>Number of Classes</th>
<th>Girls</th>
<th>Boys</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>K</td>
<td>2</td>
<td>16</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Urban</td>
<td>2</td>
<td>4</td>
<td>36</td>
<td>38</td>
<td>74</td>
</tr>
<tr>
<td>Urban</td>
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Both programs were designed with short warm-up activities at the beginning (both schools doing the same warm up), approximately three minutes in duration, a cardio portion in the middle (schools created different activities for this section), approximately six minutes in duration, and the same cool down activity, approximately three minutes in duration. Both schools implemented the program on a daily basis at all grade levels. There were five videos created for each school, one for each day of the school week. Demographically, based on observations, similar numbers of boys and girls were observed at each grade level, with overall numbers being approximately 130 girls.
observed at each school, and 118 boys observed at each school. This was by chance, not by design, as observed classes were based on availability.

**Data Analysis**

I employed a variety of data collection methods in this investigation. Creswell (1998) expressed that there is no single agreed upon method for the analysis of all the different forms of qualitative data. However, there were some common elements identified by prominent authors and researchers in the field. In the analysis of qualitative data, Bogdan and Biklen (1992), Miles and Huberman (1994), and Wolcott (1994) explained the following effective methods:

- Take notes in the margins of all field notes
- Write observation comments with reflective notes as the observer
- Transcribe interviews so all information is captured
- Develop visual representations, tables, charts, diagrams
- Identify themes and code them
- Build a logical chain of evidence
- Propose a redesigning of the study

These strategies were important in the process of reducing the data to what I considered useable for the current study. I began by creating a list of themes that emerged through the review of the literature. This was followed by interview transcript analysis in order to continue to identify possible emerging themes. Following the analysis of interview transcriptions, field and observational notes were analyzed and categorized into thematic units. After all interviews, field, and observation notes were coded and categorized, I
began telling the story through a detailed, rich, descriptive narrative of the experiences and perceptions relayed by the teachers who participated in the physical activity program.

**Trustworthiness and Transferability**

Triangulation of data was identified as important within qualitative research studies to ensure consistency and dependability (Merriam, 2002). The implementation of the same physical activity program across two different settings helped validate themes that emerged. Additional triangulation of data came from interviews, observations, and documentation from each school. Because both schools implemented the exact same program across all grade levels within each building, I was able to compare observational and interview data. I discovered a number of similarities and differences in the perceptions and experiences of the participants. When attempting to build trustworthiness and confidence in the transferability of knowledge gained in a qualitative study, Merriam (2002) recommended the following techniques,

- triangulation
- peer review
- observation and field notes
- extensive time in the field

Qualitative studies are often subject to criticism based on the high level of involvement of the researcher, who functions as an integral part of the data collection. Creswell (1998) indicated that this could be problematic in the integration of a bias in collected data. For these case studies I functioned as an interviewer, an observer, and a data collection resource, as well as constructing meaning from the data collected. This presents issues of bias and the integrity of the study can come into question. There are
techniques that may be used to address these issues before they become questionable by critics of any study. Creswell (1998) recommended using peer reviews, bias clarification, data collection audits and triangulation to address these limitations.

Qualitative inquiry seeks to apply the perceptions and experiences of those involved in the research in order to create new thematic classifications or to formulate new hypotheses for future inquiry. Much of social science research has been criticized due to the nature of the human experience and the constantly changing nature of the human psychological state. The trustworthiness and transferability of the case study is based on the detailed description of the human experience. By spending extensive time in the field, trust was built with the participants. The development of this level of trust led to more natural actions and activities on the part of the participants, which is important to supporting the trustworthiness and transferability of the study. This was critical because my presence as the researcher/observer may have had an impact on the behaviors of those being observed (Creswell, 1998). It was also important that my biases as the researcher were recognized and acknowledged. By exposing these as part of the analysis process, it provided the reader with a sense that I have paid close attention to detail and understand that there could potentially be outside variables that have had an impact on my interpretation of the findings.

Summary

This qualitative study was designed to contribute to the body of knowledge surrounding the experiences and perceptions of teachers and students during the implementation of a physical activity program. Site selection for the two case studies began with the acquired knowledge of a local school in a large urban district in the
Midwest that was currently implementing such a physical activity program that incorporated structured physical activity at the start of the school day for the entire population of 350 students in a Pre-kindergarten through five elementary school. This school had many social, academic, and community connected issues associated with it. Another school was selected with a completely different demographic base so that students with varied backgrounds would implement the same program so that emerging thematic comparisons could be made.

Data were collected using a variety of qualitative inquiry methods to address validity and reliability challenges. This data were organized into thematic categories and analyzed in order to validate previous findings from the review of the literature. Through this research study and findings, I hope that previous themes are validated from the existing research and determinations made for future studies.
CHAPTER IV

Results

The purpose of this study was to describe teachers’ perceptions and experiences with the implementation of a daily physical activity program. This chapter presents summaries of the stories and experiences as shared through interviews with staff and administrators in both schools that participated in the study. In addition to soliciting general information, the interview questions provided the participants with the opportunity to describe their personal experiences and perceptions of the physical activity program. The interview participants included teachers from all grade levels who implemented the daily physical activity program, and administrators who scheduled and facilitated support for the program’s implementation. In addition to the interview responses, descriptions of my classroom observations are presented.

This chapter is organized in sections to provide (a) an explanation of the site selection process, (b) individual participant background information, (c) teacher interview response summaries, (d) administrator implementation descriptions, and (e) observation summaries. Themes emerged as result of interviews and observations. Following the summaries of the interview and observation process, themes that emerged are presented to provide clarity to the research questions and what was learned.

I reviewed the interview summaries and observation summaries and the following research questions were addressed:

- RQ1 - What are teachers’ experiences implementing a physical activity program? (Themes 1 and 4)
• RQ2 – What are teachers’ perceptions of the differences between primary and intermediate grade levels during the implementation of the physical activity program? (Theme 2)
• RQ3 - What are teachers’ perceptions of how boys and girls react differently to a physical activity program? (Themes 1 and 3)
• RQ4 – How did the individual teachers impact the implementation of the physical activity program? (Themes 1, 4, 5 and 6)
• RQ5 - How do teachers describe students’ attitudes and behaviors just before and immediately following the daily physical activity program? (Theme 1)
• RQ6 - What similarities and differences were there between the two cases?

Findings

I based the study findings on the analysis of teacher interview data, principal interview data, and classroom observations. I organized the findings around the research questions that explored the participants’ perceptions and experiences regarding the implementation of the physical activity program. Primary themes that emerged from this analysis were based on comparisons of (a) urban vs. suburban elementary schools, (b) primary vs. intermediate grade levels, (c) differences between boys and girls reactions to the program, (d) teacher enthusiasm and participation, (e) activity variety, and (f) combining verbal with the physical activity.

Theme 1: Urban Elementary vs. Suburban Elementary

The study interview participants from both schools had similar backgrounds, years of experience, and class sizes; however, the student demographics were extremely
different. The structure of the classroom settings also varied between the two schools. I observed that the suburban school projected a more relaxed atmosphere and structure, with a higher tolerance of off-task behaviors, especially during the workout sessions. In contrast I observed the urban school to focus on a tighter program structure, without forcing or pushing reluctant students to participate if they were showing any lack of desire to participate or hesitation. My perception regarding this practice was supported by teacher comments during the interview process. The student populations in the classes observed were nearly equal with regards to gender across the various grade levels at both schools. The urban school had implemented a physical activity program the previous year. During initial discussions about participating in this study, I shared some information about the urban school’s experiences with the suburban School Renewal Team. Ms. Anderson provided a general explanation of the urban school’s first-year implementation. Her perceptions were supported by other participant comments. She stated,

The first year it was broadcast out of the office and no one really had a choice about it, it was coming on at 9:00 a.m. until about 9:10 a.m. That was how you started your day. As we’ve moved into this year, everyone received discs and you were permitted to do it whenever you thought it was best for your class. With the intermediate grades, the staff thought it would be better to use it a little later in the morning because that would work better for them, so that’s when they adjusted to do it. They thought that after their intense morning schedules it would help to refocus the older kids a little better.
The suburban participants explained that it was helpful starting off with a few recommendations from the urban school. It was important for the validity of the study that the implementation of the physical activity program was as similar as possible at both schools, so that experiences could be compared once perceptions were shared and observations completed. The suburban program itself, the video series, was modeled from the one used at the urban school the prior year. However, due to the wellness focus of the suburban school’s School Renewal Plan, the program was presented and communicated to the staff differently from the beginning. The urban school teachers found out that they were implementing the program when they arrived at school during the opening staff meeting of the first implementation year. Ms. Bell’s explanation was consistent with those of other participants from the urban school. She recounted,

Ms. Auxier just brought it to us and said that it was something that she wanted to do and it was very important to her and we were going to try it as a school. She did the videos and said that we were going to do it every day and we were going to do it in the mornings, and that we were to do the exercises with the kids. She instructed us to make it fun and so we did I guess. The staff had no problem with it, but there were many initial questions like what to do if a student didn’t want to do it, and things like that. Everyone seemed on board to try it.

According to the participant descriptions from the urban elementary school, the video was played each morning through the main system in the office and transmitted to the classrooms at the same time, which created some logistical problems for teachers. This was changed for year two of the program at the urban school. The urban school’s interview participants felt that younger students benefited more from the workout at an
earlier time of day than the older students. They described that the older students enjoyed the break after being engaged for part of the morning in academic activities. It allowed for more students to be a part of the program, since there was such a high number of students that were late to school on a daily basis, especially older students, and they would miss the work out altogether. Participants explained that the initial videos did not include students from the school itself, so other than the principal leading the workouts the students were not familiar with the people in the videos. This was changed in the year two video series. The second-year videos included students from the school, and were the result of staff and student recommendations given to the principal.

After having discussions with the urban school’s principal, I made recommendations about some of the logistics of implementation to the suburban school’s staff based on this information. Workouts were similar, including the same warm-up and cool-down activities, and duration of the middle cardio section. The School Renewal Team agreed at this meeting that they would also attempt to do the workouts in the morning, but it would be based on the scheduling of music, art, physical education specials, and the pull out intervention schedules for the various grade levels. The plan was explained to the suburban staff starting in spring of 2011, so that they were aware of the building plan for the upcoming fall implementation of the program. Participants expressed that the staff at the suburban school had a high level of buy in from the beginning because they were sufficiently informed of the upcoming program implementation. Interviews of staff members from the suburban school communicated consistent messages that aligned with comments made by Ms. Inman, one of the renewal plan committee team members, who shared,
I was a part of the renewal team so I knew about it straight away, and that we would be working with a program that had been done at another school. I had been helping to carry that message forward to the rest of the staff. We had already had some experience with Brain Gym activities at various times, so the staff just looked at this as the logical next step for our school. There was no reluctance from the staff at all, just some questions about implementation, some of which were easily answered at that time, and they knew they would be getting the additional information that they would need prior to program implementation. They trusted the renewal committee and building administration completely, and since they had an idea it would be starting in the fall (2011), they were ready for it.

Both the urban and suburban schools implemented the physical activity program in the fall of 2011 in a similar fashion. They had both (a) created videos involving a leader with two additional students from the school, (b) created separate DVDs for staff to use when they could work it into their daily schedules, and (c) presented staff members with the expectation to participate with the students in the execution of the daily exercises to help students buy-in to the program. Although the schools were similar in their overall approach to implementing the program, how they prepared students and carried the physical activity into other educational experiences varied based on my classroom observations and discussions with teachers. During my observations at both schools, students displayed elevated levels of excitement just prior to the daily workout; however, the urban school’s staff spent a great deal of time verbally motivating students and continuously encouraging them to keep them actively participating. In addition to
verbally motivating and encouraging students, there was more verbal correction and addressing of students exhibiting off-task behaviors before, during, and following the workouts at the urban school. This was not the case at the suburban school. Verbal motivation was not necessary to get students to actively participate in the program, and although students, especially boys, exhibited visible off-task behaviors, these behaviors were typically ignored by teachers.

As a common practice at the suburban school, there were activities before or after the workout that were connected to the physical activity. Some classes held discussions before or after the workouts, others engaged in writing activities connected to their workout experience, while still others completed charting activities connected to the workout. The charting activities involved students creating data points to track their progress on elements of stamina, accurate execution of the exercise movements, and their feelings at the end of the daily workout. This was accomplished through reflective guiding questions posed by the classroom teacher. The urban school consistently went straight from an academic activity or a transition time into the workout with little dialogue other than addressing inappropriate student behaviors. Following the workouts, the urban school classes generally went directly into another activity. There were only a few cases observed in which activities involved reflection on the physical activity just executed.

Differences in observed behaviors before the daily implementation at the primary level involved the addressing of student’s off-task behaviors. The urban school had slightly under triple the number of behavioral corrections, as compared to the suburban school, for all grade levels. During the physical activity, the number of times staff
addressed inappropriate student behaviors increased at all grade levels in both schools, but the gap was reduced to the urban school having approximately double that of the suburban school. Following the implementation of the program on the observed days, the number of off-task behaviors addressed by staff at the urban school dropped to a number very close to the suburban school. The number of suburban elementary behavioral corrections dropped to levels just slightly less to those numbers prior to the program implementation. This supports that the implementation helped to reduce the percentage of off-task behaviors, with a greater impact at the urban school.

Climate during implementation varied between the two schools. The observed suburban school teachers encouraged every student within the class to participate during the exercises. Though there was some resistance at times, especially at the intermediate grade level, students complied. Boys were out of control at times in terms of levels of exaggeration of the physical activities. These behaviors were not addressed by the teacher. The students were permitted to be silly and exaggerated movements as long as they were involved in moving. This was not the observation at the urban school. If students pushed back in terms of participating in the physical activity that day, they were not encouraged or expected to do so, it was left “optional.” Boys who exaggerated the physical movements to inappropriate levels were addressed by the teachers. There was less energy at the primary level in the urban school than there was at the suburban school. Teachers expected students to try to work through the movements with as much accuracy as possible.

One unique difference that I identified between the perceptions shared by urban and suburban school participants was that the urban students were excited to see other
students from their school in the videos. According to interview data this created an excitement at the primary level at the suburban school; however, at the intermediate grades, the students that led the workouts in the videos were made fun of, mocked, and made to feel embarrassed about participating in the video until the building principal intervened. The principal’s intervention that changed this behavior among students was her participation in the videos with the students, and discussions of importance of the program and what an honor it was for those students to lead those workouts.

The primary grade levels had differences between the two cases. There were differences in the ability of execution of the exercises between the urban and suburban primary grade levels. The primary students at the urban school displayed more skill in executing the movements within the workout with higher levels of accuracy. They performed the movement in tempo with the music, more accurately mirrored what was being done on the screen in front of them than was displayed at the same grade levels at the suburban school.

The facility differences between the schools were minimal. The urban school was newly built several years ago, and the suburban school had technology upgrades similar to that of the new urban building. The sizes of rooms were similar, and layouts of students’ desks varied from room-to-room within both buildings.

Theme 2: Primary grade levels vs. intermediate grade levels

Primary grades are often referred to as grade levels kindergarten through grade two. Intermediate grades are defined in this study as grades three through five. There were similar numbers of students at each of these grade levels between the two schools. Students at the different grade levels had different experiences with the implementation
of the physical activity program. Based on both observation data and participant responses, primary grade level students exhibited more excitement before and during the daily implementation than the intermediate level students. A supportive description was shared by Ms. Inman, who stated, “kids at this level are still at an age where they will do what you ask them to do without really questioning it, so they were on board right away with the whole idea.” Based on interview data from primary grade level teachers, students in the primary grades have different physical capabilities based on their developmental age. They do not have the same hand/eye coordination as their more developed peers in the intermediate grades and do not have the same level of endurance. Ms. Garrett explained,

We actually tried to slow the process down some. We had to back up and show them how to do each exercise and we had to practice them first. This isn’t a bad thing, it is just developmentally where they were. The videos were a tad too long as well. Students were not able to get through the length of the video.

Teacher participants explained that students at the primary level also responded well to the physical activity starting off the school day. The students were more excited and would exercise with so much energy that they exhausted themselves quickly. Teachers reported that this actually helped the students to stay focused on lessons for longer periods of time. Based on both observations and interview data students were described as very eager to participate and responded well to group encouragement. There was an observed increase in execution of the movement following encouraging words by the teacher directed at the whole class. Students were observed participating at high levels at the primary level, with little needed encouragement. The primary students at the
urban school had a higher level of ability to execute the exercises than their same-aged/level peers at the suburban school based on consistent observations in multiple classrooms. Also observed were the primary students at the suburban school working very hard with high levels of energy, but not typically in rhythm with the music. They appeared less focused on the particular movement, but were very focused on keeping energy high. The primary students noticeably executed movements in a delayed fashion, and took more time to catch on to a change in movement than their urban primary peers. The urban primary students were observably less frantic and executed actual movements with a higher level of accuracy than their peers at the suburban school. Some of this could be attributed to the fact that the urban elementary had been implementing the program for one year when the suburban elementary started. Ms. Anderson reported,

Most of the kids are really into it and enjoy it. They yell, ‘oh we are getting smarter,’ or ‘oh, look at me, I am getting better, I can do this so much better now.’ That is what I tell them, if we practice it, we will get better at it, and you can actually see their improvement, especially in the areas of balance, you notice that growth.

The experience at the intermediate level was different than that of the primary grades. Students participated with a lower level of enthusiasm as reported by teachers and as observed through class visitations. Students questioned the program more including its purpose and why they had to participate in the activity. Students at the intermediate level responded better to physical activities when they occurred either mid morning or early afternoon. Ms. Layman commented,
I actually see that our afternoons when we do our exercises and then start language arts right after that they get on task relatively quickly afterwards, and on the few afternoons that we missed it, the class became very chaotic. The students at the upper elementary grade levels developed better coordination, and were able to better execute the movements, especially those that were balance related. These students began to develop more self-awareness at this level as well. Physically larger students gravitated towards the back of the room before the exercises began in most observed classes. They also became more social and gathered with their friends and spent more time talking than exercising if not addressed by the teacher.

As a group the intermediate students were visibly less responsive to group encouragement and needed more individual encouragement and acknowledgement. Classroom space was an issue for this level of student as well. Based on observation data, classrooms were not any larger for these students than they were for the primary levels, however, the furniture in the class was larger, and the students themselves were physically larger, and, as a result, had to be closer to one another while performing the physical activities. Some of the effects of this on students were noticed through their actions of being self-conscious, fidgety, and an obviously uncomfortable with the closer proximity. Intermediate teachers that modeled the exercises so that students at this level had a higher level of buy-in reported students having higher levels of comfort than I observed during classroom visitations. The intermediate classes that had very actively involved teachers had higher levels of participation. Students were taking cues from the adults and using those to form opinions about things more than at the primary level. This was a consistent observation throughout both schools at the intermediate level.
Theme 3: Girls vs. boys

The proportions of girls to boys in the groups observed in this study were similar between the urban and suburban schools. This type of similarity in the sample of observed participants was unexpected. How girls and boys reacted to the physical activity program implementation varied between the primary grades and intermediate grades. Observations revealed that girls and boys in the primary grades were energetic, animated, and visibly excited to participate in the activities. Interview data supports this observation. Ms. Anderson, kindergarten teacher at the urban school stated, “I don’t notice a gender difference in my room. Once we get into the groove, we are all actively doing it.” This was a consistent message throughout the primary teachers that participated in the interviews in addition to the classes that were observed. As the student grade level increased, so did the differences between girls and boys. Ms. Inman supported this by stating,

My boys tend to be a lot more goofy, and I’ve got 17 of them. They tend to misbehave more than my girls do, they tend to take liberties and change the activity and exercises to be more aggressive and more of whole body movement; wrestling, tackling, that kind of stuff. The girls tend to follow the directions a lot more closely and they tend to talk more to one another while they are exercising. Boys tend to shout at each other.

Boys continued to be observably highly animated at all levels. They exercised carelessness and lack of consciousness of personal space of others and required frequent correction by the classroom teacher. As they were observed doing the exercise movements frantically, they traveled in different directions towards other students and
stumbled to try to avoid colliding with them as they were exercising. It was dramatic to watch. Although it slightly decreased as the grade level increased, there was still a need for staff to correct the inappropriate behaviors exhibited by the boys. Participants suggested that boys had less physical ability to execute most of the exercises properly and struggled with balance, especially during the cool down activity. As the grade level increased for boys, they were observed gravitating towards other students that potentially would over exert themselves as well. Another common characteristic observed for boys was that they moved towards the front of the room if not given a specific location in which to perform the physical activities. They tired much faster than the girls because they put much more energy into the physical activities. This was the case even when the activities were different because they were not paying attention. Ms. Carson explained,

    Boys jump right into it, no matter what is going on. Girls are starting to be a little more apprehensive. They appear to be more self-conscious and are concerned with doing it right. When boys lose their balance they make a big production out of it and tend to get silly. Girls get embarrassed, but continue to try.

Mr. Eubanks similarly commented,

    Girls that are movement oriented, they do the program to the best of their ability and they are doing it just how it is being demonstrated on the program. They are cooperative, obedient, and serious about it. The boys want to make everything more challenging. If there is a criss-cross pattern for example being done with the feet, they will double-time it and add their own twist to it. They are loud and boisterous and more exuberant in their participation.
Interview participant data described that girls in the primary grades start developing better coordination skills faster than the boys of the same grade/age level. Girls were reported to be more animated at the primary grade level. These behaviors tapered off quickly and they became more focused and more self-conscious and concerned with technique and executing the moves properly as they moved into the intermediate grade levels. They needed less behavioral correction overall, but needed much more encouragement from the teacher.

The self-conscious behaviors of girls at the intermediate level were far more evident in the suburban school than they were at the urban school based on observations. Girls at the intermediate level in the suburban elementary school looked around the room continuously as they executed the program. They adjusted their clothing and hair as they did the workout, and expended, overall, minimal energy in getting through the workouts. Ms. Layman acknowledged the issue with high levels of girls being self-conscious over the physical activity by stating,

They are so into the boy/girl thing at this age. So I turn off the lights for the workouts and I insist that the students focus on the screen, and they are not permitted to look at or watch their neighbor during the exercising.

Overall the girls were better at executing the moves in the videos with higher degrees of accuracy, and the boys executed the moves with higher levels of energy. These generalizations were supported by both interview and observation data.

**Theme 4: Teacher enthusiasm and participation**

The staff’s attitude and perspective on how they felt about the program had an impact on student attitudes and participation levels. The observed behaviors of teacher
enthusiasm and participation varied greatly, and each class had its own personality and structure in which they operated. Some of the participating staff had the physical activity program such an engrained part of their morning routine that there were no outwardly observed expressed transitions and the program just happened after a particular part of another morning routine. Teachers that overtly discussed the routine with the students just prior to implementation had higher levels of class participation and overall observable excitement for that day’s workout. Ms. Dawson explained, “Whoever leads it, the staff needs to do it too! That makes a big difference. Demonstration and slowly walking through each piece of the work out, especially originally, to teach it to the kids is important.” Ms. Carson further stated,

One thing about Ms. Auxier, she wants teachers to do it as well and as soon as they saw us doing it, they jumped right in without hesitation. Now since we are into the school year, it has just become a part of our regular routine. Everyone, including me, participates.

There were more staff members than I anticipated that had observable casual attitudes about the program, and it was evident in how little they participated with the students. In general, they expressed their overwhelming support for the program through the interview data, but their visible actions during observations did not completely support their expressed opinions. If a teacher did not display excitement about the program, students had visibly less energy and in some cases exhibited reluctance and hesitation in participation. Based on interview data, there were some challenges expressed by teachers that would prevent them from either participating in the physical activity on that day or in general. Many of these presented challenges were either related
to technical issues with the equipment in the room, or with teachers’ own health-related
issues. Interview data from building administration later revealed that they had not been
made aware of the technical issues with classroom equipment in some cases, and offered
to provide other methods to facilitate the implementation of the physical activity
opportunity to students while repair requests were pending.

Teachers that implemented curricular components as a part of the program such as
journaling, charting of results, and class discussion/reflection immediately following the
workout, had higher levels of student participation and energy in observation situations
and interview responses.

Different types of encouragement yielded different results. Classroom
observation data suggested that primary grade levels responded to an occasional general
whole class encouragement by the teacher far more than the intermediate grade levels.
The intermediate grade levels responded little to general encouragement, but did respond
to individual words of encouragement directed at a specific student during the workout.
At the primary level, individual encouragement resulted in an extreme over reaction from
the student being encouraged, especially at the suburban school. Urban primary students
appeared to have less overall energy than their same level peers at the suburban school.
They also followed the video more closely and executed the physical movements more
accurately, with less distracting behaviors than the suburban primary students, even with
teacher encouragement. This behavior was consistent based on observation data. The
primary levels needed far less encouragement, as they jumped right in and wanted to do
the physical activities. It was obvious at every primary level that the students enjoyed
doing the workouts. Ms. Bell shared,
My students respond at higher levels because at the very beginning of the program, one student made a comment, thinking that the principal, who is leading the workouts in the videos, was actually able to see them. I took full advantage of that, and began yelling at the screen, ‘hey Ms. Auxier, did you just see so and so do that so much better today than yesterday?’ Things like that. They work super hard because they want her to see them doing a great job.

Students at the intermediate level at the urban school responded more to individual encouragement and teacher modeling to increase their energy and participation levels. When teachers had a shift in attention, no matter what the reason, students would have a slight drop in energy level. Teachers at the urban school spent a great deal more time encouraging students to keep energy levels elevated, and to try to get students through the workouts, as referenced in interviews and revealed through observation data. The urban school teachers were the active participants in starting the videos and making sure that students were getting up and getting ready to work out. Students at the suburban school took a more active role in some cases in actually getting students up and ready to workout. This had clearly become part of an established class routine.

**Theme 5: Variety**

The suburban and urban schools implemented physical activity programs in a specifically structured format. The format that was followed by both schools consisted of the same warm up and cool down, with varied cardio portions within the videos. There were videos recorded for each day of the week, representing a standard five-day school week. Differences between the suburban and urban school videos were that in the urban videos, the principal led each of the daily routines, with students from the intermediate
grade level in the videos, while the suburban school used intermediate level students as the leaders within the videos, and students representing primary and intermediate levels as video participants with them.

In the suburban school, according to staff, students requested more variety in video choices much earlier than the students at the urban elementary. Interview participants mentioned the need for greater variety in not only the video selection, but the incorporation of different types of workouts, different students represented, more yoga focused movement, more cardio focused, and different formats. Mr. Eubanks statement summarized the sentiments of interview participants from both schools when he said, “Students need the security of structure and routine, and they need physical movement. They also thirst for variety within that structure and routine to maintain interest and enthusiasm.” Students also had particular videos that they preferred to use based on the movements in those videos. Ms. Dawson explained, “Students enjoy seeing current students in the videos, and the variety of the moves is ok. Ms. Auxier even incorporated a current dance move, which the kids absolutely love. They start requesting particular videos and that keeps it fun.”

To keep students excited and enthusiastic about the program, intermediate classes created variety within the structure of the program, mostly at the suburban school. Based on both interview and observation data, some of the variety was created by turning down the audio of the video and putting on different background music for students to use to workout. There were classes that left the audio portion of the video turned up, but had students take turns going to the front of the room and modeled the exercises for students. Ms. Harris described,
Sometimes I let one of the other children take turns leading the exercises and its always the same movements that they have seen on the screen, but they just got tired of seeing the same ones over and over, but they didn’t get tired of DOING the same movements over and over, if that makes sense.

This type of variation became more apparent, especially in the suburban school as the program implementation continued through time according to interview participants. Other classes began supplementing the video series with other workout videos that they had. According to some staff interview data, some teachers used the pre-recorded videos three days per week, explored different physical activities, whether that be using a Wii dance game, or just a different video entirely. Some worked with students, using it as an educational activity, and would break down the contents of the videos. Students also created new workouts to music of their choice, prepared them ahead of time, and then presented the exercises to the students in the class on a particular day. Students also had clear favorites within the videos provided to classes. Teachers used this as incentives for other educational activities in class. If students accomplished various tasks, or performed at a particular level on a particular item, they would get to select which workout was done that day.

Interview participants recommended that location variation from time to time might re-energize the program. They recommended a whole-school activity in a common space being led by a local celebrity, or someone that would get the students excited. There were many creative ideas presented in how to create variety within the structure. The suburban school students began to lead this charge as the first semester came to a
close. The urban school wanted the variety, but lacked the implementation drive and ideas of alternatives to accommodate this desire.

**Theme 6: Verbal and physical**

A commonly observed activity involved the use of music that had lyrics familiar to students. When students knew the song, they sang along with the music while they exercised and became more energetic, had better movement execution, and had improved stamina and intensity. This was a common observation in classes that implemented such a change in the music.

Changing up the music was not as easily accomplished in classes that had more limited resources. These classes chose a different approach. Verbal chants were added to the particular movements in the videos, even at the primary grade levels, and it noticeably elevated student energy levels during the workout based on observation data. This was also the case with a counting strategy that was implemented in several classrooms. Based on observations, the teacher began an eight count with each beat and movement, and students joined the teacher and as they got closer to the number eight, they increased in volume and intensity and when they arrived at eight it was almost shouted. They repeated the pattern. Students’ movements increased in intensity and accuracy as they got closer and closer to the number eight. This was repeated four to six times, then they stopped, and as student energy levels waned, teachers and students began counting again, and energy levels increased. These activities were implemented more at the intermediate levels than the primary levels. Primary level students had high energy at both the urban and suburban schools as described through interviews and observed; it was just not
sustained for the entire duration of the videos. There was also a difference in stamina levels.

**Summary**

This qualitative study investigated perceptions as they related to the implementation of a physical activity program at an urban elementary school and a suburban elementary school. The chapter presented the results of 14 interviews and 25 observations of program implementation distributed between the two locations. Specific examples of interview quotations in addition to observation summary highlights illustrated themes that emerged from these data collection methods. Table 3 illustrated the interview participants’ roles within the various locations in addition to their years of experience as elementary educators. Table 4 illustrated a break down of the classroom observations conducted as a part of the data collection process.

Six themes emerged from the observation and interview data. Theme 1 was presented as comparisons of similarities and differences between program implementation at the urban elementary school and the suburban elementary school. There were similarities and differences that emerged between the primary and intermediate grade levels in the schools, and these were identified as Theme 2. Theme 3 highlighted the different experiences observed and reported by teachers in how boys and girls reacted to the physical activity program implementation. Theme 4 emerged out of observation data collected that revealed the impact of teacher enthusiasm and participation on the program implementation at both school sites. Activity variety, Theme 5, emerged from interview and observation data at both schools. This was a prominent theme in this study, especially for future implementation recommendations,
due to how students were impacted by program variety. Theme 6 was revealed as a result of observation data and related to the impact of program execution when students combined verbal components with physical movements.
CHAPTER V

Summary and Discussion

The qualitative study described in this report investigated perceptions and implications connected to the implementation of a physical activity program. Interest in this study was generated based on the increasing number of our nation’s youth that are suffering from childhood obesity and type-2 diabetes (Langford et al., 2003). This chapter provides a summary and discussion of the study as a whole, along with my interpretations of the results. It is organized around the following sections: (a) review of the methodology used in the study, (b) restatement of the research questions, (c) connections between the research questions and the themes that emerged, (d) findings related to research question 6, (e) relationships between current study and prior research, (f) implications for practice, (h) implications for future research, and (i) conclusion.

Review of Methodology

The purpose of this study was to document the process involved in the implementation of a physical activity program and to describe the program participants’ experiences and perceptions in order to develop a deeper understanding of the phenomenon of interest in program participation. The first case study involved an elementary school in a large urban school district in the Midwest. This school’s enrollment was 350 students in grades Pre-kindergarten through five. The Students with Disabilities (SWD) subgroup for this school was 16% of the student population. Approximately 95% of students enrolled at this school qualified for free or reduced-price meals. The second case study involved an elementary school in a medium-sized suburban school district in the Midwest. This school’s enrollment was 450 students in
grades kindergarten through five. The Students with Disabilities (SWD) subgroup was 5% of the student population. Approximately 5% of students enrolled at this school qualified for free and reduced-priced meals.

Qualitative data were collected utilizing two methods; individual participant interviews and field observations. The interview process involved 14 participants, including each building administrator, and one teacher from each grade level participating in the physical activity program. Participant interviews consisted of 12 questions for the teachers (See Appendices A and B) and 13 questions for the building administrators (see Appendices C and D). The interview questions focused on participants’ perceptions of the program implementation and its impact on students.

Each interview was audio-recorded and transcribed and the resulting data were analyzed through a system of open coding to generate common themes and consistencies in perceptions across interviews. This also provided an opportunity to seek those perceptions that were divergent from the majority and could be supported through other data collection methods such as field observations.

Field observations were conducted at both elementary schools as another part of the data collection process. A template (see Appendix E) was created to provide consistency in the observation format, and to increase the likelihood of objectivity in this data collection process. This type of observation protocol included both descriptive and reflective formatting to allow for additional notes and questions to be added as potential themes emerged from the concurrent data analysis. I conducted 25 total classroom observations. Twelve observations were conducted at the suburban elementary; two at each of the grade levels, including kindergarten through fifth. There were 15 observations
conducted at the urban elementary. Due to scheduling conflicts, it was not possible to observe in first grade classrooms; however, two additional observations were made at the second grade level. The observation notes were analyzed and coded using an open coding system to find consistent themes. Ohio Department of Education data on each school were reviewed and used as a resource for understanding the specific demographic breakdown of each school in addition to their academic designation as issued from the state.

**Restatement of the Research Questions**

As established at the beginning of this study, the following research questions were the focus of this investigation:

- **RQ1** - What are teachers’ experiences implementing a physical activity program?
- **RQ2** – What are teachers’ perceptions of the differences between primary and intermediate grade levels during the implementation of the physical activity program?
- **RQ3** - What are teachers’ perceptions of how boys and girls react differently to a physical activity program?
- **RQ4** – How did the individual teachers impact the implementation of the physical activity program?
- **RQ5** - How do teachers describe students’ attitudes and behaviors just before and immediately following the daily physical activity program?
- **RQ6** - What similarities and differences were there between the two cases?
Connections Between Research Questions 1-5 and Themes

Research Question 1

What are teachers’ experiences implementing a physical activity program?

Theme 1. Theme 1 emerged primarily through the interview process, as this required a reflection back, especially for the urban school teachers who had been implementing the program a year prior to the suburban elementary. They had more experience with the program implementation at the time of the interview process. The program was introduced to teachers at the urban school just prior to the school year starting, and they were told how the program would be implemented and what the principal’s expectations were regarding its implementation. Because the program was supported by brain-based research, and a thorough explanation as to the potential benefits for students was provided, there was not an issue with staff buy-in. There were questions that needed answered, but much was presented as a “hey, let’s try this and modify as needed” approach. The suburban elementary School Renewal Team worked on promoting staff buy-in from the beginning of the process before the end of the school year prior to the program’s intended implementation. The biggest difference in the videos used by the schools was that students led the suburban school’s workouts in the video, and the principal led the workouts for the urban school’s videos.

Based on both observation data and interview participant data, the experiences of both schools were similar in that overall, the experience in implementing the program had been a positive experience. There were many items to address to refine the processes at both schools, but the perception that it had a positive impact on students and the climate of both buildings was consistent.
**Theme 4.** Theme 4 identified the importance of teacher and staff excitement for the program and its impact on student participation. This was consistent in the observation data. How teachers communicated the program to students and how they participated in the activities with the students impacted the student experience. In some observed situations this was a positive experience, and in some cases it was a negative experience. The staff that worked hard along with the students reported higher levels of student excitement and acceptance. During observations, this was true of the classes where teachers were active participants vs. those who were less active or not active at all during the execution of the physical activity.

**Research Question 2**

*What are teachers’ perceptions of the differences between primary and intermediate grade levels during the implementation of the physical activity program?*

**Theme 2.** Theme 2 highlighted the differences in how the physical activity program was implemented in the different grade levels. This was revealed through both observation data and interview participant data. These differences were not intentional, especially in the beginning. These differences evolved as the result of the process of implementation and what was learned during that process. Primary students in both schools demonstrated higher levels of energy during the execution of the physical activity program. Overall they also struggled more with the coordination involved in the activities, particularly when it came to balance. The younger grade level students could not execute the balancing activities with any real level of success, especially at the beginning of implementation. Participants indicated that the primary students also struggled with the duration of the videos. Initially, they were able to successfully work
through three to four minutes of the activity before showing visible signs of fatigue and exhaustion. Although this improved over time, it was still an overarching issue throughout the program implementation according to interview data. Primary grade level students also responded to a greater degree to teacher group encouragement. These students did not respond as well to individual encouragement by the teacher. Intermediate grade levels were more coordinated during the exercises and were better able to execute the balancing activities during the cool-down process. This was both observed and supported through participant interview data.

Attitudes for the program varied between the primary and intermediate levels. Students at the primary level were more excited about the program throughout the process. It took time for the intermediate levels to get excited and buy-in to the process. Participants agreed that intermediate students questioned the activity and needed justification in order to embrace it more. This was more evident at the urban school. The suburban school was already incorporating a variety of wellness initiatives as a part of the renewal process, so this was more understood by students at the suburban school.

**Research Question 3**

*What are teachers’ perceptions of how boys and girls react differently to a physical activity program?*

**Theme 1.** Theme 1 was connected to urban and suburban school differences and also related to gender differences. The primary differences that teachers reported between the urban and suburban schools with regards to looking at the similarities and differences between genders, was at the intermediate level for the girls. Girls at the suburban school at the intermediate grade level exhibited discomfort exercising with the class. This was
not the case at the urban school. Though the girls took greater care in their execution of
the exercises than the boys, they did not exhibit observable issues of self-consciousness
that were exhibited at the suburban school.

**Theme 3.** Theme 3 was related to gender differences. There was overwhelming
data, both from interviews and observations that supported the differences between girls
and boys and the physical activity program implementation. In some cases there were
slight differences in grade levels among the results for girls, and between the suburban
and urban schools, also related to girls. Boys’ results were consistent across the board for
both schools at all grade levels, both in observation and interview data. Boys
exaggerated movements related to the physical activity. They executed the movements
faster, with more energy, and in some cases, especially at the primary level, with reckless
abandon (not paying attention to how this impacted those around them). The boys
laughed, moved to the front of the room if not assigned an area or spot in which to do the
workouts. As the grade level increased, the boys began to gravitate towards one another
and exaggerated the movements with a partner. There was an overall silliness to how
they executed the physical activities in the program. Girls reacted similarly to the boys at
the primary grade levels. They executed the movements with more energy. As they
transitioned to the intermediate level, girls became less energetic and were more
concerned with the appropriate execution of the movements. They would move more
towards the back of the room when it was presented as an option of where they could stand.
Research Question 4

How did the individual teachers impact the implementation of the physical activity program?

Theme 1. Theme 1 revealed differences between program implementation at the urban and suburban elementary schools. There was less teacher participation observed at the suburban school. Even though there was less physical activity by the suburban teachers, there were more corresponding academic activities connected to the program in terms of discussions, journaling, charting, and reflecting. I observed an impact on students’ attitudes and participation in the program according to interview data. Even though teachers at the urban school participated with the students more, they struggled more with getting and keeping student energy higher.

Theme 4. Theme 4 connected teacher enthusiasm and participation to the behaviors exhibited by students during program implementation. Teachers that were reflective in their dialogue through the interview process expressed the understanding of the importance of teacher participation for students to buy-in to the process. They also understood that if they had a variety of activities associated with the workout program, that students would also take it more seriously. Since this would be teacher driven, they had an impact on student participation and attitude. Teachers that worked out with the students each day also had a higher level of student participation, positive overall classroom energy and attitude. It was also noticeable that students at the primary levels responded more to group encouragement and the intermediate grade levels responded more to individual encouragement.
**Theme 5.** Theme 5 addressed the importance of variety in the physical activity implementation. Data from those interviewed described that when teachers changed up the daily routine, there was a change in how students worked through the program. Since there were only five videos to choose from, students expressed that they wished there were more choices in what they could do. Teachers changed the videos and let students choose videos that they preferred over others and used that as an incentive in some cases. Other than changing the video that was used on a particular day of the week, some teachers allowed students to lead the exercises along with those on the video, to offer a variety of activity. Teachers also allowed students to execute a particular day’s activity using different music and without the video if the student leading the activity had the routine from the video memorized.

**Theme 6.** Theme 6 revealed the impact of combining verbal components to the physical activity during implementation. Additional observation data revealed that if the audio was turned down on the video, and another song put in the place of the regular music from the video, there was a change in student participation levels. If it were music that students could sing along with and they knew the lyrics their energy level increased. This activity at the suburban school changed how students executed the work out. They also more accurately executed the movements and rhythm of movements when they sang while they were exercising. At the urban school, a similar strategy was used with counting. When student energy levels dropped, the teacher would start counting off from one to eight with each movement, and students counted along with her, and with each set, one started off softer and volume built until they yelled eight. This strategy was observed
in multiple classrooms at various grade levels. This was done with the same result each time, and that was increased student participation and energy levels.

**Research Question 5**

*How do teachers describe students’ attitudes and behaviors just before and immediately following the daily physical activity program?*

**Theme 1.** According to teachers’ perceptions, students’ attitudes and behaviors before the daily program varied from day to day. Primary grade level students got excited just before the physical program each day. Teachers expressed that routine is extremely important developmentally for this age group. Teachers at the primary level attempted to keep the activity at the same time each day at both the urban and suburban school. Students got visibly more excited as the time for the workout approached (within 10 minutes of implemented exercise, as reported by the classroom teachers). Students at the intermediate level enjoyed doing the exercises, but since, at both schools, this time varied from day to day, the students were not certain when the activity would occur. Participants reported that if for some reason it did not happen on a particular day, students began asking about it. At the urban school, most classes (primary and intermediate grade levels) participated in the program following a transition period, so they anticipated the activity, and were visibly excited. Following the workouts, students were reported to be happier, had better attitudes, and were excited to begin working on assigned tasks.

**Findings Related to Research Question 6**

*What similarities and differences were there between the two cases?*
**Similarities.**

Based on observations and interviews, students at the primary grade levels had similar behaviors before and after the implementation of the physical activity each day. Students exhibited elevated energy in anticipation of the exercising daily and elevated levels of happiness immediately following exercising. Through observations the trend of staff addressing inappropriate student behaviors was similar between both schools. Students required behavioral corrections before the physical activity, behavioral correction during the activity increased, then fell below the initial levels of correction after program participation. Similarly, inappropriate behavioral correction, at both schools, before, during, and after program implementation focused more on the boys than the girls. Students at the primary level responded to group encouragement by the classroom teacher. There was increased energy and intensity in exercise execution when the class was encouraged as a whole. Individual student encouragement had less of a visible impact at the primary grade level. This was a consistent pattern at both study sites. Intermediate grade level students responded differently, and group encouragement had little if any observable impact on student participation levels. When this encouragement was changed and directed at individual students, there was a visible change in the participation level of that student, and those close to that student.

Interview participants reported that energy levels were higher and students were more focused following the activity implementation. Teachers also reported that students asked frequently about doing the workouts if activity in class got them off track from their daily routines. Boys exaggerated movements and girls, especially at the intermediate level, were more self-conscious than the boys. Girls at the intermediate
grade level at both schools were more concerned with technique and executing the exercises with more accuracy versus more energy. Teachers reported increased stamina over all grade levels over time, with the biggest change (increase) at the primary grade levels.

Interview participants expressed support for the program implementation and understood the impact that this support had on student participation in the program daily. It was observed that when teachers participated in the physical activities with the students, regardless of the grade level, students increased their level of participation. They expressed, and it was observed, that students needed encouragement throughout the program to keep energy levels elevated. They used both group and individual encouragement strategies to address this. They also supported the program and expressed the critical need for this type of program and recommended ways to implement it more and expand it. They expressed that one of the biggest challenges was finding time within the school day to make it happen. Similarly, teachers expressed the need for expansion of video variety, that students quickly developed favorites, but even during the implementations of the favorite videos, they were developing boredom over time with the same video selection. An unexpected activity at both the urban school and suburban school that impacted both schools was the addition of a verbal activity during the workout. It impacted the energy, coordination, and commitment to the intensity of the workout. Both schools had observed activities that involved students either verbalizing counts while doing the exercises, or singing to the music during the workout, that completely changed how they were participating in the workout. Counting by eights and/or singing along with the music increased student energy levels. Through both
interview data and observation data, it was consistent that at the conclusion of the program each day, students had better attitudes and there was a more positive energy that existed within the classroom environment. This emphasizes the concept that kids are kids. The program was perceived by staff to have a positive impact on all students.

**Differences**

The physical activity implementation program was introduced differently at the two schools, and the duration of implementation at the two schools had different time frames. The program at the urban school was introduced and implemented the year prior. This provided the urban school with a full year of experience prior to the implementation of the program at the suburban school. The program was introduced differently at the two locations. The urban school had the program introduced at an opening staff meeting just prior to the program implementation. Interview participants from staff at the urban school indicated that though they understood and were on board, they would have preferred a more thorough orientation of the program prior to a day or so before program implementation. The suburban school formed a committee (a renewal team) that looked for ways to focus on health and wellness, and this program was discussed and considered the school year prior to implementation. Staff had an opportunity to discuss how this would be done, and what it would look like for their school. This gave the committee a chance to communicate the program to other colleagues within the building in the spring of the year prior to implementation.

The program structures were different. Different than the urban school, (using the principal as the leader of each exercise series with a student on each of side of her), the suburban school used older students to be the leaders of the exercises in the videos, with
a younger grade level student on each side of them. This provided the opportunity to use more students within the videos.

**Relationship Between Current Study and Prior Research**

I compared results from this study with data collected from the review of the literature described in Chapter II of this report. My findings support much of the research I reviewed prior to this study. Topics supported by both the existing literature and the study results focused on the following: (a) application of Social Cognitive Theory and learning behaviors; (b) self-esteem and motivation; (c) health implications, physical awareness and fitness; (d) Achievement Goal Theory; (e) student attitude perceptions; and (f) gender differences.

**Social Cognitive Theory & Learning Behavior**

The research collected as a part of this study reinforced elements of Social Cognitive Theory that connects the interactions of the environment, people, and behaviors and how they are constantly influencing one another. Social Cognitive Theory explains how people acquire and maintain particular behaviors (Bandura, 1997). A basic understanding of this theory can be applied to the design and evaluation of a behavioral intervention program of any kind. The manner in which the physical activity program was designed, socialized, executed, and modified, impacted the experiences that students and teachers had with the program. According to teachers’ perceptions, these interactions helped to shape student attitudes and perceptions in order to address behaviors with overall physical activity, health education, and attitudes surrounding nutritional choices. Teachers also perceived that the activities they conducted both before and after the daily
program implementation were critical in impacting students’ changes in attitudes. Researchers indicated that in order to effectively change behavior, change in attitude is critical (Erhlich, 2008; Glanz et al., 2002; Pajares, 2002). The program goals included the following, (a) to increase student learning, (b) to develop a deeper understanding of perceptions connected to physical activity programs, (c) to influence life-choice behaviors in students. Influencing life-choice behaviors was supported by prior research that indicated that it is possible to change behavior results through educational activities connected to the topic (Burns, 1995, & Laird, 1985).

**Self-Esteem and Motivation**

Participation in the physical activity program, as evidenced in interview and observation data, impacted students’ emotions, self-esteem, and levels of motivation. Following the daily implementation of the workout, teachers perceived that students had improved attitudes, increased levels of happiness, and more energy to accomplish tasks, specifically academic tasks. Teachers also identified that students experienced an improvement in focus on academic activities.

Teachers reported that increased self-esteem happened over time as students were able to accomplish more and more of the physical activities and sustain these activities for longer periods of time. The change in self-consciousness levels, as observed in intermediate level girls at the suburban school could be related to their self-efficacy beliefs as supported by prior research on efficacy (Bandura, 1993; Gao et al., 2008; Gruber, 1986; Levin et al., 2001; Ogden, et al., 2006; Pajares, & Mitchell, 1994; Scheuer, & Mitchell, 2003; Shephard, 1997; Tremblay, Inman, & Williams, 2000; Yu et al., 2006).

There is still a question of other potential variables that could have contributed to the
perceived changes in student behaviors as a result of program implementation, but since the urban elementary school participants had already participated in the physical activity program for an entire year, they likely experienced lower levels of anxiety as observed and reported by teachers, than did their peers at the suburban elementary. Students at all levels developed more and more confidence and increased self-efficacy beliefs as the program evolved. The teachers also perceived that students’ confidence increased to a level where they not only wanted to start creating their own exercises, but they also wanted to lead the class in the implementation of the exercises.

Health Implications, Physical Awareness, and Fitness

The focus for the program implementation was multi-faceted. In addition to focusing on physical movement, both schools focused on overall health and wellness to fight the childhood obesity epidemic. The intention was to positively impact the student’s overall physical wellness, knowledge of healthy food choices, and improved psychological well being (Coe, 2003; Rhodes et al., 2003; Sallis, et al., 1999; Tomporowski, 2008; Vail 2006). The designed structure of the program was based on research, intentionally providing warm-up and cool-down cross-lateral movements that stimulated the brain and pre-frontal cortex areas. The previous research findings were supported by teacher interview and observation data and reinforced students being able to get focused on content much quicker than before the implementation of the program. Teachers reported elevated levels of maintained energy, and they believed students were able to focus on academic tasks better than before the physical activity program was implemented. The suburban elementary school was working with all aspects of health and wellness as a part of their renewal plan. Teachers indicated that they perceived a shift
in not only students’ attitudes about food choices, but also increasing physical activity, and the desire to engage in movement activities on a daily basis. This was reported by teachers based on the behavior and attitude changes they observed in their students since program implementation began at their school.

**Achievement Goal Theory**

The implementation of the physical activity program was intended not only to help kids get healthier, but also to expand their overall understanding of health and wellness. Teachers discussed the implementation of various curricular components designed to compliment the physical activity itself. Their instruction aligned with Achievement Goal Theory that stresses personal growth and not the competitive aspects of many physical education programs. Achievement Goal Theory also applied to all of the work that teachers did to prepare for the program implementation in addition to all of the associated activities that they created. Students made charts, used reflective journals, and participated in group/individual discussions surrounding their progress with the implementation of the program (Ames & Archer, 1988; Nichols, 1984; Treasure & Roberts, 1995).

**Student Attitude Perceptions**

Interview participants reported a perceived change in students’ attitudes overall for the better. Students were happier, more agreeable, had fewer incidents of disagreement among peers, participated more in class, and had a better overall attitude towards educational tasks. Prior research supported their perceptions, many of which can be explained through physiological explanations in addition to environmental influences.
(Chomitz et al., 2009; Ehrlich, 2008; Hillman et al., 2005; Van Andel & Austin, 1984).
These researchers identified that chemicals released during physical activities have a cleansing effect along neurological channels, leading to decreased levels of anxiety and depression. Teachers in this dissertation study reported that they observed decreased levels of anxiety and depression as being more evident at the primary grade levels. I observed that students at the primary grade levels were visibly excited to participate in anything that involved movement. The intermediate grade level students demonstrated visible overall energy level drops. They required more encouragement from teachers to maintain their energy levels during the exercises. Study participants reported an overall positive impact on the culture and climate of the school. They held the perception that students were happier in general, as were they, as a result of the program implementation. Teachers perceived that students felt more connected to one another now that they were all doing the program on a daily basis. This was reflected in the reduction of student-to-student conflicts evident in the daily activities within the classroom. Teachers indicated that the only thing that had changed this year over years past was the implementation of the daily physical activity program. The urban elementary teachers reported that they continue to see improvements in student attitudes, especially towards the importance of physical wellness.

**Gender Differences**

During field observations I observed that boys were more active than girls at all grade levels in both schools. This perception was also reported by participants during the interviews that were conducted. I noticed that girls at the primary level were more active than girls at the intermediate grade levels. Culturally speaking, girls are typically
perceived as more frail, more fragile, and less capable of performing physical tasks to the same level as their male counterparts (Debate et al., 2009; Fox et al., 2010; Tremblay, 2000; Trost, 2007; Trudeau, 2008; Yu et al., 2006). These findings were reported in research studies on the impact of physical activity on females’ improved self-esteem, motivation, and academic performance.

I observed that boys reacted differently to the physical activity and exhibited extra energy throughout the exercises. They often went beyond what was requested, displayed exaggerated movements, and typically moved to the front of the room, or center of the space where the physical activity was being implemented. Girls and boys exhibited similar reported and observed behaviors at both the urban and suburban elementary schools at the primary levels. Differences were noticed at the intermediate grade levels between the girls and the boys. Girls appeared more self-conscious during their participation in the activity, and were careful in how they executed the movements in the videos. I postulated that they did so because they wanted to do the moves accurately, and to be sure that they were not drawing unnecessary attention to what they were doing. This was the opposite from the boys at all grade levels. Intermediate grade level boys not only continued to exaggerate physical movements, they typically tried to convince a friend to do so with them.

**Implications for Practice**

This case study investigating teachers’ perceptions of the implementation of a physical activity program and the findings resulting from field observations have contributed to the knowledge base on this topic. This research study also identified many additional phenomena to be studied in the future in order to gain further understandings
related to physical activity programs. The themes that emerged should be helpful to any elementary school leaders and teams in the process of considering the implementation of a physical activity program. Recommendations made by those involved in the program were based on both lived experiences and the supporting literature. There were experiences shared that are unique to such a program implementation. Through field observations I also identified unique experiences that could benefit other schools considering such a program implementation:

1. Program design should use data involving different developmental capabilities of the average student based on grade and age level. This impacts what physical movements would yield the best results and provide a successful experience based on what students can do physically. Coordination and balance skills vary greatly among elementary populations given the vast age range of students and the psychological developments that occur at the different age groupings.

2. The time of day for program implementation is an important factor. Students reacted differently both before and after program implementation based on the time of day. Teachers consistently reported that mornings were their preferred time for program implementation based on how it impacted students and how they functioned throughout the remainder of their school day. Younger students reacted more positively during earlier morning times, and older students reacted more positively during the later morning times.

3. Teaching the exercises to students, especially at the primary level, was a strategy that had a tremendous impact on students’ abilities to successfully
execute movements with higher levels of accuracy. The students approached the exercises with better attitudes once they felt confident in how to execute the exercises with greater levels of accuracy.

4. It was also consistently suggested that there be a wide range of physical activities from which students and teachers can choose to implement on any given day. This was reported to have an impact on the amount of energy that students put into their program.

5. Incorporating verbal components to the physical exercises, such as singing or chanting increased energy levels and accuracy in all age ranges at both schools.

6. Allocating adequate preparation time for staff to get educated about the rationale for program implementation in addition to staff creating activities to use before and after workouts that help with the education of the health and wellness benefits of the program. This helps students buy in to the program implementation and deepen their understanding of why it is important. These activities have curricular benefits when tied into core courses.

Students that appeared bored participated at lower levels, as reported by staff. Schools should consider every detail of how such a program should be constructed, communicated, and executed based on resources available and the developmental constraints described in this report. The data collected in this study consistently revealed that the implementation of the physical activity program was beneficial to students. This was the case based on observations and interview data, regardless of how the program
was implemented within each classroom. Teachers and administrators all thought that students benefitted from the implementation of such a program.

**Recommendations for Future Research**

Much of the data collected through the interview and observation process supported existing research on the various topics and themes. Through my review of the literature I discovered that most of the studies were concerned with the impact of physical activity on student academic performance. I was not able to find research on perceptions of teachers regarding physical activity program implementation. Based on the interview and observation data collected, I propose that additional studies would be helpful in maximizing the impact of future implementations of similar programs. Future studies might investigate optimal times for various age groups and/or grade levels to participate in specific physical activities. There is also a need to determine the type of music that generates the most excitement for the various developmental levels of students. Determining exercises that are age/grade, as well as developmentally appropriate, yet progressively challenging, would also contribute to the body of knowledge on this topic. A longitudinal study incorporating students who have participated in a physical activity program throughout their elementary school experience may help answer some of the questions created by this study. Investigating the impact of the use of verbal components, whether they are singing or chanting, within the context of the physical activity program may be beneficial in gaining insight to how that impacts a student’s ability or determination in executing specific exercises or physical movements. Studying the impact of room lighting during the implementation of a physical activity program to
determine its impact on student participation, or student anxiety may also provide valuable data for future program implementation.

Conclusion

This dissertation study provided valuable information based on teachers’ perceptions and researcher observations of the implementation of a physical activity program. If this information and recommendations offered in this study are considered in future attempts to implement such a program, more students may be positively impacted.

The voices and lived-experiences of those involved in this program on a daily basis need to be considered for future program implementations. Much was learned about the implementation process and how it was perceived to impact students, staff, and a school’s culture and climate. Perceptions and observations have indicated that physical activity programs have a positive impact on students, and how this process is planned and executed is critical to its success.
REFERENCES


Staff Interview 1 Protocol

1. How was the implementation of a physical activity intervention program initially presented to you?

2. Describe your experiences in implementing the physical activity intervention program.

3. How did students react to the program implementation?

4. What changes, if any, have you noticed in students’ reactions to the program since it began?

5. What are your perceptions of the advantages of implementing a physical activity intervention program?

6. What are your perceptions of the disadvantages of implementing a physical activity intervention program?

7. What generalizations would you make about the physical activity intervention program?

8. What data would you use to support those generalizations?

9. What are your perceptions of how boys and girls react differently to the physical activity intervention program?

10. How would you describe students’ attitudes and behaviors just before the participation in the daily physical activity intervention program?

11. How would you describe students’ attitudes and behaviors immediately following the participation in the daily physical activity intervention program?

12. Based on your experiences and perceptions, what recommendations could you make regarding the implementation of the physical activity intervention program?
APPENDIX B

STAFF INTERVIEW 2 PROTOCOL
Staff Interview 2 Protocol

1. How was the implementation of a physical activity intervention program initially presented to you?

2. Describe your experiences in implementing the physical activity intervention program.

3. How did students react to the program implementation?

4. What changes, if any, have you noticed in students’ reactions to the program since it began?

5. What are your perceptions of the advantages of implementing a physical activity intervention program?

6. What are your perceptions of the disadvantages of implementing a physical activity intervention program?

7. What generalizations would you make about the physical activity intervention program?

8. What data would you use to support those generalizations?

9. What are your perceptions of how boys and girls react differently to the physical activity intervention program?

10. How would you describe students’ attitudes and behaviors just before the participation in the daily physical activity intervention program?

11. How would you describe students’ attitudes and behaviors immediately following the participation in the daily physical activity intervention program?

12. Based on your experiences and perceptions, what recommendations could you make regarding the implementation of the physical activity intervention program?

13. How would you describe the differences between program implementation during year one and year two, (including your perceptions of students)?

14. What are your perceptions of students’ opinions, reactions, and participation between year one and year two of the physical activity intervention program implementation?
APPENDIX C

PRINCIPAL INTERVIEW 1 PROTOCOL
Principal Interview 1 Protocol

1. Describe your experiences in implementing the physical activity intervention program in your school.

2. How did staff and students react to the program implementation?

3. What changes, if any, have you noticed in students’ reactions to the program since it began?

4. What are your perceptions of the advantages of implementing a physical activity intervention program?

5. What are your perceptions of the disadvantages of implementing a physical activity intervention program?

6. What generalizations would you make about the physical activity intervention program?

7. What data would you use to support those generalizations?

8. What are your perceptions of how boys and girls react differently to the physical activity intervention program?

9. How would you describe the climate of your building just before the participation in the daily physical activity intervention program?

10. How would you describe the climate of your building immediately following the participation in the daily physical activity intervention program?

11. Based on your experiences and perceptions, what recommendations could you make regarding the implementation of the physical activity intervention program?
APPENDIX D

PRINCIPAL INTERVIEW 2 PROTOCOL
Principal Interview 2 Protocol

1. Describe your experiences in implementing the physical activity intervention program in your school.

2. How did staff and students react to the program implementation?

3. What changes, if any, have you noticed in students’ reactions to the program since it began?

4. What are your perceptions of the advantages of implementing a physical activity intervention program?

5. What are your perceptions of the disadvantages of implementing a physical activity intervention program?

6. What generalizations would you make about the physical activity intervention program?

7. What data would you use to support those generalizations?

8. What are your perceptions of how boys and girls react differently to the physical activity intervention program?

9. How would you describe the climate of your building just before the participation in the daily physical activity intervention program?

10. How would you describe the climate of your building immediately following the participation in the daily physical activity intervention program?

11. Based on your experiences and perceptions, what recommendations could you make regarding the implementation of the physical activity intervention program?

12. How would you describe the differences between program implementation during year one and year two, (including your perceptions of students)?

13. What are your perceptions of students’ opinions, reactions, and participation between year one and year two of the physical activity intervention program implementation?
APPENDIX E

FIELD / OBSERVATION NOTE TEMPLATE
**Field / Observation Note Template**

<table>
<thead>
<tr>
<th>Date:</th>
<th>School:</th>
<th>Time:</th>
<th>Grade:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity Duration:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls:</td>
<td>Boys:</td>
<td>Total Students:</td>
<td></td>
</tr>
<tr>
<td>AA:</td>
<td>LA:</td>
<td>W:</td>
<td>Other:</td>
</tr>
</tbody>
</table>

Redirects Before Activity: Redirects After Activity:

Behaviors Before Activity:

Behaviors During Activity:

Behaviors After Activity:

Special Factors to Note: