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Implementing a Summer Fitness Program to Enhance Fitness Test Scores

by

Keith A. Price

A Dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the

degree of

Doctor of Education

School of Education

Implementing a Summer Fitness Program to

Enhance Fitness Test Scores

by

Keith A. Price

This dissertation has been approved as partial fulfillment of the requirements for the

degree of

Doctor of Education

at Lindenwood University by the School of Education

Dr. Owen van den Berg, Dissertation Chair — Date: 3/25/2011

Dr. Deb Ayres, Committee Member — Date: 3/25/2011

Dr. Thomas Loughrey, Committee Member — Date: March 25, 2011

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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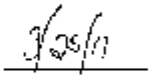
Signature:  Date: 

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I want to thank Mr. Benben and the Kirkwood School District for allowing us to use the facilities at North Glendale. This includes Jerry Kelley for turning the air conditioning on for us during the blazing heat. This made a huge difference for us and the success of the program.

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daily basis during the Summer Fitness Club, they helped set up the stations for me. I appreciate all that you have done for me to see this project through to the end.

Abstract

Presently, there is general disquiet about the poor fitness and obesity levels being displayed by young people in the USA. Given my concern about this as a Physical Education teacher, I conducted a qualitative action research project that involved running a six-week Summer Fitness Club for elementary students in Grades 1-5. The purpose was to see if this program could make a difference in the fitness test scores of the children and to monitor the implementation of that program.

The course was designed to operate four days a week for six weeks with each session lasting two hours. Each session consisted of station work designed to focus on increasing muscular strength, muscular endurance, and flexibility. In addition, each session would consist of cardiovascular endurance activities intended to provide the children with a moderate to vigorous workout. The children were tested four times: first, in the school-wide district battery of tests in March, 2010; second, halfway through the summer program; third, at the end of the summer program; and, fourth, in the school-wide district battery of tests in September, 2010, six weeks after the end of the summer program. In addition, data was collected in the form of peer observations, my personal field notes, and conversations with the participants.

The tests revealed that over the six-week Fitness Club period the children made excellent progress with their fitness, as measured by the batteries of tests. However, by the time they were tested in September, there had been some regression, although there was still encouraging improvement over their scores from the preceding March for many of the students.

The implications for this program are that it is possible for schools to find ways to contribute to reversing health and fitness trends in America. Providing opportunities for children to be physically active both during the school year and at the conclusion of the school year by implementing special summer programs are ways to enhance fitness levels of students. Teaching children the right ways to exercise will enhance their knowledge level, improve their level of fitness, and increase their desire to live a healthy lifestyle.

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Chapter 1: Background Information

The recent trend in public education in the state of Missouri has been to focus on basic competency levels in the core areas that are being assessed in standardized testing. Part of this movement may be because of the federal Elementary and Secondary Education Act, commonly referred to as No Child Left Behind. As a result, school leaders are seeking ways to increase instructional time in Math, Communication Arts, Social Studies, and Science by taking time away from Physical Education, Music, and Art. However, a study by Grissom (2005) supported the notion that academic learning is enhanced when students are physically active. In fact, Grissom (2005) said,

> Even though the benefits of physical exercise are acknowledged, physical education in public schools is viewed as an extracurricular activity and physical education teachers have experienced first-hand when money is tight and/or when there is pressure to improve test scores, physical education is one of the first activities to be cut back or eliminated. (p. 12)

However, much research supports the importance of physical education both for physical development and academic achievement. Castelli, Hilman, Buck, and Erwin concluded that "physical fitness was related to academic performance in third- and fifth-grade children, providing general support for the notion that children who are physically fit are more likely to perform better on standardized academic achievement tests" (2007, p. 248). Therefore, physical educators must continue to defend their programs and focus on educating each student about the importance of developing and maintaining sound health and fitness.

Although the National Association for Sport and Physical Education (NASPE) has stated their goals that each elementary student should have 150 minutes of physical education on a weekly basis, the state of Missouri does not follow those guidelines. Steve Williams, who is the Consultant for Fine Arts, Health and Physical Education, and Driver's Education for the Missouri Department of Elementary and Secondary Education, said,

> Missouri requires all school districts to implement a minimum of 150 minutes of physical activity each week for elementary students (grades K-6). The state-mandated 50 minutes of physical education per week and mandated 20-minute daily recess may both count toward this 150-minute total. (Williams, 2010, para. 1)

The problem with this policy is the assumption that the time children spend at recess counts towards their physical activity time. There are many times where students are just sitting, instead of being physically active during recess. Most schools in Kirkwood have 50-minute Physical Education classes which meet every other day, which means that in a two-week period, students attend Physical Education class for 250 minutes, or an average of 125 minutes a week, which is below the NASPE recommendation. One school has five half-hour blocks where the children attend four Physical Education blocks and one period of health. This all happens in a four day rotation. So clearly the time requirements are not met in Kirkwood.

Children also have the opportunity to participate in one 25-minute recess daily. Most students play and are active for the entire period. However, some students refuse to do anything other than wait in line to go inside. They feel they have more time to eat if

they arrive to the student café first. Therefore, the one place where teachers can make a difference in the school setting is by encouraging active participation and ensuring students have the skills and willingness to participate successfully. My observations led me to realize that special efforts were necessary to target programs specifically to those who exhibit the highest inactive behaviors.

On average, students in the Kirkwood School District attend school for 165 days a year. If each child had Physical Education daily for 30 minutes, each child would have a guarantee of 4,950 minutes of Physical Education per year. This would translate into 82 hours of Physical Education per year, not the ideal situation but a great beginning point. In addition, students receive 25 minutes for recess per day. This translated to 4,125 minutes of recess per year or 69 hours. Combined, students could be receiving 151 hours of activity time per year. Instead, our students are receiving 3,960 minutes or 66 hours of Physical Education per year including recess time.

At the end of the school day, many students arrive home from school and must prepare to attend a sporting event, dance class, gymnastic class, swimming lessons, golf lessons and the like. Still staying active, but is it enough? Students still need time to play and we, in our busy schedules, do not allow for that unstructured time. Sauerwein said, "Today's kids are so busy in scheduled activities that there is little time left to wander aimlessly to the local park or to just hang out with neighborhood friends" (2008, para. 4). Sauerwein continues that instead, "From birth on, many kids spend their free time in structured programs, carefully chosen by their parents" (2008, para. 4).

As a Physical Education teacher, a major concern is what happens to our students and their activity level during the summer months. Some children, because of negative

neighborhood environments, must stay inside at all times during the summer, or they must wait for their parent(s) to return from work before they can go outside to play. In other instances, children can go outside but their focus is on screen time, watching television or the computer. Not surprisingly, as evidenced by our fitness test scores, the scores for our least active children actually decrease from the spring fitness testing battery to the fall testing period.

My concerns about students and the activities, either active or sedentary, they participate in during the summer led to this study. I have observed decrements in fall fitness achievement when compared with spring fitness achievement, as measured by district fitness tests. What do children do all summer and how can they be enhanced physically, socially, and mentally, was the question I kept asking myself. I decided, therefore, to offer a Summer Fitness Club designed to enhance the fitness levels of the students as well as their scores on the state mandated fitness tests. I wanted to research "Over a six-week period can I help students improve their fitness scores on the fitness testing battery?" In addition, the implementation process will be described in great detail.

An additional rationale for this study is the increasing epidemic of obesity in the United States. As the baby boomers enter the phase of their life where they are becoming parents and grandparents, the rate of obesity in school-age children is increasing at an alarming pace. Results from the 2007-2008 National Health and Nutrition Examination Survey, using measured heights and weights, indicated that an estimated 17% of children and adolescents ages 2-19 years are obese (Centers for Disease Control & Prevention, 2010a, p. 1). This costly trend continues to climb in America at alarming rates. For

example, one study found that approximately 80% of children who were overweight at ages 10–15 years were obese adults at age 25 years (Whitaker & Wright, 1997).

People who are obese are at a higher risk of future health concerns including high blood pressure, heart disease, cancer, diabetes, sleep apnea, joint issues, and respiratory problems. In addition, medical professionals are concerned about their levels of self-esteem as well as psychosocial issues. If obesity rates continue to rise, so will the cost of health insurance. According to a national study, the medical expenses of people who are overweight (BMI 25–29. 9) or obese (BMI greater than 30) accounted for 9. 1% of total U. S. medical expenditures in 1998 and may have reached as high as $78. 5 billion ($92. 6 billion in 2002 dollars) (Finkelstein, 2003).

Due to these disturbing statistics, I offered a Summer Fitness Club that would last six weeks and meet four days a week for two hours. I implemented the program for this camp using many of the same techniques and strategies I normally taught on a daily basis at the local elementary school where I was employed as a Physical Education instructor. During each two-hour session, the students participated in both moderate and vigorous levels of activity. In addition, I had them work to improve their cardiovascular endurance or aerobic capacity, muscular endurance, muscular strength, and flexibility, all aspects of the state and district's fitness testing battery. My goal was not only to see improvement in the levels of fitness during the summer but also to see if the students could use the information learned over the summer to maintain or improve their fitness levels as the regular state fitness testing resumed eight to 10 weeks later in September 2010.

This program was implemented in the Kirkwood School District at North Glendale Elementary School. Kirkwood School District, which is located in Kirkwood,

Missouri serves approximately 5,000 students. The district comprises five elementary schools which serve Grades Kindergarten-5, two middle schools which serve Grades 6-8, and one high school serving Grades 9-12. Kirkwood is located in the greater St. Louis metropolitan area. Kirkwood is a basically conservative, middle to upper middle socioeconomic community that has a population of close to 28,000 people. One segment of the Kirkwood population, predominantly African-American and segregated, is of lower socioeconomic class. In addition, the district does participate in the voluntary desegregation program where residents of the City of St. Louis are transported to our school district as a consequence of a court-ordered desegregation program. North Glendale, one of the five elementary schools, served approximately 340 students at the time of this study. The school had three sections in each grade level except in the second grade where there were four classes. Each class had approximately 22 students.

I qualified as a Physical Education teacher in the State of Missouri in 1992 and have been teaching at North Glendale since 1994. I am one of two Physical Education teachers who together teach every class four times a week for a half hour block of time. In addition, each class has one 30-minute Health class. As a former athlete who loved sports but was not very good at them, I can understand how many of my students feel inadequate in physical activity. I can also understand the need for fitness programs for all that can help our country deal with its growing fitness crisis.

In May 2010, the White House Task Force on Childhood Obesity presented a report to President Obama. In this report, one main focus was what schools could do to increase children's activity levels. Schools are a key setting, given the significant portion

of time children spend there. Schools officials can undertake a combination of strategies and approaches to help children be more active including the following:

- Creating infrastructure and policies that increase access to and encourage physical activity for all students;
- Collecting valid and reliable data and using analytical tools and systems to understand student needs and fitness levels, and promoting approaches that are effective in changing physical activity behaviors and, ultimately, healthy outcomes;
- Maintaining strong Physical Education programs that engage students in moderate to vigorous physical activity for at least 50% of Physical Education class time;
- Providing a variety of activities and specific skills so that students can be physically active not just during class but throughout the day and year; and
- Providing qualified school professionals who are trained in teaching methods to engage students in PE, including for students who face greater barriers to activity. (White House Task Force on Childhood Obesity, 2010, p. 68)

Another study conducted by the Centers for Disease Control (CDC) reviewed literature about the importance of Physical Education, recess, and other classroom-based and extracurricular physical activity. The impact of physical activity on education-related outcomes was positive:

> Nineteen studies (reported in 14 articles) focused specifically on the relationship between academic performance and activities organized through school that occur

> outside of the regular school day. These activities included participation in school sports (interscholastic sports and other team or individual sports) as well as other after-school physical activity programs. All 19 studies examining the relationships between participation in extracurricular physical activities and academic performance found one or more positive associations. (2010c, p. 6)

Because of my concern of students failing their fitness tests at my school and the rates of obesity continuing to rise in the U. S., I decided to conduct a qualitative action research project. This project, a Summer Fitness Club, was designed to improve fitness scores and fitness levels of children and to assist in reducing obesity levels of children. The success of the program will be evaluated by reviewing the outcomes from the four fitness testing batteries and feedback received from colleagues who observed the program. In addition, to assist children with understanding the importance of eating a balanced diet, each student will be required to keep a food journal.

Therefore, this action research project will analyze the implementation of a Summer Fitness Club and the goal of improving fitness test scores and developing and maintaining sound health and body. The following chapter will discuss quality Physical Education, principles of fitness, the shape of Physical Education both in Missouri and the nation, concerns of Physical Education, and current trends in Physical Education.

Chapter 2: Literature Review

Why the Need for Physical Education?

This action research project looks at the issues involved in the implementation of a Summer Fitness Club to help improve fitness levels among students. To begin with, I examined the philosophical and foundational justifications for the need for this study. In a position statement presented on the importance of Physical Education, the leading organization for Physical Education, NASPE (2001) stated,

> Physical education plays a critical role in educating the whole student. Research supports the importance of movement in educating both mind and body. Physical education contributes directly to development of physical competence and fitness. It also helps students to make informed choices and understand the value of leading a physically active lifestyle. The benefits of physical education can affect both academic learning and physical activity patterns of students. (para. 1)

NASPE (2001) continued by discussing that there are many important physical, health, and mental benefits of a quality Physical Education program, and they were of prime importance in deciding to undertake this study.

> Physical education is unique to the school curriculum as the only program that provides students with opportunities to learn motor skills, develop fitness and gain understanding about physical activity. Physical benefits gained from physical activity include: disease prevention, safety and injury avoidance, decreased morbidity and premature mortality, and increased mental health. The physical education program is the place where students learn about all of the benefits

> gained from being physically active as well as the skills and knowledge to incorporate safe, satisfying physical activity into their lives. (para. 2)

The need for Physical Education continues to grow because of the health-enhancing benefits that have been so well documented for appropriate levels and types of physical activity. Children are becoming accustomed to a sedentary lifestyle, thus the need for more physical activity. According to the CDC, the following statistics from 2007 - 2008 show some frightening developments:

- Percent of adults age 20 years and over who are obese: 34%
- Percent of adults age 20 years and over who are overweight (and not obese): 34%
- Percent of adolescents age 12-19 years who are obese: 18%
- Percent of children age 6-11 years who are obese: 20%
- Percent of children age 2-5 years who are obese: 10%. (Ogden, 2010, p. 1)

Translate this information to the field of health care in America and the cost of health care for obese Americans, and the facts are staggering.

- Obesity is growing faster than any previous public health issue our nation has faced. If current trends continue, 103 million American adults will be considered obese by 2018.
- The U. S. is expected to spend $344 billion on health care costs attributable to obesity in 2018 if rates continue to increase at their current levels. Obesity-related direct expenditures are expected to account for more than 21 percent of the nation’s direct health care spending in 2018.
- If obesity levels were held at their current rates, the U. S. could save an estimated $820 per adult in health care costs by 2018 - a savings of almost $200 billion

dollars. (United Health Foundation, The American Public Health Association, & Partnership for Prevention, 2009, p. 2)

Regardless of the current federal mandate to improve test scores and the economic crisis facing public schools, every student must be allowed to participate in a quality Physical Education program. This is necessary to provide the health benefits that serve to deter the development of obesity and other conditions that put a child at risk for health consequences and possible academic deficits. A Summer Fitness Club would only assist in this process. NASPE (2010) suggested that there are four components to a quality Physical Education program: opportunity to learn, meaningful content, appropriate instruction, and student and program assessment.

These four components of a quality Physical Education program have been expanded by NASPE (2010). An *opportunity to learn* recommended that all elementary students should have Physical Education for 150 minutes per week and that the class sizes stay consistent with the class size in the core classes. Currently, children at this school attend Physical Education class for four 30 minute blocks each week, clearly below the recommended minutes for a quality Physical Education program, although we do have a district mandated curriculum to teach based on the state Grade Level Expectations (GLE). A summer Fitness Club would allow students more Physical Education minutes. Additionally, the class must be taught by a qualified specialist who has adequate equipment and facilities. Because we do not have 150 minutes per week for the program in the elementary school in which I work, I saw additional opportunities to learn, as provided in this summer program, as a necessary addition to the school year.

If a quality Physical Education program has *meaningful content* then the program follows a chronological curriculum that is established on state and/or national standards that cover motor skills, fitness education, cognitive perceptions about motor skills and fitness, social and cooperative skills, and an understanding of appropriate physical activity now and for the rest of the students' life (NASPE, 2010).

It was my feeling that not all students were provided the opportunity to focus on specific demonstrated needs, so in this component, the summer program could address a concern not fulfilled in our regular program. In order to be considered a quality Physical Education program, the curriculum must include *regular assessment*. Assessment will help monitor both the strength of the program and the growth of all students. Quality Physical Education programs should develop a curriculum in which the objectives allow all students to participate in each skill as many times as possible (NASPE, 2010).

As previously mentioned, assessment is an important part of a quality Physical Education program. Assessment must occur continuously throughout the school year, because student progress should be monitored both formatively and summatively. The value of regular assessment practice includes the ability to use assessments as a diagnostic tool, identifying those with special needs. Teachers use summative evaluations to observe the whole picture to establish the effectiveness of the program while a formative assessment is performed to provide ongoing feedback on performance. Both are essential to evaluate the usefulness of the program. Assessments used in a quality Physical Education program should be aligned with the state and national standards. Finally, at least twice per year, all stakeholders, including administrators, teachers, and

parents should have an opportunity to evaluate the Physical Education program (NASPE, 2010).

Physical Education course work is no longer dedicated to teaching only sport skills, because "Physical Education has been challenged to produce programs that will develop positive activity patterns that youths will carry into adulthood and to foster dispositions that value physical activity" (Lee, 2004, p. 21). To develop these patterns, it is necessary to teach the concepts and provide opportunities for regular participation that maximize the possibility of success in reaching the overall goals.

The trend in Physical Education is therefore moving away from sport specific units and focusing on skills that tie into different sports. For example, instead of a softball unit, students are learning how to throw and catch many different types and sizes of balls such as footballs, playground balls, tennis balls, and the like. The aspiration is to educate children in the fundamental concepts and skills so they can incorporate these skills throughout their life. The focus in Physical Education now is for students to learn the importance of taking care of their bodies and leading a healthy lifestyle. The Summer Fitness Club would provide more opportunity to learn life-enhancing skills.

According to NASPE (2001), the goal of an elementary school Physical Education program is to emphasize

> …the development of fundamental locomotor, non-locomotor, and manipulative skills through the main content areas of educational games, dance, and gymnastics. The movement framework, (i.e., body, space, effort, and relationship) is also a part of the core content and is the basis for developing, expanding, and refining children's range of motor skills and awareness. Quality instruction by

> physical education professionals is critical if children are to develop fundamental motor patterns (e. g. jump, throw, skip, hop, catch, and kick). The motor skill foundations established during the elementary grades may enhance children's social, cognitive and physical development and increase the likelihood of continued interest and participation in physical activity. Fitness at elementary grades is supported by a rich experience in many basic movement forms. (para. 3)

This particular project was designed to promote these skills, while teaching concepts about fitness, nutrition, and applications to apply these concepts and skills into a health-enhancing lifestyle. An alarming trend in schools across America is the elimination of Physical Education minutes in order to spend more instructional time on the "core areas" of education. In schools across the United States, in spite of strong evidence supporting the role of healthy fitness achievement in enhancing academic achievement,

> Physical education has been substantially reduced —and in some cases completely eliminated — in response to budget concerns and pressures to improve academic test scores. Yet the available evidence shows that children who are physically active and fit tend to perform better in the classroom and that daily physical education does not adversely affect academic performance. Schools can provide outstanding learning environments while improving children's health through physical education. (Trost, 2009, para. 1)

With his work for the Robert Wood Johnson Foundation, Trost (2009) in his article entitled, *Active Education: Physical Education, Physical Activity and Academic Performance* stated that it is a travesty in public education that, "Budgetary constraints

and increasing pressure to improve standardized test scores have caused school officials to question the value of Physical Education and other physical activity programs" (para. 4). As school districts feel pressure to increase standardized test scores, they scramble to find ways to increase the educational minutes in "core areas" that are tested. Districts are allocating their resources toward the tested areas as minutes and funding for special areas, such as Physical Education, decrease.

In the American Heart Association's *Circulation*, Pate, Davis, Robinson, Stone, McKenzie, and Young (2006) suggested that,

> Traditionally, students have engaged in physical activity during recess breaks in the school day and by walking or riding bicycles to and from school. However, as we move into the 21st century, alarming health trends are emerging, suggesting that schools need to renew and expand their role in providing and promoting physical activity for our nation's young people. (p. 1)

School districts, feeling pressure to improve test scores, will employ untraditional actions. Students may work one-on-one with an adult in the building or may work in small groups to enhance learning. School districts may spend thousands of dollars to bring in the newest, latest, and greatest program purported to augment learning. Schools may group students based on their presumed abilities, or students may be pulled from Physical Education or recess to spend more time on the core learning that is deemed necessary for state standardized testing. Yet research underlines the importance of physical activity in the cognitive functioning ability of students.

Shephard and Trudeau (2005) refered to the *1977 Trois-Rivières Physical Education* study conducted in Québec, Canada. The control group received Physical

Education as normal, not on a daily basis. The experimental group received Physical Education on a daily basis, and their academic achievement improved at a higher rate than that of the control group (p. 112). Similarly, NASPE, in a position paper from 2001, suggested

> Research has demonstrated that children engaged in daily physical education show superior motor fitness, academic performance, and attitude towards school versus their counterparts who did not participate in daily physical education. Physical education learning experiences also offer a unique opportunity for problem solving, self-expression, socialization, and conflict resolution. (p. 2)

According to the National Association of State Boards of Education (NASBE), "Physical Education is an integral part of the total education of a child. Well-planned, well-implemented physical education programs can provide many important benefits for young people" (2008, p. D13). Physical education not only helps cognitively, but physical activity also offers many other benefits. The 1996 *Physical Activity and Health: A Report of the Surgeon General* argues that taking part in physical activity:

- Reduces the risk for heart attack, colon cancer, diabetes, and high blood pressure, and may reduce the risk for stroke
- Helps to control weight
- Contributes to healthy bones, muscles, and joints, and helps relieve the pain of arthritis
- Helps to reduce falls among older people
- Reduces anxiety and depression
- Is associated with fewer hospitalizations, physician visits, and medications, and

- Provides therapeutic benefits for people with chronic conditions, including heart disease, high cholesterol, and osteoporosis. (as cited in Tellijohanne, Symons, & Pateman, 2008, p. 190)

In addition, they argued that benefits for school-aged children and youth who participate in regular physical activity include that it:

- Reduces total body fat in overweight children and adolescents
- Improves metabolic syndrome (clustering of high blood sugar, high blood pressure, high cholesterol, and abdominal obesity)
- Helps reduce high blood pressure in youth with mild hypertension
- Improves fitness among youths with asthma
- Helps reduce anxiety and depression
- Enhances self-concept
- Improves muscular strength and endurance. (as cited in Tellijohanne, Symons, & Pateman, 2008, p. 190)

So, the evidence is compelling: physical activity is important to one's health and living a sedentary life can lead to many costly illnesses. According to the United States Department of Health and Human Services (2009), some of the major research findings on the health benefits of physical activity are that:

- Regular physical activity reduces the risk of many adverse health outcomes
- Some physical activity is better than none
- For most health outcomes, additional benefits occur as the amount of physical activity increases through higher intensity, greater frequency, and/or longer duration

- Most health benefits occur with at least 150 minutes a week of moderate-intensity physical activity, such as brisk walking. Additional benefits occur with more physical activity
- Both aerobic (endurance) and muscle-strengthening (resistance) physical activity are beneficial
- Health benefits occur for children and adolescents, young and middle-aged adults, older adults, and those in every studied racial and ethnic group
- The health benefits of physical activity occur for people with disabilities
- The benefits of physical activity far outweigh the possibility of adverse outcomes. (p. 1)

If a student participates in a quality Physical Education program that provides opportunity for them to learn and also imparts meaningful content with appropriate instruction and assessment, the child will benefit. These benefits include increased cognitive ability, improved levels of health, lower amounts of stress, and an increase of self-esteem. Therefore, Physical Education is a unique characteristic of a child's education.

Principles of Fitness

According to the United States Department of Health and Human Services in their *2008 Physical Activity Guidelines for Americans*:

> Regular physical activity in children and adolescents promotes health and fitness. Compared to those who are inactive, physically active youth have higher levels of cardiorespiratory fitness and stronger muscles. They also typically have lower

> body fatness. Their bones are stronger, and they may have reduced symptoms of anxiety and depression. (2008, p. 15)

So, what constitutes physical activity? “Physical activity simply means movement of the body that uses energy. Walking, gardening, briskly pushing a baby stroller, climbing the stairs, playing soccer, or dancing the night away are all good examples of being active" (United States Department of Agriculture, 2009, para. 1). However, the Physical Education teachers must be sure the students’ heartbeats increase. Students should be reminded that even though they are moving, if their heart rate is not increasing, they should not count the activity as part of their exercise (United States Department of Agriculture, 2009, para. 2). The Summer Fitness Club would allow minutes for students to increase their heart rate at a time when they tend to be inactive.

In May 2010, in the White House Task Force on Childhood Obesity to President Obama, the U. S. Department of Health and Human Services provided some key guidelines for children and adolescents related to physical activity. Those guidelines included the following:

- Children and adolescents should do 60 minutes (1 hour) or more of physical activity daily
- Moderate- or vigorous-intensity aerobic physical activity (such as running, hopping, skipping, jumping rope, swimming, dancing, and bicycling) should comprise most of the 60 or more minutes a day. Vigorous-intensity physical activity at least 3 days a week

- Muscle-strengthening physical activity (such as playing on playground equipment, climbing trees, playing tug-of-war, lifting weights, or working with resistance bands) should be included at least 3 days of the week
- Bone-strengthening physical activity (such as running, jumping rope, basketball, tennis, and hopscotch) should be included at least 3 days of the week
- It is important to encourage young people to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety. (White House Task Force on Childhood Obesity, 2010, p. 65)

The second bullet suggested that the fitness activity needs to be moderate- or vigorous-intensity aerobic physical activity in order to provide health-enhancing benefits. According to the American College of Sports Medicine, aerobic fitness is the "ability to perform large, muscle, dynamic, moderate to high intensity exercise for prolonged periods" (ASCM, 2000, p. 68). Figure 1 breaks physical activity into four categories, then lists activities which children can perform to improve that area of their physical being. For example, children who need to improve their muscle-strength could look at the chart and choose to perform modified push-ups.

Similarly, the American Academy of Pediatrics refers to aerobic capacity as the capability to "sustain a certain level of aerobic activity for a certain length of time. An aerobic activity is one that requires oxygen exchange in the blood to a greater degree than other activities, such as running versus strength training" (as cited in Stricker, 2010, para. 1).

Type of Physical Activity	Age Group – Children
Moderate – Intensity Aerobic	• Active recreation, such as hiking, skateboarding, rollerblading • Bicycle riding • Brisk walking
Vigorous – Intensity Aerobic	• Active games involving running and chasing, such as tag • Bicycle riding • Jumping rope • Martial arts, such as karate • Running • Sports such as soccer, ice or field hockey, basketball, swimming, tennis • Cross-country skiing
Muscle – Strengthening	• Games such as tug-of-war • Modified push-ups • Resistance exercises using body weight or resistance bands • Rope or tree climbing • Curl-ups (curl-ups or crunches) • Swinging on playground equipment/bars
Bone – Strengthening	• Games such as hopscotch • Hopping, skipping, jumping • Jumping rope • Running • Sports such as gymnastics, basketball, volleyball, tennis

Figure 1. Different types of physical activity are listed with suggested activities. Adapted from "Chapter 3; Active Children and Adolescents," from the U. S. Department of Health, & Human Services. 2008, Health. gov. Copyright 2008 by the U. S. Department of Health and Human Services.

To assist in this process the American Heart Association has teamed with the American Diabetes Association and American Cancer Society to provide some facts about Physical Education in schools. They suggested that children spend at least 50% of their time in Physical Education in moderate to vigorous physical activity (MVPA) (n.d.).

Along the same lines, in their book entitled, *Physical Best Activity Guide,* NASPE said that aerobic fitness is

> the ability of the hearts, lungs, and muscles to perform activity over a sustained period. The heart rate represents how fast the heart pumps blood (which carries oxygen) through the body. As the body requires more oxygen to be transported to the muscles, the heartbeats faster and the person breathes harder. (NASPE, 2005, p. 25)

Table 1

Heart Rate Zones for Children Ages 6 - 11

Age	Estimated Maximum Heart rate	60 – 70% of Maximum Heart Rate	70 – 80% of Maximum Heart Rate	80+% of Maximum Heart Rate
6	214 bpm	128 bpm – 150 bpm	150 bpm – 171 bpm	171 bpm – 214 bpm
7	213 bpm	128 bpm – 149 bpm	149 bpm – 170 bpm	170 bpm – 213 bpm
8	212 bpm	127 bpm – 148 bpm	148 bpm – 170 bpm	170 bpm – 212 bpm
9	211 bpm	127 bpm – 148 bpm	148 bpm – 169 bpm	169 bpm – 211 bpm
10	210 bpm	126 bpm – 147 bpm	147 bpm – 168 bpm	168 bpm – 210 bpm
11	209 bpm	125 bpm – 146 bpm	146 bpm – 167 bpm	167 bpm – 209 bpm

Note. Adapted from "Heart Rate Calculator," from Polar USA, (2003)

One strategy to help students understand the notion of aerobic exercise is to have them learn and recognize what their target heart rate zone is and how to measure their heart rate. It is important for children to learn their target heart rate zone and the significance of it for increasing cardiac efficiency. This approach requires measuring pulse rate periodically as a person exercises and staying within 50 to 85% of the maximum heart rate (American Heart Association, 2010).

Polar USA (2003, paras. 2-3), a leading maker of heart rate monitors in the world, has a calculator to calculate the heart rate zones for children based on their age. Table 1 shows the target heart rate zone for children ages six through 11. To help understand the chart, there are three key target zones that help students achieve specific goals.

- 60-70% Lose Weight or Recover (more quickly from exercise)
- 70-80% Improve Aerobic Fitness & Maintain Health
- 80+ % Increase Athletic Performance

Because of budgetary constraints in public education, purchasing heart rate monitors may not be a priority. Therefore, children need to learn how to take their heart rate. There are several ways to do so. In order to take pulse the Cleveland Clinic (2010) suggests a person does the following:

- Place the tips of your index, second, and third fingers on the palm side of your other wrist, below the base of the thumb [radial artery]. Or, place the tips of your index and second fingers on your lower neck, on either side of your windpipe [carotid artery]. (p. 1)
- Press lightly with your fingers until you feel the blood pulsing beneath your fingers. You might need to move your fingers around slightly up or down until you feel the pulsing. (p. 1)
- Use a watch with a second hand, or look at a clock with a second hand. (p. 1)
- Count the beats you feel for ten seconds. Multiply this number by six to get your heart rate [pulse] per minute. (p. 1)

Furthermore, to make monitoring heart rate easier for children, they could count their beats for six seconds and then multiply that number by 10, or they could just add a

zero to their number. For example, if a student places fingers on the carotid artery for 10 seconds and counts 12 beats, the heart rate is 72 beats per minute (bpm). If a child is exercising and measures a pulse and counts 13 beats for six seconds, the heart rate would be 130 bpm.

Once the students are able to measure their heart rate, they could then use that information to determine whether they were working hard enough or if they needed to work harder. For example, imagine children playing an aerobic game of tag. The game involves running, chasing, fleeing, and skipping. After playing the game for eight minutes, the teacher stops the game and asks the children to measure their heart rate for 10 seconds. A 10-year-old student counts 18 bpm and realizes his heart rate is 108 bpm. He then looks at the chart from Polar USA (2003) and determines that his heart rate is beating lower than his required workout zone. This knowledge helps the student realize he or she is not working hard enough and must work harder. Seven minutes later the game is stopped to measure heart rate. The same 10-year-old student counted 25 bpm and realized his heart rate was now 150 bpm. He could look at the Polar USA (2003) chart and determine that he was working in the 70% - 80% range, which is an acceptable range.

Ideally, if a Physical Education program does not have the ability to purchase heart rate monitors, the teacher should have their students perform this exercise a few times during class period on a daily basis. Then students should be able to determine whether their effort is benefitting them or not, so they can make an adjustment to make sure their workout is sufficient enough.

Trends in Physical Education in the Nation and State of Missouri

In 2010, NASPE and the American Heart Association released their report titled *Shape of the Nation Report: Status of Physical Education in the USA,* an updated version of a report first published in 2006. This report provided a view of Physical Education and its current role in the American education system. Some of the key developments of the new report included incremental improvements in the number of states that now require Physical Education (17% increase) and student assessment in Physical Education (26% increase). This is great news as the need for physical activity and physical education continues to grow. However, the report did provide disappointment: more states now allow waivers and exemptions from Physical Education classes than in 2006 (77% increase). In addition, there has been no progress in providing daily Physical Education in all Grades K-12 (NASPE & American Heart Association, 2010).

Additional findings from the *Shape of the Nation Report: Status of Physical Education in the USA* include:

- Only five states require Physical Education in every grade K-12
- Only one state aligns with the nationally recommended 150 minutes per week of Physical Education in elementary school and 225 minutes per week in middle and high school
- More than half of all states (32) permit waivers and/or exemptions for students from taking PE, a 77% increase from 2006
- Forty-eight states (94%) have their own state standards for Physical Education, but only 34 states (67%) require local districts to comply or align with these standards

- Only 19 states (37%) require some form of student assessment in Physical Education
- Fewer states (14 vs. 22 in 2006) require Physical Education grades to be included in students' grade point averages
- Finally, only 13 states (25%) require schools to measure Body Mass Index (BMI) and/or height and weight for each student. (NASPE & American Heart Association, 2010, para. 2)

A reading of the Missouri Department of Elementary and Secondary Education's (MODESE) school improvement document makes its view of the importance of Physical Education clear. "The healthy, physically active child is more likely to be academically motivated, alert and successful in school and more likely to establish habits of behavior that will foster good health throughout life thereby enhancing the quality of life" (MODESE, 2008, para. 1). However, as the financial difficulties of Missouri continue and the emphasis continues to be on increasing test scores to meet the requirements of the federal Elementary and Secondary Education Act, a greater focus on physical fitness and health is unlikely in the near future.

NCLB requires academic growth for students. Each year the expectation is higher than the previous year. In order to provide as much instructional time for students other programs suffer:

> Providing adequate opportunities for physical activity during the school day through physical education classes and recess time is often difficult because of competition for instructional time needed to meet the demands created by state and national academic standards. The federal No Child Left Behind (NCLB) law

> holds schools accountable for poor standardized test scores among students. NCLB has added four additional reading tests for grades 3-8, four additional math tests for grades 3-8, and three new science tests for grade spans 3-5, 6-9, and 10-12. The increased number of tests coupled with the monetary and other penalties imposed for not meeting certain test score standards has prompted many school districts and local education agencies to divert resources away from subject areas such as physical education instructions to core, "tested" courses. (Missouri Department of Health & Senior Services, 2006, p. 3)

Physical Education has been affected in another way in the state of Missouri. In 2000, while all other core areas were assessed in the Missouri Assessment Program (MAP), a Physical Education and Health assessment was piloted. This written test was a required assessment in 2001. The following year, funding was not available and so the Physical Education/Health exam was eliminated, and it has not been revived.

Even with the MAP Physical Education and Health assessment being eliminated, the state requires school districts to report their fitness scores for their fifth grade and ninth grade students, although it does not require any specific levels of achievement. According to the state of Missouri, there are four core fitness areas that must be tested each year. The four areas are a) aerobic capacity, b) abdominal strength/endurance, c) upper body strength/endurance, and d) flexibility (MODESE, 2000, p 4).

As the rate of Obesity in America steadily climbs, the need for Physical Education continues to increase. Although some states understand the importance of Physical Education and require it for their students, others need to embrace the need for Physical Education and modify their grade level expectations and curriculum to devote more time.

In addition, school districts must continue to value Physical Education and its place in academia.

Concerns of Physical Education

Since children learn a great deal when they are young, it is important to educate them to the significance of Physical Education and physical activity with the goal of using this knowledge to continue to be physically active. However, in 2007, the California Endowment conducted a study of 77 California schools to improve Physical Education and to decrease the rate of obesity. It was found that quantity and quality have declined, and may adversely affect the learning environment, especially in low-income schools.

For instance, one concern was that elementary schools were not providing the required number of minutes for Physical Education (The California Endowment, 2007, p. 1). As NASPE reports, as school districts continue to seek ways to save money, "One curricular area that traditionally draws consideration for reduction is physical education. The reason might be a lack of understanding about the purpose and benefits of a quality physical education program" (n.d., p. 1). It needs to be reiterated that Physical Educators must be proactive regarding the need and importance of Physical Education. If Physical Education minutes are increased and lifetime skills are taught, children are more likely to understand the importance of lifetime wellness. Armed with this knowledge, children can progress through life being physically active.

Another concern from the California Endowment (2007) is that, "Most time during Physical Education is spent being sedentary; only four minutes of every half hour involves vigorous activity" (p. 1). The article suggests that while students are

participating in the activities they spend most of their time standing waiting their turn. As the focus shifts toward teaching lifetime skills and the importance of Moderate-to-Vigorous Physical Activity (MVPA) the amount of time spent being active should increase.

Long before the economy could be blamed, cutbacks were being made in school districts across America. One area of education to see an increase is the number of students in a class. The California Endowment study suggests that "Bigger class sizes translate to less active Physical Education classes on average; students in classes with more than 45 students are half as active as students in smaller classes" (2007, p. 1). The American Alliance for Health, Physical Education, Recreation, & Dance in their *2001 Shape of the Nation Report* suggests that class size for Physical Education should be, "the same as for any other subject. Large classes put students at greater risk of injury as well as reducing learning and teacher feedback" (2002, p. 4).

Another concern of the California Endowment (2007) study was that, "Students in lower income schools spend less time being active in PE" (p. 1). In many cases, due to lack of funding, students from low socioeconomic districts are being instructed by under-qualified teachers who are not familiar with the curriculum. Instead of teaching curriculum, they are providing supervision without any instruction.

The California Endowment (2007) also suggested that the "level of activity in Physical Education, not total Physical Education time, is linked to student fitness levels" (p. 1). As previously mentioned, class time needs to be devoted to MVPA. Higher levels of physical activity lead to higher levels of fitness. According to a report from United States Department of Health and Human Services (2010), Physical Education is an

"effective strategy to increase physical activity among young people" (p. 1). The recommendations are that "students engage in MVPA for at least 50% of the time they spend in PE class—one of the most critical outcome measures in determining the quality of a PE program" (2010, p. 1).

According to the California Endowment (2007), students participating in MVPA in their Physical Education classes have higher levels of academic performance because of their high levels of activity in Physical Education. According to The James B. Hunt, Jr. Institute for Educational Leadership and Policy (2007), between the years 1967 and 2006 fourteen published studies which analyzed data from approximately 58,000 students showed "the link between overall participation in physical activity and academic performance. Eleven of those studies found that regular participation in physical activity is associated with improved academic performance" (p. 2).

Chapter 3: Logistics – Program Setup

Rationale for the Study

During the past 18 years, I have been both a Physical Education teacher and a Health educator. During this journey, I have encountered thousands of elementary aged children, ranging from those who could be professional athletes to those who are so sedentary that I need to challenge them on to move during class. I have always been perplexed to discover why some are so active while others would rather do nothing. Both physical educators and members of the health care community know the health benefits of being active, and now we realize the health risks that come as a result of being inactive. To date, I have not discovered the answer, but this project was an effort on my part to expand my understanding of the dynamics associated with the issues described in this study. Be that as it may, the CDC has stated that in the United States of America:

> Obesity is a serious health concern for children and adolescents. Results from the 2007-2008 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 17 percent of children and adolescents ages 2-19 years are obese. Between 1976-1980 and 1999-2000, the prevalence of obesity increased. Between 1999-2000 and 2007-2008 there was no significant trend in obesity prevalence. (2010a, p. 1)

Furthermore, the CDC in their report *Childhood Weight and Obesity* continued by stating that, "Among pre-school age children 2-5 years of age, obesity increased from 5 to 10. 4% between 1976-1980 and 2007-2008 and from 6. 5 to 19. 6% among 6-11 year olds" (2010a, para. 2).

These trends are distressing. As a Physical Educator, I am greatly concerned about obesity levels for children in my class. Twenty-four percent of my students were considered overweight with 7% of them being considered obese following the Test One fitness testing battery. Research suggests that if children are in the 85th percentile for obesity during their younger ages there is a very great chance they will also be obese as adults. Whitaker and Wright (1997) concluded that,

> Obese children under three years of age without obese parents are at low risk for obesity in adulthood, but among older children, obesity is an increasingly important predictor of adult obesity, regardless of whether the parents are obese. Parental obesity more than doubles the risk of adult obesity among both obese and non-obese children under 10 years of age. (para. 1)

As an experienced teacher, I have observed a decrease in regular activity and an increase in body weight, improper eating patterns, and physical inactivity. As a Physical Educator, my job is to educate my students about the importance of developing the necessary knowledge and personal skills that will allow them to develop both an active lifestyle and healthy eating habits. With these alarming trends, the focus of Physical Education should shift to developing healthier bodies rather than teaching children the importance of certain sport-specific skills as was common practice in the past. Therefore, my intention was to develop and implement a Summer Fitness Club designed to help children understand the importance of fitness and nutrition and also improve their state fitness test scores.

For me, this project began years ago as I was trying to decipher, “What do my students do during the summer and how does this contribute to their fitness scores either

improving or decreasing?" The Physical Education teachers in our school district administer the state and district-required fitness test twice a year, first in September and then in March of the subsequent year. So, for the most part, the children are tested every six months. During the school year, fitness scores often improve, but all too often following the summer months, the scores decline. My teaching partner and I are able to tailor our Physical Education lessons, during the school year, to meet the needs of our students.

One option available to staff members in our building is the school's Response to Intervention (RTI), which is used to "identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions" (National Center on Response to Intervention, n.d., para. 1), to determine what might be causing difficulty for the students. For example, a student may have difficulty understanding the lessons. We could have a discussion with our RTI team to determine the issue and figure an action plan before the student slips further behind. This is a proactive way of problem solving with the goal of enhancing the success of each and every student. However, during the summer, RTI is not an option; therefore, the problem then becomes, what happens during the summer months when children have a multitude of opportunities for screen time and sedentary living?

Every year, during their last Physical Education class of the year, we ask our students about their summer plans and what they hope to accomplish, in terms of their fitness, over the summer. Most students declare their family will be going on a vacation or they will be visiting Six Flags, the St. Louis Zoo, or the Magic House. Seldom, if ever, do they mention their plans to exercise or ways to improve their level of fitness or to

engage in active play and physical activity on a daily basis. With the national trends of increased childhood obesity, I determined it was time to develop and implement a program to help our students develop the knowledge, skills, and lifestyle behaviors that could help them live healthy, productive lives.

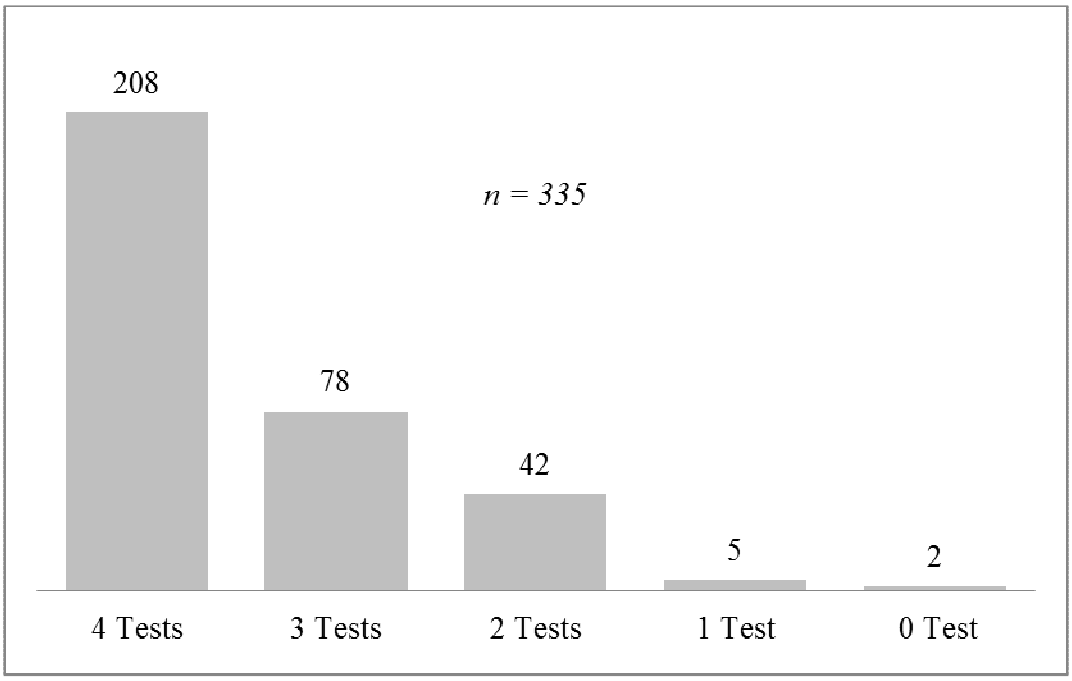

Figure 2. Number of children At North Glendale who passed state and district required fitness tests (March, 2010).

Viewing Figure 2, it can be surmised that 62% of all students had passed four of the tests in the Test One battery. However, I was excited at the concept of a Summer Fitness Club that would motivate and encourage my students who had failed two or more items in the Test One battery to improve their level of fitness and their understanding of a healthy lifestyle. Since 14% of my students (49 out 335) had failed at least two of the four fitness tests in March, 2010, I could not help but think about how many of them could benefit from some type of extra physical fitness activity (see Figure 2).

Table 2

Summary of Children's BMI-for-Age (March, 2010)

	Boys	Girls	Total
Number of children assessed:	166	169	335
Underweight (< 5th percentile)	1%	4%	3%
Normal BMI (5th - 85th percentile)	72%	73%	73%
Overweight or obese (≥ 85th percentile)	27%	22%	24%
Obese (≥ 95th percentile)	8%	6%	7%

Additionally, I found that 24% of all students tested had a Body Mass Index (BMI) that ranked as being overweight, above the 85th percentile for their age, with 7% being classified as obese, or above the 95th percentile (see Table 2 and Figure 4). Of the 49 students who failed at least two items of the Test One battery, 41% or 20 were considered overweight while 20% or 10 students were considered obese. Since I had a goal of improving fitness test scores, BMI was not a consideration when creating my list of potential participants.

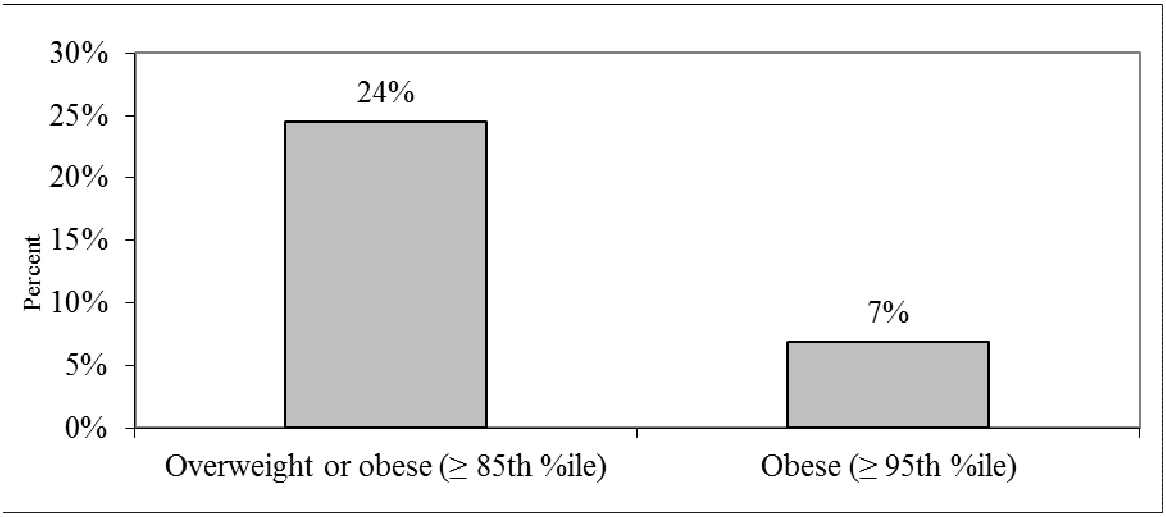

Figure 3. Prevalence of overweight and obesity of all students (n = 335) at North Glendale Elementary in March 2010.

Moreover, as Figure 4 shows, the male students had a higher prevalence of being overweight or obese than the females, which agrees with the current trend in the USA (see Figure 5) of non-Hispanic white students.

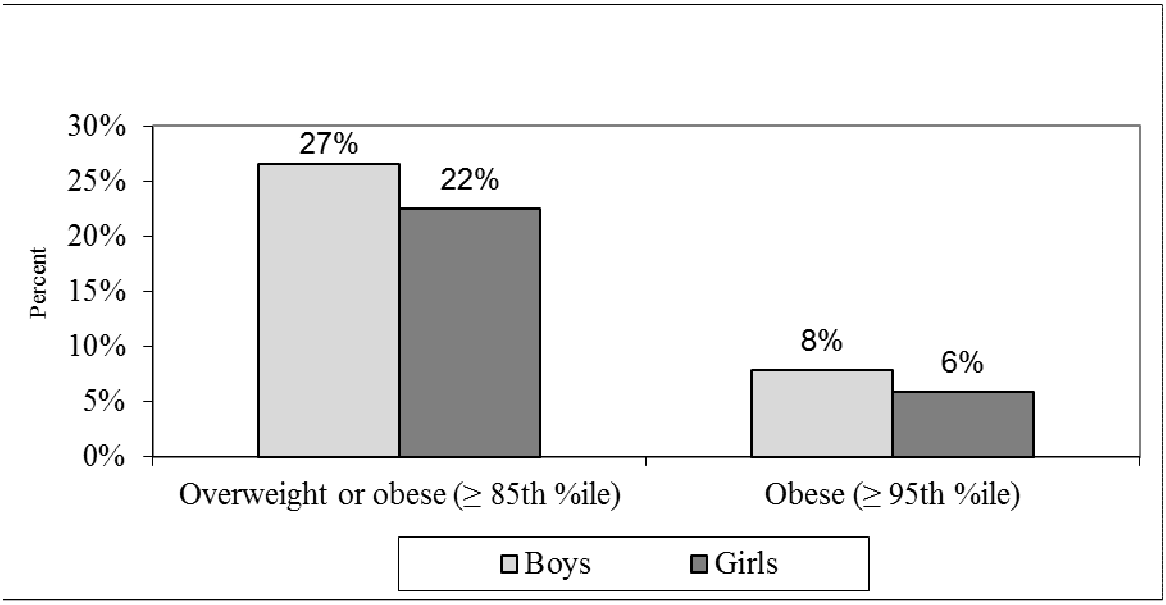

Figure 4. Prevalence of overweight and obesity of male and female students (n = 335) at North Glendale Elementary in March, 2010.

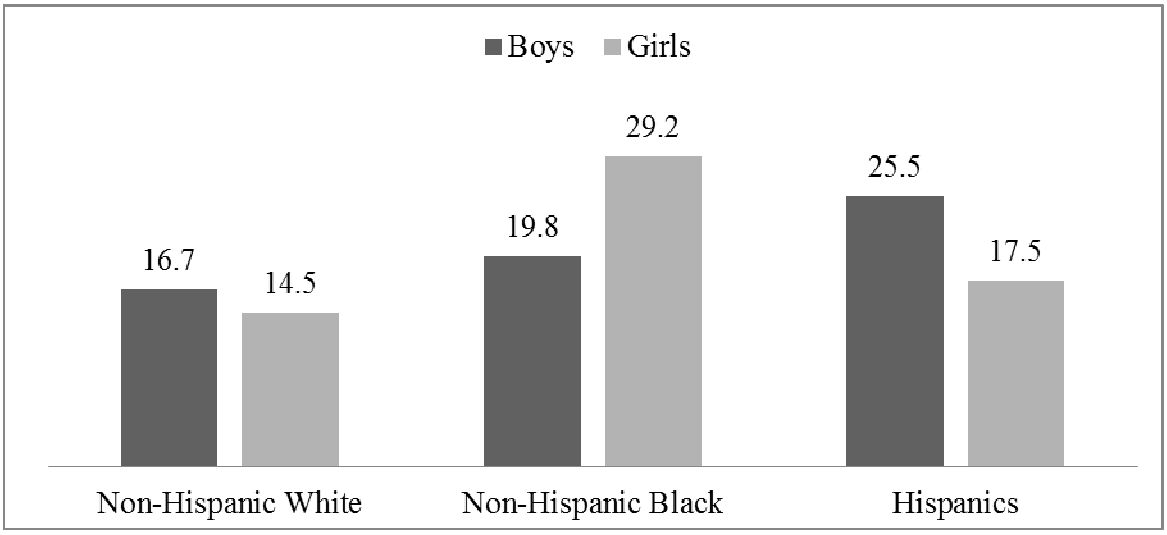

Figure5. Childhood obesity rates by race, ethnicity, and gender, 2007-08. Adapted from "Solving the Problem of Childhood Obesity Within a Generation," by White House Task Force on Childhood Obesity, Report to the President, 2010, p. 5.

Therefore, I determined that a targeted intervention during the summer months might help children who had passed only two of the four items on the Test One battery

achieve better levels of physical activity, the results hopefully yielding a reduction in BMI.

In the following sections of this chapter, I will discuss the following: the recruitment of the participants and their characteristics, the securing of the physical plant, the design of the daily program, and the rationale for action research.

Gaining Permission and Building Selection

Since this study was going to be conducted during the summer months when the weather can be very hot, rainy, and humid, I felt it was important to use an indoor facility, preferably with air-conditioning that could provide a controlled environment. In order to use one of our district buildings during the summer, I had to obtain permission from the district Superintendent, Dr. Tom Williams. As I explained my plan to Dr. Williams, he seemed supportive of the study and the potential it held. He mentioned that he believed there was the potential that the program could become a permanent endeavor in Kirkwood every summer. He enthusiastically agreed to allow me to use one of the buildings in our district, also suggesting I discuss my idea with the Assistant Superintendents in Kirkwood.

This led to my discussion with Dr. Deborah Holmes, Assistant Superintendent of Curriculum and Development in the Kirkwood School District. Although Dr. Williams had approved my venture, Dr. Holmes essentially was the person who had final approval of my project. We discussed the merits of the study, increasing physical fitness scores and increasing awareness to a healthy lifestyle, and the concept of the study.

Additionally, I told her that I would like to extend an invitation to all 49 students who had failed at least two of the four fitness test of our semi-annual fitness testing

battery. The students who fell into this category included mainly those from our school community who resided in our school boundaries but also seven children who resided in the city of St. Louis and participated in the voluntary transfer program. Therefore, transportation would be an issue and a roadblock for some of the projected participants during the summer. I asked Dr. Holmes to consider the possibility of the district providing busing for our city residents. I felt comfortable asking this since I believed the study could help each student improve his or her fitness level and understanding of the importance of a healthy lifestyle.

With Dr. Holmes' approval, a key part of this project would be determining the location of my study. Our school district consisted of five elementary schools, two middle schools, and one high school. Ideally, I wanted to conduct the program at the high school where I would have access to a state-of-the-art fitness center with many cardiovascular machines in addition to many weights. However, the students in my study probably were not of a size to use this equipment appropriately. Furthermore, there were plenty of outdoor facilities that I could use. On the other hand, if I had to do the program at my elementary school I would have limited equipment and resources available to me, including not having access to cardiovascular equipment. This would be a disadvantage because some of the students who had failed two fitness tests would probably have difficulty maintaining their level of cardiovascular endurance and so they needed to be able to focus on cardiovascular activities to improve their endurance.

Unfortunately, Dr. Holmes was not able to accede to my request to conduct my study at the high school because that building hosted the district's summer school or Extended School Year program (ESY), and so the Physical Education classes for high

school students would be using the fitness room daily. However, with the principal's approval, she did grant me permission to use the elementary school where I taught. She added that, since my program was not an extension of ESY, transportation could unfortunately not be provided. Therefore, any student who wanted to participate, regardless of where they resided, would have to provide their own transportation. Although there were various impediments, I was determined to make my program succeed. At least I now had the basic approvals necessary.

The next step of this endeavor was to have a discussion with the custodial staff at North Glendale to get their feedback on any difficulties they might have in accommodating my summer program at the school. This could have been an issue because construction would be taking place at North Glendale over the summer. Fortunately, I had a great deal of respect for our custodians and felt that we always worked together to make all our jobs manageable. I explained to our head custodian, Mr. Williams, my plan of using the gym for the first six weeks of summer.

In the past, during the summer, the gymnasium had been used as a central location for the summer work. As the summer progressed, the office staff usually filled the stage, which was located in the gymnasium, with all of the new materials and supplies that were being shipped to the school. When teachers returned in the fall for the new school year, they came to the gym to pick up their new materials, after which the gym returned to its normal use. In addition, the custodial staff used the gym as a storage area during the summer while they were performing basic maintenance in the school room by room. When classroom teachers had to move locations, the custodial staff moved all of their equipment into the gym.

Ideally, I wanted to be able to use the entire gym, but in order to gain permission, I had to change my strategy for reserving the gym. I determined the best course of action was to request the use of half of the gymnasium. This would allow students access to both the inside of the gymnasium and to the outside school grounds. Having permission to use both was important, since there would be different activities planned both for indoors and outdoors each day. Additionally, the weather in Missouri during the months of June and July could be unpredictable, but it was likely to be hot.

Mr. Williams assured me that from a building level perspective, I would be able to use at least half of the gym if not all of it. However, he also mentioned that I had to clear another hurdle and obtain permission from our school district's Director of Facilities, Mr. Tony Koenig. Mr. Koenig agreed but in turn mentioned I had to gain permission from one more assistant superintendent, Mr. Havener, the Assistant Superintendent of Finance.

Finally, with Mr. Havener's permission, I had the green light to proceed with my study at North Glendale Elementary School during the summer of 2010. Now, I had to proceed to plan for the implementation of the program.

Selection of Participants

The selection of participants for my study was difficult. I had been hoping to recruit between 20 and 25 participants who had demonstrated a need to improve their fitness and health levels. I felt that number was manageable so I would be able to host the class in half of the gym and still be able to confer with and differentiate the instruction for each student. The decision on which students to select was a challenge. Seventy-eight out of 335 tested students had failed at least one fitness test in March of 2010. Since I

was the sole practitioner conducting this study over the summer, handling 78 students was not feasible, although not all students would elect to attend.

Reviewing the data, I saw that 49 or 14% of the 335 first through fifth grade students had failed at least two of the four tests in the battery. Of those 49 students, nine had to attend the ESY program during the summer to gain academic skills. My district would not, therefore, allow me to invite them to join the Summer Fitness Club because they needed to attend the ESY program. Thus, I had 40 students I could ask to participate in the study.

In addition, because of the financial instability in public education, the Kirkwood School District would not provide transportation for the participants for the Summer Fitness Club. Therefore, I was limited to recruiting local residents who had access to transportation.

I prepared to send out 40 invitations in the optimistic hope of having 20 – 25 students agree to participate in the Summer Fitness Club. I knew in April which students would qualify for the study and felt I would have received a firm commitment from over half of them had I sent the invitations then. However, because I had had difficulty gaining university Institutional Review Board (IRB) approval for my program, I was not able to send invitations out until one week before school ended on May 14, 2010, which seriously undermined my recruitment plans. By then, most if not all of our families had their summer plans in place. After I had received only nine positive responses out of 40 invitations to students who failed at least two fitness tests, I decided to open the program to children who had passed three or all four fitness tests in the same testing battery. I determined this was necessary because I needed more participants to implement a

program that could serve as a prototype of future intervention offerings. In addition, as a Physical Education teacher, my goal was to help and challenge all of my students, not just the ones who struggled. I felt it was not practical to run the program for only nine students and test the procedures I wanted to put into operation. Accordingly, on May 21, 2010, I sent a mass email out to the whole North Glendale school community inviting additional participants for the study (see Appendix A). This invitation asked any child in the school to participate in the Summer Fitness Club. Thus, the clientele was not what I had previously desired and intended, because instead of working only with children who had underperformed in the fitness testing, I now had the prospect of involving other students who had been successful in those tests.

As a Physical Educator I believed I had the knowledge, training, and experience to help all students achieve. Since the Summer Fitness Club was about improving fitness test scores, I felt I should be able to help both students who had had success as well as those who had failed the tests, but my original focus, and the specific purpose of my study, had been seriously compromised. Between my original recruitment process and the mass email, I eventually managed to recruit 20 students to participate in the Summer Fitness Club. Of those, nine had passed two fitness test items, one had passed three, and 10 had passed all. Yet I feel that by offering the program, I would be establishing a model to be used in subsequent summers.

Having invited students who had been successful with fitness testing as well as students who had not done as well created a different problem for me. Participating students included some who loved physical education and some who did not like it at all, judging by their attitudes in my classes during the year. Amongst the recruited students

were some who were very quiet and reserved, and some who were outgoing. I had some who wanted to participate in the study and some who I was sure were being forced by their parents to participate. I had students who had just completed first grade and others who just completed fifth grade, yet I had to make sure everything was understood, challenging, and fun for all of the students.

Characteristics of Participants

As previously mentioned, the population of students recruited for the program included a wide variety of students. I would be working with students who had not scored well on previous fitness tests as well as ones who had been successful on those tests. As Figure 6 displays, as of June 7, 2010, the first day of the Summer Fitness Club, nine of the participating students had passed only two of the four fitness tests in the fitness testing battery used by the district in March, 2010. Those were the students I had originally targeted as participants in the program. One student had passed three of the four fitness tests, while 10 of the students had actually passed all four of the fitness tests. I felt this was unusual and not a representative sample of our total school population (Table 3). I found it rather interesting that only one student had passed three tests. Having a group with such divergence in physical fitness, although I needed the numbers for my study, created a planning challenge. I now needed to pick activities that would both challenge the students who had success with the fitness testing and those for whom the program had originally been designed.

Since I had worked with each student during the school year, when I viewed the list of confirmed participants for my study I was somewhat concerned. I had students who were not very athletic as well as those who were extremely athletic.

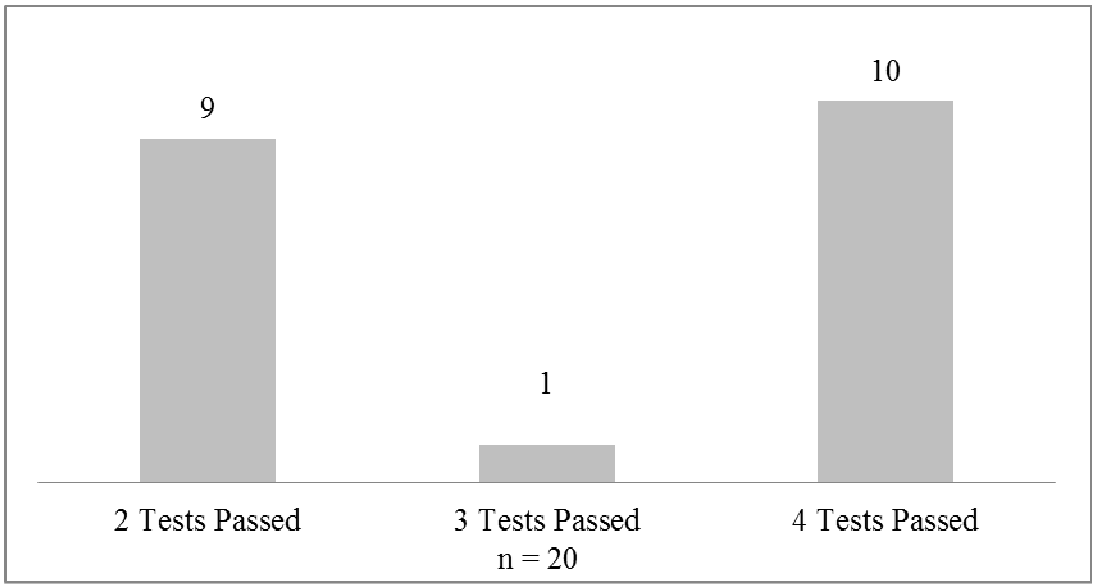

Figure 6. Number of participating students who passed state and district fitness tests in March, 2010.

Table 3

Comparison of School Population Versus Sample Population

Number of tests passed out of four	Number of students who passed the fitness tests (n = 335)	School population percentage (n = 335)	Number of students in study who passed the fitness tests (n = 20)	Sample Population Percentage (n = 20)
4	208	62%	10	50%
3	78	23%	1	5%
2	42	13%	9	45%
1	5	1%	0	0%
0	2	0%	0	0%

I had students who had been in trouble during the school year, as well a group of students who had not got along well with each other. I also had a couple of students who had medical issues. I remember wondering, “How am I going to make this all work?” especially as I had needed to change my plans at such a very late stage.

In addition to varying levels of physical ability, the students also came from five different grade levels, as Figure 7 demonstrates. This meant that my planning needed to

be individualized in order to keep students from the higher grade levels entertained and active as well as being challenging but understandable to the younger children.

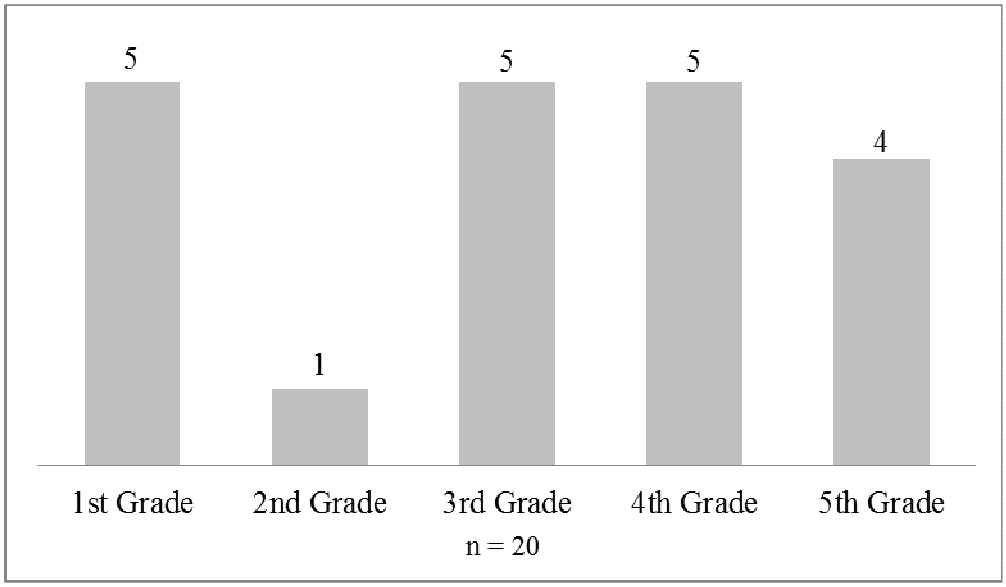

Figure 7. Number of students participating in the Summer Fitness Club from each grade level.

Of lesser concern, I had a higher number of boys than girls, and there were odd numbers of each gender. If each student was present this could be an issue, because when I divided the students into groups or pairs there might always be an extra boy and girl who did not have a partner. This would be an issue with certain activities where I felt that mixed gender pairs would not be appropriate. In addition, the older children might not like being paired with a member of the opposite gender while the younger children might be fine.

The final piece of demographic information about the participants in the Summer Fitness Club that I want to mention is the race of the students. The overall population of African American students at North Glendale is 48 out of 335 students, or 14% of the population. Out of the 48 African American students, nine had to attend the Kirkwood School District's ESY program so they could not participate in the Summer Fitness Club

even if they had wanted to. Therefore, I had the chance to recruit 39 African American students. However, only three signed up to participate in the Summer Fitness Club. Out of the 39 African American students I tried to recruit, 10 or 25% had failed two or more of our fitness tests administered in March, 2010. The fact that I could not recruit these students was quite disappointing. Equally disappointing was that some students could not participate because transportation would not be funded for this study. Therefore, 20 students agreed to participate, 19 lived within three miles of the school, while one resided in the city of St. Louis.

On reviewing the group, I felt that this mix of students could create an interesting dimension to my study. I would be able to look at the data from all students. I would be able to compare data from the nine who had struggled with fitness testing to the 11 who passed their fitness testing. I could look at the program and see if the program was more affective for older students than younger students. There were many different possibilities given the relative diversity of my recruited group. Even though my participant pool was not what I originally intended, I could still gather valuable data.

The focus now had to turn to finalizing what type of program I was going to run and how I was going to research and report on it. Should I plan a program for the whole group or, in the world of differentiation, did I want to individualize for each student and would that be feasible?

Session Planning

My original goal had been to design and implement a program to introduce the students to lifetime activities and to enhance their fitness levels and fitness test scores. I hoped to reduce the sport skills focus of the traditional Physical Education classes, and to

focus more on lifetime skills. These are activities that can be performed throughout one's lifetime regardless of age, such as bowling, Frisbee, fitness activities, cycling, and walking.

Unfortunately, however, Lindenwood University had a question about liability in having students participate in what they assumed needed to be a medically-supervised program, and so the (IRB) delayed approving my study. Once I had changed my design from designing and implementing a new program to basically working with my current program, the University IRB approved my project on June 4, 2010. The lengthy delay in obtaining this approval constituted a major setback to my planning and recruitment for my program.

Determining what types of activities to include in the program was a tricky topic. Since some students had failed a variety of fitness tests while others had passed all four fitness tests in our fitness testing battery, I wanted to make sure all of the participants would be challenged on a daily basis to improve their current status. The first groups of activities that I intended to have performed weekly were the ones used in the fitness testing battery approved by the district (see Table 4). I would require the children to perform each of the fitness test activities (modified pull-ups, curl-ups, sit-and-reach, and the running test the PACER) as part of our fitness stations. The purpose was two-fold: first of all, the children would be able to monitor their progress and to see their success; secondly, they would become more familiar with the proper form and technique for completing each test. This I felt would lead to greater confidence for each child. Hopefully, tracking the scores would be a source of motivation for them as well. I would

give the students a score sheet to help them monitor their progress. Also, this would provide me with comparative data for my study.

Table 4

District Approved Fitness Testing Battery

Test Item	Test Name	Source
Aerobic Capacity	PACER	FitnessGram
Flexibility	Sit & Reach	President's Challenge
Muscular Strength	Modified pull-ups	FitnessGram
Muscular Endurance	Curl-up (Minute)	President's Challenge

Aerobic capacity is an important component of physical fitness because it reflects the overall capacity of the cardiovascular and respiratory systems (Mitchell, Sproule, & Chapman, 1958; Taylor, Buskirk, & Henschel, 1955) and the ability to carry out prolonged strenuous exercise (Astrand, Rodahl, Dahl, & Stromme, 2003; Taylor et al., 1955).

> Aerobic capacity (VO_2max) reflects the maximum rate that oxygen can be taken up and utilized by the body during exercise. The magnitude of VO_2max depends on the capacity of the lungs to exchange oxygen between the air and blood in lung capillaries, the capacity of the cardiovascular system to transport oxygen to the muscles, and the muscles' capacity to use oxygen. The highest rate of oxygen uptake and use reflects the upper limit in the ability of the body to supply energy via aerobic metabolism to the active muscles during strenuous exercise. Aerobic capacity is most commonly expressed relative to body weight to account for differences in body size and to reflect a person's ability to carry out weight-bearing tasks. (Welk & Meredith, 2008, p. 9-3)

While it is not practical to complete clinical assessments on VO_2 max, nationally adapted tests of aerobic capacity are designated as appropriate field-based assessments of this important concept. Some of these tests were used as data in this study.

During the Summer Fitness Club that will be described in this paper, the children are to perform a battery of fitness tests which are required by the state of Missouri and the Kirkwood School District. One of the assessments is the PACER (Progressive Aerobic Cardiovascular Endurance Run) test to analyze aerobic capacity. The PACER test is "progressive in intensity—it is easy at the beginning and gets harder at the end. The progressive nature of the test provides a built-in warm-up and helps children to pace themselves effectively" (Meredith & Welk, 2010, p. 29). The test was adapted from the 20-meter shuttle run published by Léger and Lambert (1982). The children are on a line at one end of the testing area. At the other end, 20 meters away, is another solid line. A CD is playing music which also includes beeps on the sound track. When the children hear a beep, they run to the other side. They must arrive before the next beep. Once they hear the next beep, they repeat this process for as long as possible. The pace of the test starts very slowly. Each minute, there is a triple beep and the pace slightly increases. The children run as long as possible. The longer a person continues, the higher the rate of estimated oxygen uptake (Welk & Meredith, 2008, p. 9-3).

Next in the fitness testing battery, muscular fitness tests are performed. The curl-up test measures abdominal strength and endurance while the modified pull-ups test measures upper body strength and endurance. For this study the students performed the curl-up test for a minute. The students lie on their backs with their knees bent. The students have a friend hold their feet down to the ground, and on "Go" with their arms

folded across their chest with their hands on their opposite shoulder, the children rise up and touch their elbows to their thighs. They then lower their body back to the starting position and repeat the process. The goal is for the children to do as many curl-ups as possible in a minute's time.

The next test used to determine upper arm and shoulder girdle strength and muscular endurance will be the modified pull-ups test. This test was performed using a piece of equipment donated from the Kirkwood High School woodshop. The piece of equipment has a flat piece of plywood with 2 x 4's raising up on both sides. A metal pole then connects the 2 x 4's to each other. Roughly four inches below this pole is an elastic band. The object will be for the children to grab on to the pole. Then, using their muscular strength while keeping their body straight, they will pull their chin up over the elastic band. Once their chin clears the band, they will return to the starting position with only their feet touching the ground. The children will do as many pull-ups as possible.

The sit-and-reach test is used to test lower back and hamstring flexibility. Muscular fitness is described in Welk and Meredith's (2008) work as follows:

> Balanced, healthy functioning of the musculoskeletal system requires that muscles be able to exert force or torque (measured as strength), resist fatigue (measured as muscular endurance), and move freely through a full range of motion (measured as flexibility). Positive relationships have been demonstrated between musculoskeletal fitness and health status (risk factors, disease development and all-cause mortality) in adults. (p. 11-3)

According to *We are All-Americans: Strong Kids for a Strong Nation* published by the President's Council on Fitness, Sports, and Nutrition (2010) the correct way to perform the sit-and-reach is as follows:

> A specially constructed box with a measuring scale marked in [inches or] centimeters is used, with 23 centimeters at the level of the feet. The student removes shoes and sits on floor with knees fully extended, feet shoulder-width apart, and soles of the feet held flat against the end of the box. With hands on top of each other, palms down, and legs held flat, the student reaches along the measuring line as far as possible. After three practice reaches, the fourth reach is held while the distance is recorded. Legs must remain straight, soles of feet against box, and fingertips of both hands should reach evenly along measuring line. Scores are recorded to the nearest [inch or] centimeter. (p. 7)

In addition to fitness testing each week and based on the monitoring of scores on the PACER fitness test, I determined that the greatest need for my students was exposure to cardiovascular activities that would increase their aerobic capacity. I intended to have them complete some sort of cardiovascular activity each day. Since I envisioned this to be the area of potential growth, I felt this would be the way to begin each day. Examples of cardiovascular endurance activities include vigorous walking, jogging, walking or running a mile, biking, climbing the stairs throughout the school, walking to a certain landmark, circuit training in the gym, riding scooters, or playing low organized games. The purpose of these activities is to get the body warm and the heart pumping.

Next, I would have the students participate in station work. My plan was to have them work on 10 different stations with each station focusing on a different aspect of

fitness. For example, one station might focus on flexibility and the next station on muscular endurance. In addition, since the children would be changing stations every two minutes, allowing 30 seconds for this move would help increase their level of intensity and therefore increase cardiovascular endurance. Some of the activities might include ones that were performed during the normal school year in Physical Education. Basically, activities needed to be developed and planned so the students were challenged each day.

At the start of each week, I planned to provide each student with a score sheet to monitor their progress throughout the week (see Appendix B). The plan was for each participant to record their score from each station each day. For example, if the first station was the curl-up station, the student would perform curl-ups for two minutes. When completed, the student would record his or her score on the score sheet. On the next day, the student would look at his or her score from the previous day. My hope was that the participant would challenge himself or herself to improve on the previous score. My goal was to have the students improve their score each day as the week evolved, and for them to *see* their progress.

Finally, I felt it was necessary to discuss the importance of proper nutrition each day. I wanted to provide the students with a worksheet that would allow them the opportunity to monitor the foods they ate (see Appendix C). By doing this we could then discuss which were healthy choices and which were unhealthy choices.

Other than exercise, one of the key pieces to healthy living is learning to evaluate daily intake. The basic formula for losing weight is for a person to burn more calories than he or she eats in one day. In order for this to work, students needed to be aware of the food they ate and to be able to monitor their intake and also monitor their amount and

type of physical activity they engage in. By the end of this study, I hoped that the participants would be able to classify their food and understand the difference between good and bad foods. Therefore, my plan was for the students to complete a Daily Food Evaluation. At the beginning of the program, during the last part of each session, I planned to have the students complete this form based on their food intake from the previous day. After a couple of days, I would request the children to complete this form at home with the assistance of a parent. I would then check to see if the children had completed the form the next morning. For some parents, seeing a form like this and evaluating their children's food intake might encourage change among the family.

The plan was for students, after each meal, to list the foods that they had consumed over the previous 24 hours. They would place the food under columns for breakfast, lunch, snack, or dinner. Next they had to determine what food group, based on the MY Pyramid website, the food fell into. Finally, the students would put a mark on the grouping for the food they had eaten. Each grouping listed the recommended daily amount. The student would check to see if they were meeting the daily guidelines.
My hope was that this form would help students understand the importance of a balanced diet. In addition, this form should show them the deficiencies in their diet. This, I hoped, should encourage a more balanced diet.

As I looked at my planning for the program, the main focus was twofold: seeing each student improve his or her fitness score and helping each student gain a better understanding of a healthy lifestyle by developing knowledge and skills, and making health-enhancing decisions. Therefore, I felt I had to customize the program to meet the needs of each student. As I reviewed and analyzed fitness tests scores from March 2010, I

intended to determine the overall needs of the entire group and use this information to help develop lessons and activities to use during the Summer Fitness Club. As the study continued, in conjunction with their test scores, I intended to differentiate my instruction to try to meet the needs of each student. For example, a student who really struggled with the cardiovascular endurance portion of the fitness test could have a program developed or lesson planned for him or her that would focus on doing cardiovascular exercise whereby the student could progressively develop greater aerobic capacity. Those exercises might include walking/running on a treadmill riding a stationary bicycle, or using a stair climber.

The goal for each session was for the children to have fun and to have a great workout that involved both aerobic and anaerobic exercise. With that in mind, each session of the Summer Fitness Club, which was to last for six weeks and to meet four times per week, would last two hours. I intended for the two hours of a typical day to approximate the following pattern:

- 9:00 a. m. arrival of students
- 15 minutes for a warm-up that included moderate activities designed to get the students' heart rate up. This might be in the form of a low organized game, by which I mean an activity that would elevate the students' heart rate enough to warm up their body. Once the muscles were warm and the heart was pumping I would have the students stretch. I intended to develop a group of 20 -25 different stretches that I felt could be performed by everyone. Then in order to provide the students with leadership opportunities, each day I would have a different student

lead the stretches either at the beginning of the day or at the end of the day. I felt this could be a way to enhance students' self-esteem.

- 45 minutes of moderate to vigorous types of cardiovascular endurance activities. These activities could include games such as "Bowling Ball Blitz," "The Great Escape," and "No Man's Land" (see Appendix D), which are activities designed to elevate participants' heart rate. As the game continues, the goal is to maintain the heart rate throughout the activity. Early on in the fitness camp, in order to understand what their heart rate meant and how to adjust to the needs of their bodies, the students learned how to monitor their heart rate during any activity by measuring their pulse.
- 30 minutes of station work that would focus exclusively on the core areas of fitness that had been tested by the fitness test in March, 2010. Each week, I would pick 10 stations from the list I had designed for the students to perform all week long (see Appendix E). These stations would include some that worked on flexibility, for example the Balance Disc or hamstring stretch; some stations that emphasized muscular endurance, for instance the curl-up or pull-ups; and, finally, some stations that developed muscular strength, for example the leg lift and push-up stations.
- A 5-minute break to allow for water and a snack
- 15 minutes to focus on performing fitness tests from the fitness testing battery. Each day the students would perform one of the four state fitness tests. I would focus on the proper way for the students to perform the test and then track the data to see growth over the six weeks of the study.

- 10 minutes focusing on cooling down, stretching, and talking about nutrition topics, including using a food log to monitor their food choices (see Appendix C).

My original plan, based on my own experience and knowledge and feedback from professionals who work with children's wellness, was to design my own program that would have daily scripted plans. The goal was a program that essentially could teach itself. I wanted this to be a tool that anyone could pick-up and follow. However, the Institutional Review Board (IRB) at Lindenwood University, because of its concerns about the liability of the participants, denied me acceptance of this approach. I therefore had to change my thought process and look at a different way to accomplish my goal of enhancing the fitness levels of my students.

Essentially, what I had to do was basically a continuation of the Physical Education program we implemented on a daily basis at North Glendale. In other words, I was able to use the current curriculum without having to develop a new program. For example, during the school year, we have students in Physical Education for 30 minutes. During this time, the students perform a warm-up, participate in the district approved activity, and end with a cool-down activity.

Prior to the IRB process, I had intended to contact medical professionals and wellness centers to collaborate and design a program that would accomplish the goal of increased fitness levels and scores. After reviewing the activities the children performed during the regular school year, I developed a list of activities for the students to engage in during the Summer Fitness Club (see Appendix D). In order to be added to the list, the game had to be appropriate for all grade levels, it had to be easy to understand for all, it had to have few rules so students could self-monitor their involvement, and it needed to

provide plenty of opportunity for movement. In addition, all activities were analyzed by me to determine the level of intensity. If the activity provided enough opportunity for a good workout, I chose it and incorporated it into one of the daily lesson plans. Based on these criteria, some of the selected activities were ones the children had played before and some were brand new to the participants. In addition, most of the station work that was used during the Summer Fitness Club had also been used during the school year.

What constitutes a good workout? I had wanted the activity to elevate the children's heartbeat to their target heart rate.

> The target heart rate occurs when your heartbeat reaches 60 to 80 percent of its maximum ability or 50 percent for obese people or people with little or no physical exertion before beginning an exercise program. While adults use the formula of subtracting their current age from 220 to find their target heart rate, this won't work for children. The target heart rate for children depends on their age, but on average, it's 137 for 3- to 4-year-olds, 133 for 5- to 7-year-olds, 130 for 8- to 11-year-olds and 115 for 12- to 15-year-olds. (Livestrong Foundation, 2010, para. 2)

Below is the formula for calculating maximum heart rate, minimum heart rate for exercise benefit, and maximum training heart rate. However, the first thing a person must do is figure resting heart rate. In the morning, right after waking up, a person finds their pulse and counts the beats for one full minute. This number is their resting heart rate. Then insert that number to the following calculations.

- 220 - your age = (maximum heart rate)
- 220 - your age - resting heart rate = x .60 + RHR = (minimum training

heart rate)

- 220 - your age - resting heart rate = x .80 + RHR = (maximum training heart rate)

For example, if there is a 10-year-old who has a resting heart rate of 70 beats per minute (BPM) his target heart rate would be calculated as follows.

- 220 – 10 = 210 (maximum heart rate)
- 220 – 10 – 70 = 140 x .60 + 70 = 154
- 220 – 10 – 70 = 140 x .80 + 70 = 182

Therefore, for maximum benefit, this child's heart rate should be between 154 and 182 beats per minute. For children there are online calculators to determine their target heart rate zone.

Another important question concerns the difference between aerobic and anaerobic exercise. The popular website WebMD states that aerobic exercise:

> includes physical activity that increases your heart rate and keeps it higher for a certain period of time. It boosts the amount of oxygen delivered to your heart and muscles so they use oxygen more efficiently, and stay healthier. Aerobic exercise keeps you super-fit- and healthy. It helps you maintain a normal weight and even eases stress, so you smile more and complain less. And what's the best stress reliever? Exercise! Regular aerobic exercise also releases endorphins (happy hormones), brain chemicals that boost your mood naturally. Aerobic exercise also reduces the risk of some types of cancer. (WebMD, 2010, para. 7)

WebMD continues by stating that, by comparison, "Anaerobic exercise usually refers to resistance training, such as lifting weights. Anaerobic exercise is done primarily

for increased muscle mass. Weight training is a form of anaerobic exercise" (WebMD, 2010, para. 5).

As the previous information shows, both types of exercise can benefit youngsters but one of the tests from our state and district fitness testing battery has the goal of measuring cardiovascular endurance or aerobic capacity. Therefore, some of our station work needed to focus on activities that were anaerobic, involving short and intense movements. The fact that the students would be working for over 20 minutes meant that the station activities could be considered aerobic.

The final aspect of planning involved the facilities. As I stated previously in this chapter, the school district allowed me to use the gymnasium at North Glendale for this study. The gymnasium was a building that was 63 feet long and 35 feet wide. In addition to this space there was a stage area that was roughly 20 feet by 50 feet. The gymnasium area was big enough for all of the physical activities I had planned, while the stage area was perfect for a lecture/discussion setting.

The gym was a great facility to use for the Summer Fitness Club. The gym had solid brick walls with plastic window coverings, thus making it a loud area. There were two circles painted on the floor in the center of the gymnasium, a large circle to be used as a gathering spot and a smaller circle painted on the floor in the middle of the gym. In addition, there were four large red squares painted on the floor in each corner of the gym used for many different activities during the regular school year (see Figures 8 and 9). The stage was a well-lit area with chairs arranged in a circle.

Figure 8. North Glendale Gymnasium view 1.

The expectation was that the air conditioning unit would not be available for the duration of the summer. The district was attempting to cut costs. Therefore, it was decided be school district administration that school offices would the only location in all buildings to be supplied with air conditioning during the summer months.

On a daily basis, the goal would be for the children to be moving the entire time minus a five minute period when they took a break. Another skill to teach the children was to take their pulse rate. This was a concept that was easy to do and very beneficial once the children learned the proper technique. Finding our pulse helped the students understand concepts relating to exercise and cardiovascular endurance function.

In addition, journaling would be an important aspect of the program. Students needed to reflect on how they felt, what they had learned and how they were going to improve their lifestyle. As the study progressed, after three weeks students would have their level of fitness tested and then again at the end of the program. The hope was to prepare the children for the fitness testing battery that would be conducted during the

summer but also to show them the progress they have made from Day One. Finally, the last round of the state and district fitness testing battery would be conducted in September, 2010.

Figure 9. North Glendale Elementary Gymnasium view 2.

For me personally, the data from their last round of fitness testing would be important. About six to eight weeks would pass from the time the Summer Fitness Club ended and when the state fitness testing would occur. Ideally, students would continue, with the assistance of their parents, on their path to a healthier lifestyle. The fitness test scores in the fall would give some indication of whether the children had been able to maintain any progress made during the Summer Fitness Club.

Additional Help

When searching for participants for my study, I heard from a former student that he would be interested in participating if I needed older students. I regretted to tell him I was only able to use elementary students, but I extended an invitation for him to participate as a volunteer assistant. He graciously accepted. He also mentioned that his brother would also be able to help and assist. In addition, my 13-year-old daughter,

Kristen planned on attending every day to help in any way possible. That gave me additional sets of eyes to help monitor each student and the progress of my project.

Prior to the beginning of the Summer Fitness Camp, the student volunteer Jonathon, who was a sophomore in high school, and I had a discussion about his role in the program. We decided that his responsibilities would include leading the stretches, monitoring the station work, and overseeing the cardiovascular activities. In addition, Jonathon was going to work on establishing relationships with a few of the students who, based on my previous experience, were going to need one-on-one assistance to motivate them and encourage them for success.

Action Research

Since the Summer Fitness Club was designed to help improve fitness scores and fitness levels, I decided I must look at my teaching practices and determine how I could improve my own trade. Therefore, I decided to embark on an action research project. According to Ferrance (2000), "Action research is a process in which participants examine their own educational practice systematically and carefully, using the techniques of research" (p. 1). Ferrance continued by stating that although there are many forms of research for researchers to use,

> Action research specifically refers to a disciplined inquiry done by a teacher with the intent that the research will inform and change his or her practices in the future. This research is carried out within the context of the teacher's environment—that is, with the students and at the school in which the teacher works—on questions that deal with educational matters at hand. (p. 1)

Yet another, and famous, view of action research from Kemmis (1988) suggested that action research is

> a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out. (p. 5)

As a practitioner contemplates the action research process, he or she must understand the process involved. In her work on action research Ferrance (2000) said the teacher

> will begin a cycle of posing questions, gathering data, reflection, and deciding on a course of action. When these decisions begin to change the school environment, a different set of circumstances appears with different problems posed, which require a new look. Indeed, many action research projects are started with a particular problem to solve, whose solution leads into other areas of study. (p. 2)

One other view of action research comes from Cross (1987). Her belief was that action research should be used as a mode of improvement for an educator. Cross said,

> Classroom research is geared to self-improvement since it is designed, conducted, and used by teachers themselves. And classroom research bridges the gap between research and practice because researchers and practitioners are in one: the researcher asks questions that the practitioner thinks are important; the practitioner is eager to use the results of the research. (p. 499)

Based on the provided information about action research and the results of fitness testing at my school, I decided that there was an area for improvement at my school and in my educational practice. As the school year concluded and children's activity levels dropped during the summer vacation, what could be done to enhance their level of fitness, thus improving their fitness test scores? Since the sample size of students was small and I was willing to change the program as the study unfolded, I decided to conduct a qualitative study to determine if I could make a difference in the fitness levels of my students.

According to Ferrance (2000), there were five steps that needed to be completed in order to do true action research. Those five steps were as follows: identify the problem area, collect and organize the data, interpret the data, action based on the data, and finally, reflection (p. 9).

Identification of the Problem Area

By examining fitness test scores from the state and district's fitness testing battery conducted in March of 2010, I was able to identify a pool of students that I felt might benefit from participating in a Summer Fitness Club. I found that 49 or 14% of our 335 students had failed at least two of the annual fitness tests required by the Kirkwood School District. In addition, based on conversation with some of the 49 students, students spend much more of their energy with screen time versus physical activity during the summer. Therefore, the primary focus was to improve fitness test scores through a Summer Fitness Club and the goals were to improve fitness test scores and to increase health enhancing knowledge levels.

Collection and Organization of Data

As both researcher and practitioner of this action research, I had to plan the Summer Fitness Club, recruit the participants, determine what data would be collected and assessed, supervise the daily operation, and finally reflect daily on the program. In order to gather data, I decided to use several forms. The first group of data used was the fitness test scores from March 2010. In addition, I was able to access test scores from prior years. In order to make improvements I decided to take field notes every afternoon or evening following the program. I also had communication with the students in the form of conversation. The children also were required to keep score sheets for their daily station work. The last bit of data used was personal narratives from colleagues who agreed to come and observe the program.

Interpretation of Data

Initially, as I reviewed the data from the March, 2010 fitness testing battery, I discovered there were more children than anticipated that could benefit from participating in a program of this nature. I was also able to determine if there was one aspect of fitness that needed to be addressed more than another. By collecting feedback from the students I was able to make improvements to the program that I felt were merited. However, the bulk of the interpretation was to occur at the end of the program, and would be useful in preparing for a second cycle of action research.

Action Based on Data and Reflection

My hope, then, was that at the conclusion of the Summer Fitness Club I would be able to use the information from the data collection and review of literature to design a plan of action that would allow me to make change and to study that change (Ferrance,

2000, p. 12). I hoped to be able to determine the benefits of the Summer Fitness Club and to see if progress had occurred. In addition, I hoped to be able to ascertain the healthy benefits for each individual and to see what I could do differently in the future to help improve the health of my students. I fully expected to reflect on my own teaching practices and discover teaching methods and strategies that would help me become a better educator.

The Primary Researcher's Role

As the study was implemented, I served as both practitioner and the primary researcher. The researcher side had the question to research, "Over a six-week period can I help students improve their fitness scores on the fitness testing battery?" In addition, I wanted to examine the health aspects of the program, too. In order to do so, I decided to collect data in the form of observations, journal writing, conversations with children, and peer observation remarks. The practitioner side had to run the daily operation of the Summer Fitness Club, plan the daily lessons, maintain the safety of the children, and make the decided upon changes to the daily plans to improve the quality of instruction.

Ethical Issues and Protection of Human Participants

As the researcher of this study, I felt it important to assure parents and children that the main goal of the Summer Fitness Club was to improve the children's fitness levels and test scores, not to service my research. All parents were presented with a permission form (see Appendix A) that detailed the program. This communication notified the parents that the study would involve exercise for a two-hour period every day for four days per week. The parents were aware that a nurse would not be present on a daily basis but that I had had training and an understanding of medical emergencies and

that I did have procedures in place should a problem arise. In other words, parents should have been aware of the risks and the goals of the Summer Fitness Club.

The permission form informed the parents that their child's name would never be used in the final published document of my research and that any information collected and obtained from or about the children would be used in the strictest confidence. All materials were locked up on a daily basis. For the sake of protecting the autonomy of all individuals, all of the names of students in this study have been changed to protect each individual.

Methods and Data Collection

In order to have a clear understanding of the entire Summer Fitness Club, I kept field notes during the entire program. Included in these journal notes were daily observations, comments from the children, suggestions and recommendations for improvement, and peer observations from colleagues. These were all used to analyze for emerging patterns. In addition, the children collected their own data in the form of recording their daily scores from the station work. For example, on Mondays new stations were introduced. As the students completed each station, they recorded their score. The hope was for their score to increase each day with the goal of having their highest score on the last day of the week.

The other main source of data came in the form of the test scores from our fitness testing battery. I was able to collect scores from March of 2010. I was also able to collect scores from the Summer Fitness Club after the first three weeks of the program and at the conclusion of the program three weeks later. Finally, I was able to analyze their fitness

test scores from the fall of 2010. These scores were collected between eight to 10 weeks following the conclusion of the Summer Fitness Club.

There were other sources of data collection. Data was collected from non-participants such as colleagues in the form of observations and field notes. Some observers were able to record data in the form of notes on their observation of the entire program for one full day, while others focused on observing one individual for an entire day. Some of the observers were not Physical Education teachers, thus they brought a different educational perspective for improvement. Another form of data collection came from the participants of the program. Some provided information through anecdotes and conversations with the researcher. The final source of data collection was in the form of food charts (see Appendix C). The students recorded their daily food intake on a food chart. This chart allowed the children and parents to analyze the daily food choices made. This form was turned in on the last day of each week.

Data Analysis

My field notes provided me the opportunity to continuously modify the daily lessons to try to ensure they were meeting the goals I had set for the program. For example, after the third day of the Summer Fitness Club, some children told me they were sore from working hard. I was able to take this information and change the lesson. I allowed more time for stretching both before and at the conclusion of each day. In addition, I had to make sure I closed each session with a reminder for the children to stretch at home. In addition, I had had to relay this message to the parents as they retrieved their child at the end of the session.

At the conclusion of the study it was beneficial to review the comments from colleagues whom I had invited to come to observe and provide me feedback. Some observations included notes on specific students while others included information on the program. This allowed me to process the data as I prepared to write my reflections and recommendations for further study.

To determine the level of increase in children's fitness testing, I analyzed four sets of fitness testing scores. I looked at the fitness test scores from March of 2010, scores from three weeks into the program, scores at the conclusion of the Summer Fitness Club, and finally scores from the district and state testing in the fall of 2010, roughly eight to 10 weeks following the conclusion of the Summer Fitness Club. I examined whether the children had shown improvement over that period or not.

Furthermore, I intended to analyze my field notes to determine successes and exertions of the program, using the field notes to guide the direction of further studies. I intended to pay particular attention to the peer observations and whether changes needed to be made to enhance the program.

Conclusion

The study was used to document aspects of a Summer Fitness Club and to determine if participating in the Club had any effect on the fitness scores of the participants. During the actual Summer Fitness Club, students came to North Glendale Elementary School for two hours a day four days per week. The study was designed to last for six weeks. During each session, the students participated in activities that were designed to improve their level of fitness in four different categories. These classifications included cardiovascular endurance or aerobic capacity, muscular strength

and endurance, flexibility, and body composition. These areas were selected based on the fact that these are the areas that the state of Missouri tests during fitness testing for fifth and eighth graders.

Each session included station work that required the children to work for between two and three minutes at 10 different stations. These stations were designed to increase muscular strength, muscular endurance, and flexibility. Also, the children would participate in activities designed to elevate their heart rate. The goal was to maintain these heart rates for a period of 20 to 30 minutes to increase the children's cardiovascular endurance or aerobic capacity.

At the end of Weeks Three and Six, I planned to collect data by way of a battery of fitness tests to analyze the Summer Fitness Club and to determine if change needed to be made in order to accomplish the goal of improving fitness levels. The final data collection occurred once school started again in the fall of 2010. At this time, one more round of fitness testing occurred. The purpose was twofold. First, the testing of all students was a district requirement; second, I wanted to determine if the fitness levels attained by the students over the summer had been maintained.

What follows in chapters 4 and 5 is a personal narrative of the daily operations of the Summer Fitness Club. Chapter 4 breaks down the first three weeks, some daily descriptions and some in summary form, painting a picture for the reader of what the actual program looked like on a day-to-day basis.

Chapter 4: The First Phase – Weeks One to Three

In order for the study to help as many children as possible, I felt it was important for me to be flexible to allow change and to be thoroughly prepared every day. I had to make sure each activity was appropriate for each child. Did each child understand the game? Did the students understand the rules? Were the participants giving their best effort? Were their partnerships good matches? In order to make the most of our time together I needed to make sure that I paid attention to each and every detail and each and every child. I also had to try to get feedback from the students about what they thought of the program. In addition to keeping their interest, I had to try to make the program fun.

My plan going in was to have the students do a light running warm-up each day to prepare their muscles for stretching followed by a 10 minute period of actual stretching. If the students did as much work as I anticipated, it was imperative that their muscles be warm and stretched so they could avoid injuries. I intended to follow the stretching with a cardiovascular endurance activity designed to elevate the participants' heart rate. The students would end the day with stations designed to help them focus on a certain fitness activity that would help improve their fitness levels. These stations were focused on improving muscular strength, cardiovascular endurance, and flexibility.

The following is a personal narrative explaining the first three weeks of the Summer Fitness Camp, in which I will highlight some key points from weeks one through three. Some of this narrative will be in the form of a day-to-day account while others parts will be a summative description of the program. The intent is to paint a picture so that my reader will gain an understanding of the implementation of my project.

Day 1: Monday, June 7. On this day, 19 out of 20 students were present. The first day of any adventure is always nerve racking and challenging. Because of the nature of the organization of the Summer Fitness Camp, the delay of IRB approval from Lindenwood University, the late invitation and sign-up period, and the newness of this program, I was nervous, in fact terrified, that I was not going to have many students come to participate in the Summer Fitness Club. On Day One I was, however, to be pleasantly relieved and excited. By 8:45 a. m. eight students were present, and by 9:00 a. m. 19 participants had arrived. One family had informed me that their son was going to be out of town during the first week. I already knew each participant because they had all been my students during the regular school year. I had seen the first and second graders every day during the school year and the third, fourth, and fifth graders four times a week. The students came in many different sizes and shapes. I had athletes, non-athletes, smart students, struggling students, tall students, short students, fast students, slow students, big students, and small students. I realized right away that it was going to be a challenge for me to have activities in which the whole group could participate.

After taking roll, I welcomed the students by telling them, “Thank you! Thank you for being willing to give up your summer to participate in the Summer Fitness Club. I am so excited you are here and I look forward to working with you to improve your fitness levels. The Summer Fitness Club will not be easy, but all of the hard work will help improve your fitness scores on the Fitness Testing.” The students seemed prepared and one of them whom I will call Riley, said, “I am excited to be here but my mom is making me participate.” I remember thinking, is this how all of the participants feel? I hoped not!

I sent the students outside to take a slow jog for roughly seven minutes. I then had them stand in a circle while the student volunteer, Jonathon, led the students in their stretching. As they were stretching, I gave a lecture on the importance of stretching and how important it was for the students to stretch as we progressed through the program. I told the students that,

> Stretching is one of the most important activities we will do on a daily basis. If you do not stretch, your body will become sore and fatigued. It is also extremely important to stretch on your own when you are at home, because this will help your body recover from all of the hard work we are going to do. Throughout this Summer Fitness Camp you are going to use muscles that you never have used before. It is imperative for you to stretch well both during the Summer Fitness Club and at home in the evening. (Personal Journal, June 7, 2010)

The students did a great job focusing on stretching the correct way. They followed Jonathon's lead and appeared to focus on learning the correct ways to perform each stretch.

Once the stretching had been completed, I implemented my plan for my students to participate in a vigorous activity with the goal of elevating their heart rate to their target heart rate zone. As previously mentioned, on the average I wanted their heart rate to be over 120 beats per minute, so I had the students participate in a game of "Scooter Tag." Every student had his or her own colored scooter, and two people had a scooter that was colored purple. Those two individuals were the taggers. The students were to ride their scooter around the gym and try to avoid the taggers. If they were tagged, they had to go to the sidelines and complete 15 wall push-ups. These are push-ups that are performed

standing against the wall as opposed to lying on the ground. Once the students had completed their push-ups, they could return to the game. After five minutes, sensing fatigue with the taggers, I stopped the game and changed taggers.

At the end of each round, in order to focus on certain core muscle groups, I told the students they were going to have to ride their scooters in different ways. I wanted them to ride their scooters by only using their feet while they sat on their scooter, by using only their hands while they knelt on the scooter, or by lying on the scooter using a swimming motion that required them to use both their arms and legs. Those variations exercised different core groups of muscles. During the first round of the game, which lasted approximately eight minutes, I told the students they could ride their scooter any way that they wanted. For the second round, they had to ride their scooter while kneeling on the scooter using their hands. By having them move using only their arms, this round focused on using the upper body muscles. The next round they were lying down on their stomach using a swimming motion. During the next round, the students had to ride the scooter while sitting, they could only use their legs to move. In addition to developing muscular strength, this game was designed to work on cardiovascular endurance, which is the body's ability to undergo vigorous exercise for an extended period of time.

At various times during the game and at the conclusion of the game, I asked the children to find their pulse either on their wrist, to the side of their Adam’s apple, or by placing their hand over their heart. The children, starting at zero, counted how many times their hearts pumped for six seconds. At the end of the six-second time frame, they stopped and added a zero to their score. For example, if students counted 15 beats, they added a zero to their score, which showed that their heart rate was 150 beats per minute.

We found that every student had a heart rate that was higher than 150 beats per minute, which showed that they were receiving a good cardiovascular workout. In addition, based on these results, I was able to determine that all of the students were participating safely and with excellent effort.

Based on their smiles and comments, the students had loved the game, but they also seemed to be exhausted when they finished playing. Billy said, "Man I am tired but that was an awesome game." The students were also sweaty. I determined this was a perfect time to take about a five-minute break for them to go to the restroom and get a drink. During this break, I checked the snacks that the children brought for themselves and decided to reiterate the importance of proper nutrition and the importance of fueling their bodies with appropriate nutrition.

Two boys in the program had a peanut allergy, one more severe than the other. I had an Epipen in case of an emergency. An Epipen is an injectable medicine. It is short for Epinephrine, which is used for the emergency treatment of, among others, allergic reactions (Type I) including anaphylaxis to stinging and biting insects, foods, and drugs. EpiPen and EpiPen Jr Auto-Injectors are intended for immediate administration in patients who are determined to be at increased risk for anaphylaxis, including individuals with a history of anaphylactic reactions (U. S. Food & Drug Administration, 2008, para. 9). I had this medicine for one of the boys while the other just needed to wash off any part of his skin that came into contact with peanuts. During our break, after I had explained to the class about the peanut allergies, I asked the students to check the food label of the snacks they had brought to camp to avoid any complications for either

student, including asking them to examine food labels for the remainder of the Summer Fitness Club.

Following the scooter tag game and the break, the students did station work. By talking about and demonstrating each station, I introduced the students to 10 different stations designed to help them focus on a core muscle group of the body. For instance, I chose one station because it would help the students develop muscular strength in their abdominals. I picked some stations that were going to be a challenge for the students and some that I thought would be easier for them to perform. Some of the stations were ones with which the students were already familiar, while others were new to them. The purpose was to challenge them while allowing them to have fun. The students would be working to strengthen their muscular strength as well as their cardiovascular endurance, all of which could help them improve their fitness scores.

To help the students keep track of their progress, I had developed a fitness score sheet so they could record their score for each station. The goal was that when the child returned to that station the following day, they could aim to improve his or her score on that station (see Appendix B).

Prior to the arrival of the students, I had all of the equipment set aside for the stations so that during the break I could, with their help, set them up easily. For the first week, I wanted the older students to work with the younger students so they could serve as role-models and assist them. Before class, based on my prior knowledge of the students, I had made a list of the partnerships for the week. This proved to be useful as the older students had had more experience doing stations, and they proved to be great

role-models. As there were 19 students present, the one who did not have a partner worked with Jonathon, the volunteer assistant.

My daughter, Kristen, had made a music CD for me that played a song for two minutes, after which it then would pause for 20 seconds. Once the music stopped, the students were to record their score and move to the next station. When the music restarted, the students would begin their work at the next station. It seemed to work well. Since we were working on cardiovascular endurance, the music was great, and 20 seconds between stations seemed to be a perfect amount of time.

Below is the name of each of the stations that I used during the first week, with a brief explanation of what core muscle area each one helped develop. Please refer to Appendix E for a more detailed description of each station.

- Curl-ups - This station helped the students develop abdominal muscular strength and endurance.
- Wall-sit - This station helped develop hamstring strength.
- Supermans - This station helped the students develop abdominal muscular strength.
- Hamstring Stretch - This station helped develop hamstring flexibility.
- Dyna-Bands - This station helped develop muscular strength.
- Over and Unders - This station helped develop cardiovascular endurance.
- Knee Push-Ups - This station helped develop muscular strength.
- Step-Ups - This station helped develop cardiovascular endurance.
- Knee-Jumps - This station helped the children with muscular flexibility and cardiovascular endurance.

- Leg-Lifts - This station helped develop abdominal muscular strength.

I felt that the students had performed the stations well, but that they were extremely tired after having completed the cardiovascular activity first. As I recollected in my journal after the first day, "The first change I need to modify is to do the station work first. By the time we got to the station work, the students were tired. I do not feel they gave their best effort because they were exhausted. Tomorrow we will do station work first to make sure different core muscle groups receive a good workout" (Personal Journal, June 8, 2010). Finally, before the students were dismissed, I had a discussion with them about the importance of good nutrition and how we all could make smart choices by choosing healthy food over junk food. I challenged the students to keep track of the foods they ate. I gave them each a sheet (see Appendix C) to record their food selection over the week. Each week I planned to give them a new sheet so we could see trends over time.

Overall, I felt that Day One could not have gone much better, given all the uncertainty leading up to it. The students seemed to have worked hard and been motivated to have fun. I truly wondered, however, if they realized that everything they had done was for the good of their bodies. They appeared to have had a blast. I looked forward to Day Two, when the parents dropped off their children, to see if I would get any feedback.

My goals entering the first day had been for the children to have fun and for them to have a great workout that involved both aerobic and anaerobic exercises. The games indeed allowed the students to have fun and to participate in aerobic activities while the station work allowed for the children to do short spurts of activity. Since the stations were

under two minutes long, the station work could have been classified as anaerobic. However, I felt there was still cardiovascular benefit as the whole station segment lasted longer than 20 minutes.

I felt the students had done a great job on the opening day. They appeared to focus on the task at hand. They had smiles on their faces and seemed to be tired at the end of the day. The comment from one of the students, Angela, hopefully sums up the students' feelings. She said, "I had so much fun! You made me work hard but I had fun. Thank you!"

Day 2: Tuesday, June 8. On this day, 17 out of 20 students were present. When the students arrived for the second day of the Summer Fitness Club, I expected them to be motivated, excited, and ready to go. Well, I could not have been more mistaken. As they trudged in, I could tell the participants were exhausted and sore. They did not complain, but they were moving slowly and without much obvious desire to participate. I soon realized that motivation and patience would be necessary in order to encourage activity. Because I had considered Day One such a success, I was disappointed. I fully expected the students to be energized and excited about Day Two. I never envisioned they would be so fatigued. The reason for my surprise was probably because, during the school year, I saw the students for 30 minutes. It never dawned on me that two hours might be too long of a time period for each session. They said they were sore and tired, so they would have to push themselves on this day. To help alleviate the tiredness, following the feedback from the children, I decided to change the sequence of the day. My plan for the day became to do warm-ups, including stretching followed by station work, and ending with a cardiovascular activity or two.

As I was taking roll, because of vacation or another summer camp, I noted that three students were missing. The students gathered on the small field and practiced locomotor skills. I asked them to skip, jog, gallop, or walk the whole length of the field, which was roughly 70 feet long. I called out the locomotor skill, which the students then performed. The temperature was roughly 76° with the humidity at a modest 64%, yet after three minutes the students were complaining that it was so hot. Jaclyn said, "Mr. Price, we need to go inside because it is so hot." Ryan followed, "Mr. Price, please tell me that we will be inside all day." We were inside the rest of the day but the temperature was warm inside as well. After the warm-up period of five minutes, the students returned to the gymnasium to stretch. Once again Jonathon was leading the stretches. This time Natalie, a second grader, asked me if she could help Jonathon with the stretches, I agreed, and she helped him. I noticed some students I felt were not giving their best effort for stretching. I reiterated to the whole group the importance of stretching to help ease the muscle soreness that they were feeling or would feel.

The students participated in station work that lasted for 26 minutes. The stations were the same ones as the previous day and were intended to work core area muscles such as biceps and triceps, hamstrings, and abdominal muscles. I felt that in general, students had performed the stations well, but that two stations were causing problems for some of them. They complained that the knee jumps and the curl-ups were harder to perform because they were sore from Day One. Since I wanted the students to keep their heart rate elevated, I allowed them to do jumping jacks or push-ups instead. They perceived these as being easier, yet they were still working hard. At the end of the stations I suggested to the students that the difficulty was most likely caused by the fact

that they had not used those specific muscles in a while, and their bodies were getting used to utilizing those muscles. I used this moment to restate the importance of stretching and how stretching would help decrease their soreness.

According to my journaling, I mentioned to the students that I knew that most of them were very sore. I continued to tell them that if they pushed themselves and used muscles in a different way than they had used them in the past, they would be sore. The easiest and best way to help prevent soreness is to stretch. I told them that I was not just talking about stretching in the Summer Fitness Camp but also at home at least two or three times a day. I suggested they pick at least seven of the stretches we did in class and do those during the commercials when they watched TV (Personal Journal, June 8, 2010).

Following the stations, to make things easier the rest of the session, I suggested to the students to help put away the apparatus from the stations. I had them place the mats up against the wall, and I asked them to move all other equipment against the wall as well. As the students did this, I gathered the materials needed for the cardiovascular activity. While they were getting their snack and water, I noticed most of the students had brought a water bottle. I encouraged the others to make sure to bring a water bottle or a Gatorade-type drink to help keep them hydrated.

Next, the students participated in some cardiovascular endurance games. As a reminder, the children engage in cardiovascular endurance activities to help elevate their heart rate and then maintain their heart rate at 150 beats per minute. The first game was "Builders and Bulldozers" (Fowler, 2001).

As they had done during the first day, the children were asked to find their pulse after each round of the game. The results varied from 210 beats per minute to under 100

beats per minute. After 20 minutes and four rounds of playing, a few of the children had stopped playing and some others were talking with friends, I felt they had become bored playing “Builders and Bulldozers” (see Appendix D). Therefore, I decided to have them play the second planned cardiovascular endurance game. The students played a game called “Dragon’s Tail” (see Appendix D). The students worked hard, and when we checked their heart rate, they all had a number higher than 150. The children had a chance to pick and choose whose pin they were going to attempt to steal, thus creating their own challenge they loved this game and put forth an excellent effort. Nate said, “Mr. Price, can we play that every day?”

The final cardiovascular activity I decided to do on the second day was a game called “Musical Chairs with Hula-Hoops” (see Appendix D). This game required the students to move around the gym but also worked on developing collaboration among the participants. It was refreshing watching the older students encourage the younger students to come and join them in their hoop.

As the day ended I felt the students were very tired, but I was happy with the effort they had given. I did start to develop a list of questions I felt I needed to consider for the future weeks of this program.

- Should the students continue doing stations every day or should they do them every other day?
- What was the best sequence of activities for the day? Should the students do the stations first followed by the cardiovascular activities or would the reverse order make more sense?

After consideration, I decided to stay with the order I had used for this day with the station work occurring immediately following the stretching. Since station work allowed the students to work on many different aspects of fitness, I found this might be the most valuable part of the Summer Fitness Club. Station work was an excellent way for students to improve their flexibility, muscular strength, and muscular endurance. Therefore, if I wanted maximum effort from the students, it was best if they performed station work on a daily basis and did so early in the session instead of at the end of the day when they might be tired.

Day 3: Wednesday, June 9. On this day, there were 15 out of 20 students present. The day started in an unexpected way. I had just completed preparing for the day's stations when I was greeted by a parent telling me that her child was "Very sore and she has my permission to do as little or as much work as she wants to today." She also informed me that her son was also sore but not as much as her daughter. A couple other students came in declaring they were also sore. I asked them how many of them had done stretching on their own as I had suggested previously. Only two students raised their hands. I was surprised and alarmed.

This disappointed me as I thought we had had a nice discussion previously about the importance of focusing on stretching during class and on their own at home. At this point, I felt the students were not understanding the conversations concerning stretching. After six weeks, if the students did not understand the importance of stretching it would be hard for them to see progress. During the Summer Fitness Club, I could have them perform activities whether or not they were sore. At home, however, I was not confident the work would get done if they felt sore. So far, on each of the first two days I had talked

about and demonstrated the importance of stretching. I needed to monitor and observe the students in their stretching to have a clear understanding of whether they were following directions correctly. In addition, I thought it was important for the families to understand the importance of stretching. Hopefully, through observation and repetition the students would gain a better understanding of stretching.

This was a good lesson for me about the Summer Fitness Club, as I was beginning to make assumptions based on prior knowledge. For example, I assumed that since we had had a discussion about the importance of stretching, that the students would just do so on their own. I also assumed that they would fill out their nutrition chart. I was wrong on both counts. Although I had mentioned in front of the parents the importance of stretching, I still felt I needed to consider adjusting the daily plan to allow for time to accomplish these tasks.

At 9:00 a. m. the students went to the outdoor running track on our school property for their warm-up. They ran half a lap or one-eighth of a mile followed up by walking the rest of the way to complete one full lap or a quarter of a mile. Once again Jonathon led the stretching. I decided to add more time to stretching, allowing the children additional time to do a more thorough job of this important activity. As children were stretching, I completed the roll call, and five children were missing, three at a summer camp and two on vacation. Once again, I repeated the importance of stretching on their own at home. I told them, “Stretch at home as you are watching TV. When a commercial comes on, challenge yourself to stretch different parts of your body until the commercial is over.” I assured the students that if they stretched in the evening their bodies would feel better in the future and certainly the next morning.

Based on my decision from the previous session, I decided to keep the order of the day the same as it had been previously. I did this because the weather, although warm, was not expected to warm up as much as the preceding day. Therefore, the children could not use the heat as an excuse to slow down or to stop for a while.

Once again, the students did the same stations in the same order as on the first two days. As evidenced by their attention and their focus, I felt that the students worked hard, and as a result, their score sheets, which I reviewed at the end of the day, indicated some improvement in scores. At the completion of the station work, the students appeared to be tired and ready for a break. Based on my observations of the younger students, I did note it was important for them to work with the older students or the student volunteers. This was particularly true on the sit-up station and the wall-sit station. The older students did motivate the younger ones but more importantly they served as role-models to demonstrate the correct way to perform the task at each station. In addition, the older students were able to help the younger children track and record their scores accurately.

Our cardiovascular activity for the day was a game called “No Man’s Land” (see Appendix D). Based on my knowledge of the students and their athletic ability, I tried to divide them into two even teams. I had students line up by grade level. I went to each grouping and placed one strong player on one side and the next strongest on the other side. I did this until all of the players were on a team.

This was a strategic game that had an offense and a defense. As I was watching, every student was actively involved. A couple of leaders did emerge in each team, and they developed a strategy that others soon followed. For instance, when the game began, one team had all of their teammates except two run to the other side. The other team

tagged most of them, and they had to start over. Another strategy the students employed had the best three players hanging back by the end line to catch anyone who came over. It was fun to watch the different ideas. In the end, each team "won" four times.

What was so amazing to me was how well the older students encouraged and pushed the younger ones to help them be successful in making it to the other side. I loved how they were playing and working together. For such a varied group, they got along and encouraged each other! One other note, doing the stations first proved to be beneficial, and so it was a change I decided to make permanent for the duration of the Summer Fitness Club. I also realized the students had worked hard over the first three days of the study, so I suggested to them that our cardiovascular activity for the next day would be to go on a long walk.

Day 4: Thursday, June 10. Nineteen out of the 20 students were present. As they arrived I could sense that the children were very weary, even though all 19 arrived and entered on time. They walked in slowly and went straight to the stage to sit down as opposed to running around and playing tag games as they had done the previous two days. One student Megan said, "Please make it easy today." My goal for the day was to help students understand there were other ways to stay fit instead of always playing games. One such way was walking. Walking should be considered a lifetime skill, one that can be performed for the whole of one's life. I had decided that we would go for a 25-minute walk that morning. Since this was an outdoor activity with the temperatures expected to be close to 90˚, I decided to walk before having them do their station work. The volunteer assistant, Jonathon, was at the front of the line, and I was at the end of the line. The children were scattered in between the two of us. We started by walking at a

regular walking pace with the intention of stepping up the paces later. We covered roughly 1.5 miles in 25 minutes. The students seemed to enjoy this. We returned to the gym and stretched for 15 minutes.

Following the stretching period, they did station work. In order to break the monotony of the station work and to challenge the students to work different core muscle groups, I decided this would be the last day of doing this particular configuration of stations. Only the curl-ups, modified pull-ups, and leg lifts would be retained for the following week. I planned to use mostly new stations designed to work the same core muscle groups in a different way than the previous stations. As the students were participating in station work, I sat at the hamstring stretch station. As they arrived at this station I asked each child to provide feedback by answering questions about the program. The questions I asked were as follows:

- Do you like the Summer Fitness Club?
- What is your favorite activity?
- If you could change anything, what would it be?

Do you like the Summer Fitness Club? I was pleased with the responses I received. Among them were, "I love it," "I think it is awesome," "I like it because it surprised me that I could do a curl-up," and "I like it because I get to do stuff with one of my favorite teachers over the summer." One student Megan mentioned that she did not like the program because she liked her other camp better. I asked her why she felt that way and she said, "Because they play more games." This was the same person who had missed two days in the week to attend her other camp. I mentioned to her that we had played many games while she had been gone.

What is your favorite activity? When I asked the students which activity they liked best, the responses included "I love the stations," "I really like the cardiovascular games," and "I like the stations because they are helping me improve my fitness scores." Every child had something positive to say, which I found encouraging. It made me confident that the students were enjoying the Summer Fitness Club.

If you could change anything, what would it be? Reaction to the question about what they would change varied from individual to individual. Among the responses were to "Shorten the amount of time at each station," "Eliminate certain stations because they are too hard," "Play more running games," "Do more outside activities," and "Extend the program for another hour."

As I reflected on the students' comments, I was trying to determine if each suggestion would benefit all of the students. For example, if I shortened the amount of time at each station, I would take away from the cardiovascular endurance that was so important to continue to improve. What I did want to shorten was the amount of time between each station. I wanted students to work hard for a continuous amount of time. Therefore, shorter times between stations would allow for more continuous work.

Up to that point I had given the children roughly 20 seconds to record their score and to move from one station to the next. At first, I realized this was the right amount of time. However, as they learned the procedure for the stations, they became very fast at recording and moving. Therefore, they had time to talk with their friends and lose focus. If the timing were shortened, there would not be time to do this. In addition, their heart rate would stay up in to a beneficial level. As far as the comment concerning the elimination of some stations because they were too hard, my belief was that over time

these stations would become easier as the core muscle groups continue to be challenged. Thus, these stations would become easier as the Summer Fitness Camp continued.

I felt the students were already doing enough running games to improve their cardiovascular endurance so I did not feel it necessary to do more. In addition, increasing the program for one hour would be hard for all of the students to manage. They were tired at the end of two hours so I felt three hours would be difficult. I felt that if this Summer Fitness Club were to be repeated the following summer, lengthening the sessions might be a consideration if I felt the students demonstrated adequate stamina.

Based on the students' responses, I felt they were both learning and enjoying the Summer Fitness Club. I just hoped that fitness test scores would improve, but even if they did not, I felt confident the students were benefiting and having fun.

Following the stations I planned two cardiovascular activities called "Rudolph's Treasure" (Charpenel, 2001) and "Bowling Ball Blitz" (see Appendix D).

As the games were being played this week, I was observing and supervising them. I was also monitoring the safety of each activity. In addition, I was using this time to enter comments, either my own or those of the students into my journal. I also would insert suggestions and ideas of ways to improve the daily operation of the Summer Fitness Club.

Once again, I kept 10 minutes at the end of the class for stretching. I asked the students to stay away from friends for this so they could concentrate on stretching. I also reminded them to stretch on their own over the next three days, because this was our last meeting before the weekend. In addition, we had a discussion about the food charts. I asked the children if any of any of them had selected a healthy snack over one that was

not so good. One student, Kevin said that as a family, they decided to have frozen fruit bars as opposed to ice cream. He continued stating, "They were really good…and healthy" (Personal Journal, June 10, 2010).

That brought the first week to an end, and my immediate impression was that it had been successful. I had compared test scores from the spring to the scores from the stations. Some students who had struggled with the abdominal strength fitness test, the curl-up test, were able to complete more curl-ups than they had previously. In addition, one young lady who had not been able to complete a curl-up during our testing period was able to do two for me on Thursday! That was very encouraging.

As I reflected on the week's activities, I felt I needed to focus on developing practices that would help the students so they would not be so sore. In addition, I needed to continue to focus on motivating the children to work hard on a daily basis. The students seemed to be enjoying the program and the activities. They also seemed to be enjoying the workouts, but they got tired and less interested as each day progressed. This was something to reflect on during the coming weeks. The heat and the lack of air conditioning might have had something to do with this issue.

Introduction – Narrative of Week Two Days 5 – 8

Monday, June 14 – Thursday, June 17. This section will be divided into two parts. In the first section, I will discuss my reflections on Week One and changes I decided to make to the Summer Fitness Club as a result. The second section will be an overview or summary of the week's activities and journaling including a description of certain specific events of the week in more detail.

Reflections from Week One. According to my journal writing at the end of the first week I had several concerns about the Summer Fitness Club. These concerns were as follows:

1. Have the students worked so hard that they are burned out, thus, have they decided not to participate anymore?
2. Could the students who missed time still benefit from participating?
3. What stations should the students do?
4. What activity can we do to keep the students moving? And, how can I keep the older students excited and motivated while challenging the younger children?
5. Will the weather hold out?
6. How can I help students improve their stretching? (Personal Journal, June 10, 2010)

Have the students worked so hard that they are burned out, thus, have they decided not to participate anymore? Although the students seemed to have had fun during the first week of the Summer Fitness Club, I was concerned as to whether they all would return for Week Two. Week One had been a hard week for the students, one that required a good effort which in turn resulted in most students showing improvement on their scores at the fitness stations. I personally felt I had pushed them too hard and wondered if this was enough to make the students stop participating. I journaled,

> Maybe next week I need to lighten the load. Last week the stations were stations that demanded a hard effort from the students. The games also required the students to exhort a lot of energy. In the morning, the parents stated how tired the students were and how well they were sleeping at night…they thought it was

> great! But, am I pushing them too hard? Will the students still want to participate in the Summer Fitness Club if it continues to wear the students out? And, if forced to come, will they give their best effort? (Personal Journal, June 11, 2010)

Could the students who missed time still benefit from participating? During Week One a total of five students had missed some time, and as I was beginning to plan for Week Two, I had some concerns about attendance. Fortunately, based on my prior knowledge of each child, I believed I had a committed group of children who enjoyed Physical Education and participating in the Summer Fitness Club. In addition, as evidenced by their willingness to assist the school and our program whenever requested, their parents also were supportive so I felt fairly optimistic that all of the students would return unless a vacation had been planned.

I was also curious about students missing long periods of time. If students missed over half of the time, would it be hard to show whether my program was really helping the students? I really did not want students missing a week at a time for vacation, because working with them continuously for six weeks obviously had an advantage over working with them for five weeks. However, since the University had delayed the approval of my project, I had not been able to recruit participants until the final week of school, and so many families already had their vacations planned. Since this class was not offered as a credit course for the children and since I needed numbers for my study, I agreed to allow students to miss up to five days of the study. After all, a student exercising for some of the time during the summer break is better than a child who did not exercise at all.

What stations should the students do? One important change that I made for the second week with the stations, based on feedback in the form of conversations with some

of the students during the first week, was to make sure the stations were strategically placed around the gym so that students did not go to two stations in a row that focused on the same core muscle group. On the Thursday of the first week before the students were dismissed, one of them, a fifth grader, Kevin, had said to me, “Mr. Price, when we do stations it would be helpful if you spread the stations out.” I asked him what he meant and he followed up with, “I get very tired when I do the curl-up station and then the next station is the leg lift station.” He continued, “If we do the curl-up station the next station should focus on something other than our stomach muscles!” I totally agreed. It is amazing that the smallest things can be taught to us or brought to our attention by children.

This left me considering what stations the students should perform and in what order rotation should occur during the second week. Because of the potential benefit of some of the Week One’s stations, I felt it necessary to keep some those stations. However, I wanted the students to find stations challenging, but I also wanted them to feel that there was variety, that they were being successful, and that they were having fun. I selected the following stations for Week Two because I felt they would either help the students focus on core groups of muscles used for fitness testing or because they would make the students work hard but also be fun for them. To see which stations were carried over from the previous week, please see Appendix F. In addition, please see Appendix E for a full description of each station.

- Cargo-net - This station was designed to develop upper body and upper leg muscular strength and endurance.
- Leg –Lifts – This station was designed to develop abdominal muscular strength.

- Modified pull-ups – This station was designed to help students develop abdominal muscular strength.
- Curl-ups - This station was designed to help students develop abdominal muscular strength and endurance.
- Sit-and-reach - This station was designed to develop hamstring flexibility.
- Step-ups - This station was designed to develop cardiovascular endurance.
- Swinging Rope –This station was designed to develop muscular strength.
- Balance Discs – This station was designed to help children build muscular strength and flexibility on their ankle and knee joints.
- Balance Disc Push-Ups - This station was designed to develop muscular strength.
- Shuttle Run - This station was designed to help children with muscular flexibility and cardiovascular endurance.

What activity can we do to keep the students moving? And, how can I keep the older students excited and motivated while challenging the younger children? Next I had to determine what activities could help students elevate their heart rate and sustain it over time while keeping them motivated yet challenged. During the school year, my teaching partner and I had many resources to use to search for daily activities for our classes. One of the sources, *PE 2 the Max: Maximize Skills, Participation, Teamwork, and Fun* (Hughes, 2005) we considered a great resource for activities that were easy to play and easy to organize. The book also offered ideas for different grade levels. I considered this book the perfect source. In addition, I looked through other books including Bailey's *The Physical Educator's Big Book of Sport Lead-Up Games* (2004) and Landy's series of books entitled *Ready-to-Use P. E. Activities for Grades K - 2*

(1992), 3 - 4 (1992), and 5 - 6 (1993) to identify other activities that I felt would be fun and challenging to use during the second week. Those activities included games that had previously been played in Physical Education during the school year, plus some new activities. The names of some of the games played were: "Bowling Ball Blitz" and "Go for the Gold" (see Appendix D).

Will the weather hold out? As I prepared for the second week my last major concern was the weather, because during the first week I had been using the indoor facilities at North Glendale for my study but the air conditioning had not been turned on. The forecast for Week Two suggested that the temperatures were going to hover around 90° with high humidity, producing a rather uncomfortable and potentially dangerous heat index. Therefore, I decided that all of the activities for the second week should take place inside. Since the air was not circulating in the gym, it was not much cooler inside but at least the participants would not be exposed to the sun's direct light. This is a matter that will be discussed in greater detail later in this week and in Week Three.

How can I help students improve their stretching? The final reflection from the first days of the program where I felt change was needed concerned the need for stretching. There are many benefits to stretching properly before and after a workout. Among the benefits are that stretching increases flexibility, improves range of motion of joints, improves circulation, and can relieve stress (Mayo Foundation for Medical Education and Research, 2009). During the first couple of days, even with encouragement from me, the students did not really focus adequately on stretching. They were coming back complaining about being sore. After encouraging them to stretch on their own, I decided to have them stretch twice a day during their time with me. I planned

for them to stretch at the beginning of class and at the end of the session (Personal Journal, June 10, 2010). I decided to continue to ask, listen to, and observe the students to see if an increased awareness on stretching was making a difference.

Overview of Week Two

As I said in my reflections following Week One, I was anxious to see whether all the students would return for Week Two or whether some would have talked their parents into allowing them to stay home. Much to my joy, all but one student were present for the first day of Week Two, and that student had notified me before the study that she would be on vacation during the week. In addition, one student who had missed the first week was now in attendance. He came a few minutes early, and I had a discussion with both him and his mother. I explained the food chart to them. I continued by explaining the program to Jack and how it was important for students to have fun but also to work hard. He was able to pair up with a friend, and he seemed to fit right in with everyone else.

Since, in my opinion, students had a better chance of showing improvement in their fitness testing if present for the whole of the summer camp, I obviously had to try to make the Summer Fitness Club fun and relevant for each student. If the students were not enjoying the camp, because it was voluntary, my fear was they would not attend. I wanted the students to work hard, but it was just as important for them to have fun.

Week Two was similar to Week One as far as routines were concerned. Students who arrived early were able to play at the different stations until 9:00 a. m. At 9:00 a. m. roll was taken. The students then proceeded to play low intensity games with the goal of elevating their heart rate. This activity lasted for three minutes. Following the game, the students stretched. Each day different students were asked to lead the stretching period.

Realizing there was some extra time built in for stations and to assist the children with their soreness, I was committed to having the students stretch for 10 – 12 minutes, allowing the students in charge of leading the stretches enough time to stretch muscles from head to toe.

Following the stretching period, the students participated in fitness stations. Once again, they were required to monitor their growth by tracking their scores at each station. At the end of the day, I collected their score sheets. The stations were distributed in a more organized way than in Week One. Based on feedback from one student, I now made sure that the students would not have to work two stations in a row that focused on the same core group of muscles. For example, since Balance Disc push-ups and Climbing the Cargo Net were both used to help develop upper body muscular strength, I wanted to make sure to space them out.

The change of spacing the fitness stations apart seemed to make the station work more easily for the children. They were no longer exerting maximum effort for two core muscle groups in a row. This was a necessary change! As I had done previously in Week One, I paired older students with younger students so the older students could help demonstrate and explain the activities to the younger students.

I continued to be optimistic that the students would continue to give a great effort. They were a group of individuals who, for the most part, were competitive. Although there were times when motivation was needed, such as the last day of the week, I felt they had molded quickly into a group who wanted to do their best every day, and who would work extremely hard in order to improve their scores. As evidenced by the following quote I received during a conversation from a student I shall call Ryan, they

would work hard to beat their previous score."Mr. Price, I was so tired when I got to the curl-up station but last week I did 23 curl-ups so today I knew I had to do more. I did 25 curl-ups!" (Personal Journal, June 14, 2010). Ryan, I felt, was typical of most of the students in my study.

Another observation that became clear for me during the first two weeks of the Summer Fitness Club was that the students were forming better eating and snacking habits. As each day concluded I continued to talk with them about the importance of healthy choices for a healthy lifestyle. During break time I noticed participants making smart choices when it came to eating their snack and drinking a beverage. Most of the children were drinking water, and a few were drinking fruit juice. I did not see anyone drinking a cold soda as I had during the first two days. In addition, they were eating healthy snacks. I saw children eating fruit, pretzels, and vegetables. Based on experiences from early in the program, I envisioned seeing children eating junk food, but not one child had junk food! I considered this major progress.

On Day 7, Wednesday, June 16, 2010, as the students were snacking, I asked the students individually if participating in this program had changed any of their eating habits. Below are some of the comments children shared with me that were posted in my journal:

- "My diet never has meat in it; yesterday I ate a chicken sandwich."
- "I was picking out cereal at the store, I looked at the nutrition label and I saw sugar was the second ingredient listed and I told my mom we could not buy it."
- "I have had a lot more water over the past week than soda!"
- "I have looked at the label on juice to make sure it is 100% juice."

- "Instead of snacking on candy, I am snacking on fruits and veggies." (Personal Journal, 6/16/10)

So it became clear to me that the program was helping several of the students. I hoped to be able to confirm at a later date, when I tested them, if it was benefiting the majority of the students.

On Wednesday of the second week, I paired the students up by grade level so they could challenge each other. This worked well, I felt, as the students seemed to put forth a great effort. I compared score sheets from earlier in the week when the students had been paired with someone who was not in their grade to score sheets from when the students were with a partner in their grade level, and found that most of the students had improved their scores at numerous stations. One area of improvement occurred with the modified pull-ups station where most students improved their score from previous days by at least one pull-up. Some of the children did five pull-ups, thus scoring well enough to be in the Healthy Fitness Zone or passing the standards established by the state of Missouri. Progress was being made.

To my surprise, perhaps because of their hard work, the children seemed to be exhausted during Week Two. I tried to envision why and concluded that it was because of two different factors. First of all, they were working physically harder than they had in the past and they were doing it on consecutive days. Most of the students did some sort of extracurricular activity but not four days in a row. The other factor was that the air conditioning had been turned off at North Glendale at the time and the temperature and the humidity were continuing to rise. As with all districts nationwide, the district had made a conscious effort to save money by turning off air conditioning. This made the

gym uncomfortable, something that had also been the case in Week One. In order to get the air moving in the gym, we had to open the doors and turn on fans. This allowed the humidity level in the gym to climb. As with most of us, as the temperature rises our level of activity decreases.

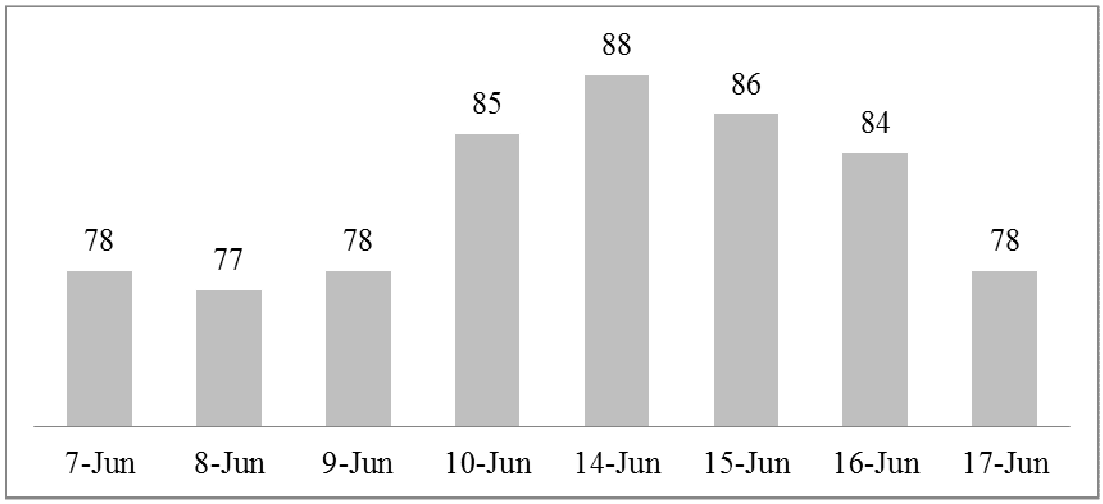

Figure 10. Outside temperatures for Weeks One and Two.

The subsequent figures show the weather patterns for the first two weeks. Figure 10 shows the temperature over those two weeks and Figure 11 shows the humidity level for the same two weeks.

These figures were collected daily at 10:51 a. m. The combination of the two forms the Heat Index (see Figure 12). The heat index numbers combined with the air conditioning being turned off made for an uncomfortable first two weeks. My sense was that, given these circumstances, the students had coped fairly well over that period. They seemed to work hard and drink enough water, though by the end of the day they were often drenched with sweat.

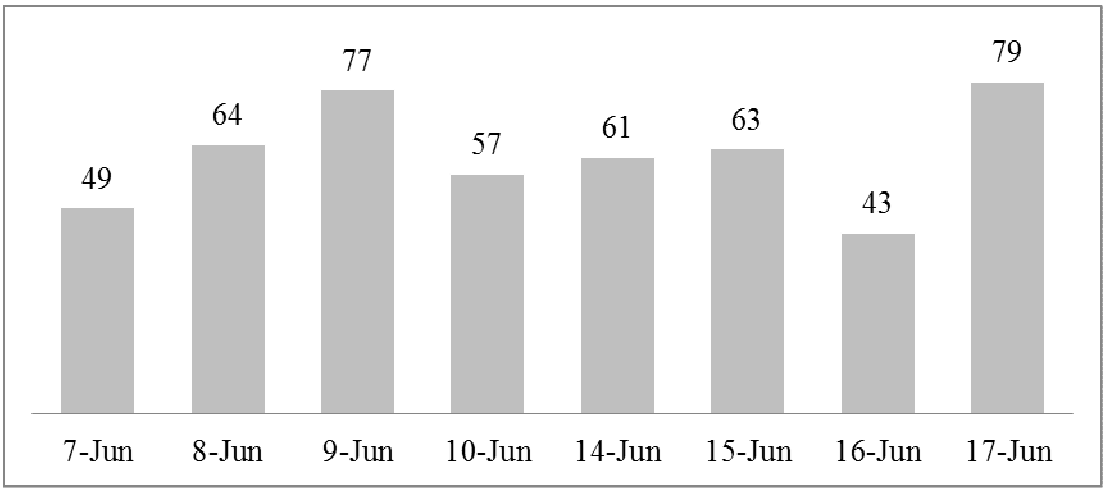

Figure 11. The percentage of outside humidity for Weeks One and Two.

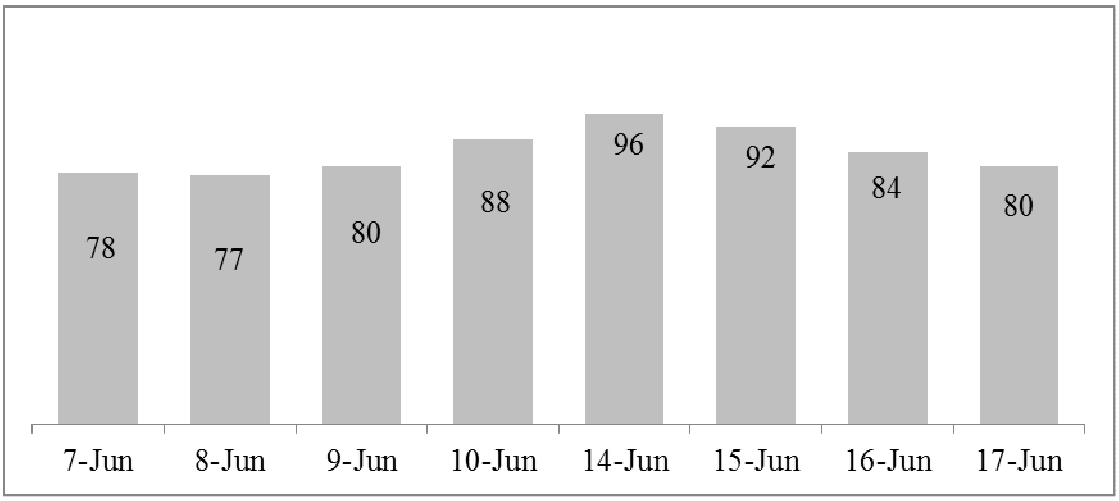

Figure 12. Heat index readings for Weeks One and Two.

On June 17, 2010, the last day of Week Two, I used extrinsic motivation, compensating the students for their hard work with a reward, and planned on offering the children a fun activity if they continued to work hard at the stations. They had had some games that they enjoyed playing more than others. I told them if they continued to work hard during the stations I would allow them to pick the cardiovascular activity. I felt this idea would force them to challenge themselves to obtain high scores for their station work. I felt this was successful because on that day the students had the highest scores of the week on the fitness stations. I was very proud of them. They appeared to be a group

that needed to be motivated to challenge themselves. The students picked “No Man’s Land” to play (see Appendix D).

Following station work each day, I picked games for the children that were designed to challenge them to raise their heart rate and to sustain it for a period of 30 minutes. Some of the activities played during Week Two included, “Go for the Gold,” “Mickey Mouse,” “Bowling Ball Blitz,” “Scooter Handball,” and “Space Invaders” (see Appendix D). I felt these activities both challenged the children and allowed them to have fun. As the children played, it was obvious they were having fun and getting a good workout. The older children seemed to enjoy challenging themselves by seeing if they could outlast the others while the younger students thought it was great if they were able to knock an older student’s target to the ground.

After the activity each day, with 15 minutes remaining, I made the students take time to stretch, following the lead of two of the participants. The goal was to make sure the students stretched their muscles to help reduce soreness after their previous exertions.

Part of stretching included having two different students lead the stretches every day. One day, I somewhat hesitantly picked two girls, Angela and Susan to lead the stretching to get our bodies ready for the work that was about to take place. These two girls, though shy and seemingly somewhat unmotivated, did an excellent job. I did not have to offer any additional stretches for them. This showed me growth in these two girls because during the school year, if they had led stretches they would not have been clear about what to do. I felt that my previous knowledge of these girls lead me to judge them unfairly. The girls had shown me I should not be too hasty to jump to negative conclusions about fitness abilities or attitudes of students.

Prior to and during the Fitness Summer Camp, one concern I had was whether I had all of the proper procedures and resources in place in case of an emergency. At the end of the second week one incident, though minor, occurred that reassured me that I was adequately prepared. One of the participants came to me and said, “Mr. Price I do not feel well.” I told her to go to the restroom and wash her face off to cool down. When she had not returned after seven minutes, I went to the restroom to check on her, and she mentioned that she had vomited into the toilet. At the end of the day her mother told me that this was a normal occurrence when she is exerting energy and that the girl would be fine.

This made me re-examine the medical set-up for my program. When I did this I felt confident in the fact that I would be ready should an emergency occur. I did have parameters set in place to deal with an issue. I had instant access to the office that was open every day; I had my cell phone for emergencies. In addition, the school was in a small community, and emergency personnel typically arrived at our school within five minutes of receiving a 911 call. I also had gathered bandages, ointment, wraps, gloves, peroxide and the like. In addition I had access to a wonderful cure-all called ice.

Realizing that observations and opinions of colleagues is a valid form of data collection, and to get perspectives on the program that were not merely my own, I had invited follow colleagues to come and observe the Summer Fitness Club and provide me written feedback. These teachers were asked prior to the program to come and observe. The intent was to continue to monitor the program and challenge myself to make it better. I had asked associates from my building and other Physical Education teachers from the district to observe. The hope was to have a mixture of Physical Education teachers who

had a working knowledge of Physical Education and a healthy-lifestyle and classroom teachers who did not have as much wellness knowledge.

On Wednesday of Week Two, the first of many observers Vickie Johnson, our Reading Specialist, mentioned how impressed she was that the students had been so focused during the stretching period (see Appendix G). The stretching two times daily seemed to have paid off. As the second week progressed, the students did not seem to be as sore as they had been previously, and they seemed to pay attention and be more focused during that time. I was glad I had decided to make this change. My summary of some of Mrs. Johnson's observations follows below (please see Appendix G for her entire report):

- The instructor reemphasized the goals and purposes of some of the stations. He reminded them that this was to help them with core strength and to improve their fitness testing results.
- There was a good variety of games that used different muscle groups.
- This observer was impressed with the relaxed, yet firm way the instructor maintained the balance of fun, fitness, and discipline in order to receive the best workout and avoid chaos.
- The instructor clearly explained each game and would interact to maintain the pace of the game. (Johnson, Personal Reflection, June 17, 2010)

The feedback provided by Mrs. Johnson clearly stated that she felt the program was being organized and run in an orderly fashion. She noted that I visited with the students, thus building relationships with them.

Mrs. Johnson also took the time to track one particular student I shall name Billy. He was a student who was very smart but also tended to be rather uncoordinated and unmotivated. When motivated, he worked hard. During the session that Mrs. Johnson observed, Billy was participating, without a great effort, during the activities he felt comfortable with, but in other activities Jonathon had to assist him. Below are some comments from Mrs. Johnson. Please see Appendix H for the full report.

- He did participate in all areas of the camp, some for longer periods of time than others.
- During the rotating stations the assistant not only refocused the student, he demonstrated what the student needed to do at each station.
- This student demonstrated better lower body muscle control. Seemed more focused when he could use his legs. Seemed to tire out when he had to climb the cargo rope and straight rope. (Johnson, Personal Reflection, June 17, 2010)

Once again, this feedback provided me with useful information. I determined that Billy had worked his hardest and remained on task when he was working one-on-one with Jonathon. Therefore, having him work more regularly with Jonathon would improve his work rate and involvement. Thus, when the opportunity presented itself, I needed to make sure Jonathon was available to work with Billy.

On the last day of Week Two one incident at the stations really excited me because I saw many students record a first. I witnessed one student who had never before completed a pull-up, do two on his own. I observed two students climb as high as they ever had on the cargo net. One student who had not completed a single curl-up on the fitness testing in March was now able to complete five, a major accomplishment for this

young lady. She had very low muscle tone but had worked hard to accomplish this feat. I found this affirming. Those exemplars of significant improvement gave me the indication that progress was being made.

After two weeks, I felt my journaling and reflection had resulted in some changes to the daily activities. These changes were as follows:

1. I had changed the order of things during each day based on the fact that I felt I was getting maximum effort from the students first thing in the morning as opposed to later in the morning.
2. I had increased the amount of and the intensity of their stretching. The children seemed to be less sore because of this.
3. I had selected partners for stations in different ways; sometimes partners were picked based on their prior performance so they could challenge each other, and at other times they were paired with students who are either older or younger than themselves. This was done so the older students could serve as role-models or mentors to the younger students.

For the last test review activity of the second week I had the students run a practice Fitnessgram PACER test. As a reminder, the Kirkwood School District uses parts of the Fitnessgram testing program and parts of Presidential Fitness Testing program to access the fitness levels of its students. The PACER test is from the Fitnessgram testing battery and is used to check cardiovascular endurance, which is,

> the body's ability to continue exertion while getting energy from the aerobic system used to supply the body with energy. Cardiovascular endurance then is most useful for long distance sports; for marathon training, long distance running,

> jogging and swimming, however it will also be useful for everyone else and a lack of it will lead to individuals becoming quickly tired and out of breath. (LeMouse, 2010, para. 1)

For the PACER test, the students lined up on one end line of the gym, and they listened for music. The CD that came with the Fitnessgram program has a recorded cadence. Every time the students hear the beep, they run from one line to another 63 feet away. They then wait for the next beep and then run back to the previous spot. They do this as many times as possible. Every minute the amount of time between the beeps gets shorter and shorter.

I told all of the students my goal for the PACER was for all of the students to make it to 20 laps which was lower than the standard for the district but an improvement for the majority of the students. For the first 10 laps every child gave a good effort, and then two of them started to struggle. Out of 20 students, 16 participants eventually made it to 20 laps. I encouraged students who had not made it to keep running, and even though they did not make it to the line after each beep, they just changed directions and tried to run to the line. I felt the struggling students were really tired. Overall, I felt the students had performed well on the PACER Test with 80% of them achieving the high goal I had set!

On Thursday, the last day of Week Two, while the students were stretching at the end of the day, I reminded them that the temperature for the first day of Week Three was expected to exceed 95°. Although we had had water fountains in the hallways leading to the gym, I encouraged the students to make sure they brought plenty of water to the

session. In addition, I asked them to bring a healthy snack, telling them that one way to beat the heat was to stay hydrated and nourished.

Finally, the best news of all! Fortunately, a district heating and cooling employee approached me at the end of the second week. He asked what I was doing at school and I told him of the study. He told me that if I was working with students from the district, he would turn on the air conditioning. He said that he had forgotten I was going to be there and would make sure the air conditioning was on for the rest of the program. As a result, weeks three through six of the Summer Fitness Camp were conducted in a controlled environment, which certainly made for a safer setting. I was not sure the district knew about that, but I decided that was not my concern, the safety of the students was paramount.

At the conclusion of the first two weeks I remember thinking to myself, “Wow that was a quick week!” I was so thankful that we had three-day weekends for the students to recuperate. This also allowed me time to reflect on the program, to keep up with my field notes, and to make changes that I felt were important. The main question I had as I was preparing for Week Three was, “Since I know the children will be fitness testing on Wednesday and Thursday of this week, how hard should I push them?” I wanted to make fitness testing as easy as possible for the children so they would be able to perform to the best of their ability. If I exhausted them, they might not perform as well as I hoped. For Week Three I wanted to challenge the students, but I did not want to wear them out. After all of the hard work the students had put forth, I wanted to do all I could to ensure improvement for each participant. One thing that instantly assisted in helping towards this goal was the fact that the air conditioning unit had been turned on in the

gymnasium. The temperature outside was 85°, but in the gym it felt much cooler. As the study moved forward into Week Three, I was pleased with the progress the students had made. They had worked hard on a daily basis, and I felt they were always trying to do better than they had done on the previous day.

Narrative of Week 3 Days 9 – 12

Knowing that the plan was to lessen the load this week due to the upcoming battery of fitness tests, I planned on doing stations that either focused on a core muscular area or simply provided a fun activity. The fun stations were still important because they helped develop cardiovascular endurance, a key cornerstone of a healthy lifestyle. The stations are listed below. Please see Appendix E for a full description of each station, and Appendix F regarding which stations were carried over from the previous week:

- Cargo-net - This station was designed to develop upper body and upper leg muscular strength and endurance.
- Medicine Balls - This station was designed to develop upper arm and body muscular strength.
- Modified pull-ups - This station was designed to develop upper body muscular strength and endurance.
- Curl-ups - This station was designed to develop abdominal muscular strength and endurance.
- Sit-and-reach - This station was designed to develop hamstring flexibility.
- Step-ups - This station was designed to develop cardiovascular endurance.
- Swinging Rope - This station was designed to develop muscular strength.

- Balance Discs - This station was designed to build muscular strength and flexibility on students' ankle and knee joints.
- Roller-Racers - This station was designed to provide opportunity for cardiovascular endurance.
- Stilts/Romper Stompers - This station was designed to increase coordination and muscular strength.

As I thought ahead and as I contemplated the coming week I had had the following questions:

- Will the fitness test scores improve and reflect the hard work the students have been doing?
- Although it appears to me the program is working…is it?
- What can I do to keep the students interested for the full six weeks?
- Do I have enough people coming to observe the program and provide me feedback?
- When checking heart rate, how accurate are the children?

Day 9: Monday, June 21. Sixteen out of 20 students were present. With the stations and plans in place, it was with a sense of relief that I watched the students arriving. They were excited because the air conditioning had been turned on. I felt they were livelier and more excited than they had been in the past. I thought the better climate would lift the students' morale and increase their likelihood of success.

The great thing about the activities the students had played during the Summer Fitness Club during the opening weeks was that the students did not even realize what a great workout they were receiving. They played hard while appearing to have fun. We

did stop to check heart rates and the children all seemed to have a heart rate that was consistently over 120 bpm, which meant the students were getting a good workout.

This week would complete half of the program. My analysis at the beginning of Week Three was that the program was making a difference. According to the food logs the students had turned in at the end of the second week, they were making wiser choices about what to eat. They were minimizing the amounts of fats they chose. However, one student mentioned that he had had two donuts for breakfast that day. I told him that was not a good choice. Showing me he had understood the importance of proper nutrition, he said, "I know I need to make better choices, I was in a hurry this morning."

As far as the fitness work the students were performing well. I was very pleased with the progress and the results they had obtained. Each week, each child's score sheets had shown improvement. The question became how this improvement would show up in the upcoming fitness testing battery. In addition, the children were clearly working hard. One aspect that I had not anticipated was the amount of encouragement and kindness the older students displayed towards the younger students. They were all establishing quite a bond with each other, which I thought was beneficial to the success of each student.

Day 10: Tuesday, June 22. Thirteen out of 20 students were present. This was the last day of station work for the week, because I would be using that time to conduct our first fitness testing battery for the summer, over the last two days of the week. Yet again, I challenged the students to improve their scores from the previous day. They seemed excited that we would be having a change of pace over the next couple of days. The plan for the day included station work and playing two cardiovascular games called "Crocodile Mile" and "Starwars."

Before the students arrived, I received an email from a parent that her two children would not be joining us. She did not elaborate on the reasons. I thanked her for letting me know and said that I would see her students in the morning. As 9:00 a. m. approached there were only five students present. I was very disappointed. Was my program wearing thin on the students? Were they worn out? Did they not like the program? Was the program too long? Had I made someone angry? Did they not like me? Why weren't the students coming? Or, were they afraid of being tested? All of these questions were popping into my head. By 9:07 a. m., I had a larger crowd but seven students were absent.

Up until this point of the Summer Fitness Club, things had run smoothly without much distraction. However, I had a problem that occurred for the first time during Week Three. I had two students who were assisting me with the program, Jonathon and Kristen. They were beneficial and they did a fantastic job. They did anything I asked of them, and they were loyal to helping. There was another high school student who decided to show up and offer his service to assist me with the program. His brother was one of the participants of the Summer Fitness Club. However, when the two brothers were together, they were not on task. The participant did not do anything with the group but was only focused on his brother. The brother who was participating in the program did not give his best effort when his older brother was around, and this was going to affect his results with the fitness testing. The issue was that if I told the older brother he was not welcome, there was a possibility that his little brother would not come back, thus he would not be increasing his level of fitness during the summer time which was a goal of the Summer Fitness Club.

At the conclusion of the day, because of the distraction the older brother was providing, throwing balls too hard, grabbing his brother and throwing him to the ground, and roaming the school halls, I decided that if he disrupted the activities again and did not help all of the students, I would risk losing the participant by asking his brother to leave.

The stations were successful. The students gave a great effort and their station scores showed improvement over the previous day. As they were performing the stations, I decided to give the battery of fitness tests to two students who were going to miss the next day and Thursday. After testing, I was excited because both of them had either improved their scores or maintained their scores from the previous round of the district fitness testing battery in March, 2010. It appeared to me as if my program, study, and the students' dedication were paying off. I hoped that trend would continue over the next two days when fitness testing took place for the rest of the students.

Following the stations the students participated in a cardiovascular activity called "Crocodile Mile" (see Appendix D). In order for a team to be successful and win, they had to display both strategy and teamwork. The students really enjoyed this game and worked hard to win the game. After "Crocodile Mile" the students participated in a game called "Star Wars." The students worked tirelessly until they had won the game. I had picked both of these games to help elevate the students' heart rate. A few times during the games I had asked the students to stop playing and to count their heart rate. The students paused and took their heart rate. Most of the students had a heart rate that was between 120 and 140 beats per minute. This was a perfect rate for the students.

As previously mentioned, I used the game time as a time to enter comments from both students and myself into my journal. Among the comments would be my thoughts

on how to improve the Summer Fitness Club both immediately and in the future. In addition to journal entries I used this time to monitor and supervise the game.

Finally, on this day, as had been done on previous days, some students were complaining that the food chart I had given them was too small for them to write their food intake on. So I had created a new one that made it easier for the students to record their food (see Appendix I). I distributed new ones to the students.

Deb Preuss, a fifth grade teacher at North Glendale elementary school, attended this day to observe the class. She had agreed to observe and provide feedback on what a typical day looked like at the Summer Fitness Club. Below are some of her observations. For the full report please see Appendix J.

- The students move easily between stations and know what to do. Some put forth more effort than others. KP rotates often to encourage hard work.
- KP continues to work with a partner group on pull-ups and toe-touch stretches. A student on the floor to ceiling net makes it to the top for the first time! KP praises her effort and success.
- All students are active every minute—there is very little if any downtime during the station rotations. The complete rotation is finished when all stations are visited—usually around 30 minutes. (Preuss, Personal Reflections, June 23, 2010)

I was interested in Mrs. Preuss' comment about participation. Since I was focused on administering fitness testing to the students who would be missing the following day, I was not able to observe the students at all of the stations. Thus, the students had time to not stay on task. For future study, I would recruit a Physical Education colleague to assist with administering the fitness tests each time the children were tested. In addition, those

individuals who were going to miss the "official" testing day would be invited to remain after the two hour session to perform their fitness testing.

Day 11: Wednesday, June 23. On this day, 18 out of 20 students were present. Today was the first of two days I had set aside for the fitness testing battery. My goal going into the day was to do two of the fitness tests. Since our gymnasium is only 60 feet long and the space needed for the PACER test is 63 feet the test needed to be conducted outdoors, I wanted to pick the cooler of the two days, so I kept the PACER test for Thursday. Over the next two days, I had hoped to see some success with the fitness testing and to see if the children had shown improvement in their test scores.

So that the testing consistency would stay the same from person to person, I proctored the test. I figured it would take about 90 minutes to test the 18 students, and that following the testing we would play a fun cardiovascular endurance game or go for a walk.

Therefore, so that I would not have to teach the children a new game, the plan going in was for them to play cardiovascular games we had played during the Summer Fitness Club while I was conducting the fitness testing battery. The games chosen were, "Bowling Ball Blitz," "Snow White," and "No Man's Land" (see Appendix D). Those games allowed for Jonathon and Kristen to both play and monitor the game while I was otherwise occupied. I felt comfortable that the games would not skew their fitness test scores because the children would be playing cardiovascular endurance games while the two tests focused on muscular strength and muscular endurance.

On the previous day I had mentioned to the students that the set-up would be different this day. As they entered I did not have the stations situated throughout the gym

as I normally had done. The children, having forgotten, were asking questions as they entered the gymnasium that morning. I repeated that we were not going to do station work that day and that the focus would be on participating in the battery of fitness tests. I gave them a motivational talk about taking the fitness testing seriously and giving their best effort. In addition, before they performed each of their tests, I privately reminded them of their previous score from March, 2010 to provide them a goal for that particular fitness test.

Before we started the battery of fitness tests and while the students were stretching, I tried to explain the two tests that would be administered that day. The two tests were the curl-up (minute) and the modified pull-up test. The curl-up test is used to measure abdominal muscle strength and endurance. Each child is tested individually while they lie on their backs, their knees at a 90° angle so that their feet are flat on the ground. With a partner holding their feet, they cross their arms with their hands on opposite shoulders. On "Go" the children raise their trunk and touch their elbows to their thigh and then lower their body back to the starting position. They do as many curl-ups as possible in one minute.

Once the curl-up test was completed, and while the cardiovascular games continued, the students individually performed the modified pull-up test. This test assessed upper body muscular strength and endurance. Using a piece of apparatus from the high school, described on page 50, the children were to grab a pole roughly an arm's length in front of their chest while lying on their backs. Using their muscular strength, they pulled their body up in the air until their chin was able to be higher than an elastic band three inches below the bar. As they were performing this test, they needed to be sure

to keep their body completely straight. Once their chin was over the band, they returned to the starting position. Once again, the students had to try to perform as many pull-ups as possible.

Up until this point of the study the students had performed admirably in the station work and the cardiovascular activities with few, if any, conflicts arising. Therefore, I did not anticipate any issues with the activities as I gave my attention to fitness testing during the testing phase of the day. As I was conducting the testing some friction had occurred between two groups of students. Fortunately, as I reviewed the scores it did not seem to have affected any individual during their fitness testing but it was very disheartening for me.

What I had really admired in the program to this point was how well the students had been able to get along and how well they had treated each other. They had supported each other and cheered for each other. But this day of testing was different. While I was proctoring the fitness tests several students were arguing and fighting throughout the games. They were cheating, arguing, grabbing at each other, and pushing each other. In addition, they were not listening to the leadership of Jonathon or Kristen. At the end of the session, I had a conversation with all of the students about the importance of working together and supporting others. I told them I had appreciated them participating in my study but needed their help to contribute to its success.

This led me to consider why the students were acting that way. The students who were having issues, although I had not yet had problems with them, were competitive and viewed winning as the most important element of the game. They were split up on two different teams, thus, emotions were high. Jonathon told me they had been saying

disrespectful comments to each other, and they were only focused on getting each other "out".

When I first reflected on this I wondered if the main reason was because of my absence as I was directing the fitness tests. I was not sure if this was because of the game or because they had been together over the past few weeks and tempers were starting to flare. However, this led me to the conclusion that for future studies for testing purposes, it would be beneficial to have two adults present, one (preferably a person who is familiar with the testing process but without a working knowledge of the children) who could administer the fitness test correctly and consistently, and the other to monitor the activities.

Day 12: Thursday, June 24. Eighteen out of 20 students were present. In spite of the drama on the previous day, I had a feeling that this was going to be a great day. When I woke up in the morning, I saw that the weather had cooled down. The temperature when I arrived at North Glendale was 78°, perfect weather for running outdoors. Since the PACER running test needed to be performed outside, this was great news. When the students arrived, we did a warm-up activity called "Everybody's It." Every student was a tagger and if you were tagged by someone you had to go against the wall and do 10 wall push-ups. They played for three minutes and then stretched. During this time I shared privately with each student their scores from the previous time they had participated in the PACER test in March, 2010. I suggested they think about their score and focus on trying to improve that score.

In order to complete the PACER test in an appropriate time frame the test was run in two different sets. Once we had proceeded outside, I divided the children into two

different groups based on their previous score on the PACER test. The students who had completed 23 or fewer laps in the March testing were gathered into one group while the students who had achieved more than 23 were in the second group. My thinking was that running the students with like groupings would challenge them to achieve at a higher rate than in the spring. The grouping of children who had performed 23 or fewer laps in March were the first group to test followed by the group of children who had done more than 23 laps in the spring.

Following the PACER test that took roughly 30 minutes to administer, I decided to reward the students for their hard work by allowing them to vote on the stations we were to perform this day. The students were paired with a partner, and between the two of them, they had picked one station that they both loved to perform. The stations they picked were: cargo net, swinging rope, jump ropes, roller racers, stilts, rings, medicine balls, and a pull/sit-up station. Part of the reason I allowed the students to pick the activities was to see which activities they had enjoyed. This would allow me to possibly use those stations again the following week when we gained our focus again and began to resume the hard work, or in a subsequent year.

While the students participated in station work, I administered the sit-and-reach test. This test from the President's Challenge fitness test measured the students' level of flexibility in their lower back and hamstrings. The students had to remove their shoes and place the bottom of their feet against a measuring board called the sit-and-reach board. The children, keeping their legs completely straight, slid their fingers on top of this board that had prerecorded scores marked on top as far as possible. They had three attempts, and I recorded their highest score.

The children enjoyed the station work so much they asked if they could complete the circuit twice, thus clarifying my belief that having the children pick the station assignment was successful. Once the station work was complete, the children played a game of “Star Wars.” Following the game, the children stretched and then were dismissed.

Once again the students had done a great job and we did not have any arguments, and made progress over the previous day. Why did they get along this day but not the previous? I asked each of the students involved with the issues what was the cause. They all mentioned that the other person started it. One child did say, “Without you watching I thought I could do it!” I replied, “A person who makes good choices does the right thing whether someone else is watching or not.” He assured me that he would try to do the right thing.

As will be discussed in chapter 6, I was pleased with these results and hoped to see the trends continue. I felt the students had worked hard, but the question I kept asking myself was, was the success of the program due to the work the students were doing or something else? Were they motivated to do well and if so, why? Were they motivated because they realized they were in a study? Or, was it a combination of both? I felt the students were motivated because they knew that I wanted them to be successful and they had challenged themselves on a daily basis to try to improve their score during the station work. I sensed the students had pushed themselves hard to succeed. I also felt that the participation and routine were factors for the children. I felt the students had received motivation from me and from their families to improve their lifestyle, so I believed this had contributed to the success of the program. They had internalized the motivation to do

their best. But I also felt that the students were self-motivated to improve their own success. I know that if I saw I had achieved a score on a certain performance, I was going to try hard trying to improve the next time, and I felt the same was probably true for many of the students. That being said, if the students had not put in the time and the effort for this study, there was no way they could have improved their scores. I was proud of them and excited to continue working with them in the remaining three weeks!

Overall, I was pleased with the results from this round of fitness testing. As evident from the data to be discussed in chapter 6, the majority of the students had improved over their pretest scores collected in March, 2010. However, those scores still had not improved enough to move the students into the Healthy Fitness Zone, which is established as an indicator of the fitness levels of students.

Chapter 5: The Second Phase – Weeks Four to Six

Day 13: Monday, June 28. On this day, there were 16 out of 20 students present. The program was halfway complete as I prepared for another week and for new stations. I contemplated new ideas because I believed that the students liked change, and they liked doing different stations. I hoped this would keep things exciting for them. I decided that we were three weeks away from the students doing these workouts on their own, so I thought it was important to establish stations which the children could perform on their own without any equipment. While four stations were carried over from the previous week, ones that challenged the students, I selected some new stations that were harder than the ones done in the past; they would continue to develop core muscle areas for the students. The stations were as follows (see Appendix E, also see Appendix F to view which stations were carried over from the previous week):

- Cargo-net - This station was designed to develop upper body and upper leg muscular strength and endurance.
- Medicine Balls –This station was designed to develop upper arm and body muscular strength.
- Army Man Crawls –This station was designed to develop upper body muscular strength.
- Flutter Kicks - This station was designed to develop abdominal muscular strength.
- Sit-and-reach - This station was designed to develop hamstring flexibility.
- Burpees/Thrusts – This station was designed to develop cardiovascular endurance, upper body muscular strength, and abdominal muscular strength.
- Swinging Rope –This station was designed to develop muscular strength.

- Cross Country Skier – This station was designed to build muscular strength and flexibility on the students' ankle and knee joints and cardiovascular endurance.
- Reverse Push-Ups –This station was designed to develop upper body muscular strength.
- Lateral Jumps - This station was designed to increase coordination and cardiovascular endurance.

As this day began, there were four children missing, which was not too disheartening because I had expected it. All four had informed me the previous week that they would be on vacation during Week Four. My hope was they would still find time to continue to work out wherever they were. We had had such progress the previous week that I was confident it would continue.

More so than usual the children seemed exhausted after the stations, although perhaps they had worked a little harder than usual because of my promise of two fun games to follow. Afterwards, we played two new games for the students.

Both games were ones that I had discovered that to my knowledge had never been played at our school so the students were excited to play them. The first game was called "Building Blocks" (see Appendix D). This was a game that was designed to help develop teamwork and cognitive thinking skills. At first, I could sense the children liked this game. However, as I was monitoring the activity I could sense the students were becoming bored, and so after two rounds I decided they were ready for the next activity.

The last game they played was called "Nuclear Reaction" (see Appendix D). This was a modification of a game that I had discovered early in my career. The students did not like when I selected teams for them so this game allowed the children to choose their

own teams. This was a fun game but did not require the children to work as hard as I would have liked so I decided we would not play this game again.

Day 14: Tuesday, June 29. Fourteen of the 20 students were present. This day started with a parent emailing me stating that her son Kenneth wanted to quit the program due to negative interaction he was having with two other participants. According to the email, the three were not getting along and argued on a daily basis. I did not feel this was the case. They were all competitive and wanted to win every game they played. The issue was that the student who wanted to quit had an older sibling at home. This student wanted to be with his older sister. After much dialogue with the parent, armed with test scores showing that the program was working for her son, we decided that the student would continue with the program.

At the start of the session I had the students warm up and stretch. Following the stretching they completed the stations. During this time, as I was observing the students, I noticed that some students were not giving their best effort, and so I decided to challenge the children. After allowing them to finish the stations, I told them to look at their score sheet and figure out three stations where they could have worked harder. I then had the students go to these stations and repeat them. Surprisingly, the students were scattered around at different stations and not all at one station.

This tactic seemed to work, and I felt they tried to better their score. I was happy with the result but curious as to why they were not working hard during the stations. I wondered if they were starting to get burned out of the fitness camp. I did think that in the future, if I followed up this process the next year, I would try to offer the program three days a week (Monday, Wednesday, and Friday) rather than four. This would give

the children's bodies more time to recuperate. Also, this would make them feel the program was not taking their whole summer away from them. Maybe they would not be as lethargic as they appeared on some mornings.

Following our station work the children played a new game called "Great Escape" (see Appendix D). This was a fun game that involved a lot of movement. The children loved this game and were very motivated to win. This game provided an excellent cardiovascular workout, evidenced by the fact that the students were full of sweat by the end of the game. The students loved this game so much that we played it for 40 minutes. The next game was a cardiovascular activity that the children had played earlier in the camp called "Rudolph's Treasure" (Charpenel, 2001) (see Appendix D). By the time this game had ended the students were tired and ready to stop.

Day 15: Wednesday, June 30. On this day, 14 out of 20 students were present. Today was a light day attendance-wise, with six absences. However, as the children entered they seemed motivated and came in with great attitudes. This was evident by the smiles on their faces and the fact that they were playing at the stations. Even the students who had started having issues with each other in Week Three seemed motivated to do well. In order to break up the monotony of the daily routine, I decided to allow the students to pick what station they wanted to go to and when they wanted to do that station. The only two restrictions were that if there were three people at the station, they had to pick a different station, and they had to go to every station. Therefore, instead of rotating around the stations in a prescribed fashion, the students were able to move, after two minutes, to whatever station was not occupied. It was interesting to watch the students move and their decision process. One student did all of the upper body exercises

first and then everything else, while another student did all of the cardiovascular exercises first and then everything else. Some students worked on their own while others worked with a partner the whole time. Before we started, I discussed with the students the importance of giving their best effort and working very hard to improve their score from the previous day.

The stations seemed to go well, and the students put forth a good effort. Interestingly enough, at the conclusion of the day, I had checked to see if the students had recorded their scores for each station, thus proving they had visited each station once. Every student had a score for each station. They seemed to enjoy rotating around to the stations. As I was observing I found myself focusing on students using the climbing apparatus, the cargo net, and the swinging rope. I was impressed with how high many of the students went. Some went higher than they had ever been before, one even reaching the top for the first time ever! Great news!

Following station work the participants played "Rudolph's Treasure" with the two children who had retrieved the most treasure the previous day invited to be the taggers today. Since the taggers were two older students who had collected the most treasure the previous day, in order to compensate to make the game easier for the younger children, I had to change the rules. Normally there was not a "safe" zone, but, I declared that the middle section of the gym and the red end where the treasure was scattered were both safe areas where the players could not be tagged.

As I observed the game I noticed the taggers were only focusing on certain people and only tagging them. They did not attempt to tag all of the players. I thought they might have been focusing on students who they deemed a challenge. Some of the younger

students were able to go back and forth without getting chased while the older students were complaining the whole time that the taggers were only chasing them. I encouraged the children to keep moving and try to sneak around the taggers while another student distracted the taggers. I did not know if this worked but at least the complaining stopped.

The students seemed to enjoy this game, in spite of the complaints concerning the taggers. Many of the students gathered two or three scooters and connected them to make a bigger scooter. I really did not care; I just wanted them to be moving and active. This game lasted for a while as it took some time to clear all of the treasure. Several times during and at the conclusion of the game the students checked their heart rate and the results were good, although one student's heart rate was low several times. Therefore, she had to increase her effort to raise her heart rate.

Following this game the students participated in a similar game called "Rings of Gold" (see Appendix D). This was a running game that incorporated some of the ideas from Rudolph's Treasure. This game was very similar to the PACER Fitness test which required the students to start and stop frequently. At the end of the day, I asked them which game they had liked better and most of the students (11 out of 14) said they preferred the second game, "Rings of Gold." I felt the students enjoyed this game better because they were able to run and go as fast as possible. In addition, they were not restricted by a scooter so the pace was faster.

In spite of missing six students, I felt that the group had had an excellent station session and followed that up with a great effort in the cardiovascular activities. In my mind this had been a great day! Again my thoughts turned to changes I might note for a

succeeding year. I felt there were four changes I would make, one of them previously mentioned:

- I would consider running the camp on Mondays, Wednesdays, and Fridays. This would allow the students' bodies time to recover from the previous day's activities. This came about because of the number of students who were sore during the first two weeks.
- I would consider hosting the camp for three hours a day. The first hour and a half would be for the students in Grades 1, 2, and 3 and the second session would be for fourth, fifth, and sixth graders. This would allow students with similar ages and abilities to be together. In other words, working with first graders through fifth graders was difficult to have activities that were simple enough for each age group to understand yet challenging for all to play.
- I would consider splitting the children up by performance into groups of children who had done well on the fitness testing and those who had not done well. This would allow us to focus more specifically on the core muscle area where children failed. Ironically, this would allow me to do my original program and focus on children who struggled with fitness testing.
- Another thing I wanted to make sure happened in the future would be to send out invitations early. A big issue for me had been the number of students who had missed time due to camps or vacation. I understood this. Because of the issues I had had with Lindenwood University and the IRB, I had been unable to invite participants until two weeks prior to the end of the school year, by which time most families had their summer plans in place. In order to complete the program

with a reasonable number of people, I had to tell the parents that it would be okay to miss up to five days due to vacation or camp. I would have preferred for every child to be present every day, because if I was to make an impact in these children's lives, they needed to be there (Personal Journal, June 30, 2010).

Day 16: Thursday, July 1. Sixteen out of 20 students were present. This was to be the last day for four days as the school was closed for the July 4th holiday. I had planned on the day being challenging for the students. For warm-up, the students participated in a new activity titled "Parachute Push-up." This activity required all of them to place themselves around the multicolored "parachute" with their hands placed on a specific color. For example, imagine a pie cut into different pieces, each piece one of four colors. The children placed their hands into one piece of the pie. Their bodies had to be in the up push-up position. I would then tell them to move three places to the left or two places to the right. With only their feet and hands touching the ground, the children moved themselves to their new spot. The activity lasted for three minutes and provided the students with an excellent upper body workout. Some students performed this activity rather well while others chose not to work so hard.

Following stations, the children were asked to work at one additional station. They were asked to return to the station where they felt they could have given a better effort. Without hesitation, each student seemed to be able to pick one station where they felt their effort was not what it should have been. After the one additional station, they participated in two of the activities they enjoyed the most throughout the summer, "Great Escape" and "No Man's Land" (see Appendix D).

Prior to the beginning of the Summer Fitness Club, I had asked colleagues from my school and from other schools in the district to come observe the program and provide written feedback. This invitation was extended before the program began. However, on this day, I had four visitors observing the activities. I asked three of them to observe particular students while one observer was asked to observe the entire program. Below are some initial thoughts; please see Appendices K, L, M, and N for the full reports.

The first observer, Roberta McWoods, a Reading Specialist from North Glendale, focused on one particular student, Susan, who had been a former student in her reading program. Among the observations she made were the following:

- When she moved to the army man crawl, she seemed to lose her motivation and was not on task.
- After the instructor gave the students a chance to repeat the station in which the students felt they did not perform to their ability, Susan chose to repeat the army man crawl. This time her effort was a little better. (McWoods, Personal Reflection, July 6, 2010)

My previous knowledge of Susan had been that she was a model student who was focused and always did the right thing. I also felt she had worked extremely hard during the Summer Fitness Club. She was a great role example for the younger students as observed by her hard work on a daily basis. Because of this, I was shocked by these two notes. I was not surprised to learn that she returned to the one station where her performance was not up to par yet her performance was “a little better.” She always challenged herself to be the best.

Next, a first grade teacher from North Glendale observed one of her former students. Barb Swalina had recently moved to teach in the first grade after years in the third and fourth grades. She chose to observe a former student Kenneth. Among her thoughts that interested me were as follows:

- Swinging Rope – After the teacher suggested that the students go back to the station where they felt they gave their worst effort, Kenneth chose to repeat the swinging rope which was one of the few stations where he gave a great effort.
- Kenneth lied to another student about how high he climbed the net. He missed his actual height by about 3 feet. Disappointing for a student to lie to another student.
- Kenneth seems to like hanging out with the high school helper. He is Jonathon's shadow. (Swalina, Personal Reflection, July 6, 2010)

The first two comments were indications of some of the behavior that was becoming problematic for me. Although Kenneth had been a good role model early in the program, he became less so as the program continued. He seemed to be fine if he was paired up with the high school helper, but he struggled when he was by himself or with a younger student.

Yet another first grade teacher from North Glendale, Chrissy Denney, observed a former student, David. Among her comments I found of interest were those about David's coordination or lack of coordination.

- David had a hard time staying in place. In order to accomplish the task he had to travel as opposed to staying in place.
- David used his arms well but he had trouble turning, he used his head.

- David started great hopping with both feet together. Did not hop for the last 30 seconds. He just stood and watched. (Denney, Personal Reflection, July 6, 2010)

David seemed to work hard every day; he was usually full of sweat when he left at the end of the day. His coordination, or lack of coordination, had never been an issue with me either during the Summer Fitness Club or during the school year. This left me wondering if his lack of coordination was a way for him to grab the attention of others or was it truly a concern.

These comments were interesting and surprising to me. The ones about Kenneth and David really caught me off guard. I had always thought they were giving a great effort, but as I reviewed the comments from observers, this did not seem to be the case. Prior to this feedback, they both had improved their fitness scores, but I thought they could do better if they improved their effort. It was cause for concern for me as I felt I really had to regain focus and challenge those two students to work harder.

On the other hand, were these results based on the fact that the students were just exhausted from this week? Since the fitness testing battery had not been conducted this week, I felt it was a good week to challenge the children harder than in the past weeks. In order to push the students, the station work during the week had been more difficult than it had been any of the other weeks. Maybe the students were just worn out. This was just another reason to consider having a future camp meet on Monday, Wednesday, and Fridays next summer.

The final observer this day was a fellow Physical Education teacher from the Kirkwood School District in her second year of teaching. Sheenah Coakley observed the

operation of the session. Interesting thoughts from her global comments included the following:

- First hour 10 fitness stations. Students monitored their progress with a score sheet. This is great because they can keep track of their progress throughout the week.
- With the smaller size group, the students seemed very attentive.
- The game started out very slow but as soon as Keith turned the music on the energy level of the children increased. (Coakley, Personal Reflection, July 6, 2010)

As a reminder, this had been the beginning of a four day weekend for the children as the school district was closed on Monday to celebrate Independence Day.

Day 17: Tuesday, July 6. This day, 16 out of 20 students were present. This was the start of next to last week and, because of Independence Day, a short week. Therefore, I only had seven days to make a difference in these students' lives. For me personally, it was beginning to get harder to be motivated and to go in every day. Part of the issue was that I sensed that some of the students were bored and wanted to enjoy their summer away from school. Some of the students had been upset with each other and had done whatever necessary in order to win the game, which was unacceptable to witness. In addition, they were starting to get lackadaisical, and they were refusing to do the things I requested of them properly. For example, when asked to help clean up the stations most of the students were talking with their friends or taking a break. They did not help clean up. Another example was during a game which was not a dodge ball game, some students were throwing balls at each other as opposed to the target. It was very frustrating.

Thinking back to the beginning of the program, I remembered the students as being excited and focused. They had challenged themselves on a daily basis. They were smiling and had appeared to be having a good time. However, recently this had not always been the case. Was it boredom? Or, could it be they were fatigued?

I also believed some of the students were sick of Kenneth and his behavior. This is the same student whose parent emailed about the possibility of pulling him from the program. He had refused to work hard unless he was playing a game that involved winning or losing. I did not understand his behavior unless he was deliberately trying to be removed from the program. He started off as the role model for the younger children. In addition, he had encouraged and challenged his fellow classmates to perform to their best ability. I had been impressed with his daily effort. But recently, he wanted to resist everything that we did unless it was a dodge ball game. I felt he knew that his brother was at home playing, and he wanted to be with him. I was extremely interested to view his fitness test scores from the six-week mark. I would not be shocked if they decreased.

Previously, I had written about the need to find ways for improvement if I were to repeat this program the next summer. I strongly believed that having the students come every other day would benefit the students more than the current design. I felt that when the students were rested and energized they did a great job.

One final thought I had at this stage concerned one student who had already missed five days due to a special camp she had attended. Now she told me that she would be missing all of the following week due to vacation, which meant that she would have missed eight out of 23 days of the camp. How could I use her data? Had I really made a difference for her? She had made minimal progress up to our second round of fitness

testing. The real issue was that I had made it clear, at the beginning of the summer, that if a participant knew they would miss more than five days they should not sign up. In addition to worrying about my research and its validity, I was concerned about this student. Looking at her scores, it was obvious that she had benefited somewhat from participating in the program. Ultimately, the goal was to see improvement in the students' fitness test scores and when she had been present, she had made progress.

I did feel this problem would correct itself next year when students would be invited to participate in the Summer Fitness Club well in advance. I would not have to wait until the last minute to invite participants. Also, since the program would be an established one, the families would commit to not missing more than a few days. I would hope the program's reputation would precede it and be seen as a desirable activity.

With this being the second to last week, one where there would not be a battery of fitness testing, I decided to make this the hardest week of all six. I wanted to challenge the students and push them harder than they had been pushed over the summer. Therefore, only two climbing stations were carried over from the previous week. The rest were new ones designed to work the core muscular areas. The stations were as follows (see Appendix E, also see Appendix F to view which stations were carried over from the previous week):

- Cargo-net - This station helped develop upper body and upper leg muscular strength and endurance.
- Ups, Ins, Outs, & Downs –This station helped develop abdominal muscular strength.
- Knee Push-Ups - This station helped develop muscular strength.

- Reaching Curl-ups – This station helped develop abdominal muscular strength.
- Step-ups - This station helped develop cardiovascular endurance.
- Swinging Rope –This station helped develop muscular strength.
- Balance Disc Push-Ups - This station helped develop muscular strength.
- Supermans - This station helped the students develop abdominal muscular strength.
- Dyna-Bands - This station helped develop muscular strength.
- Shuttle Run - This station helped the children with muscular flexibility and cardiovascular endurance.

One change for this week was to add more rotations at the stations. Once the students finished with one complete circuit of stations, I decided that for each day, they would have to go through half of the stations again. Although the students wanted to be finished with the stations after one rotation, I required them to visit 15 stations per day. I explained to the children that this would challenge them to work longer and harder while developing their muscular strength and endurance activities. They were assigned a partner and a station to begin. After they had completed the rotation one time, they took a minute break, and then they moved on to the next station to start a second rotation. My plan was that the next day students would start at the station following the one where they had stopped, complete the rotation and then do a further full rotation, meaning that they would be going to 15 stations each day. Although I had to persuade some students to work hard, at the end of the stations this day, they seemed exhausted. One particular student who had been there every day and who had worked very hard, did not on this day at all. This girl seemed to be tired. I asked her what was wrong, and she mentioned that

she had had a late night at swimming practice the previous evening that had gone until 10:00 p. m. so she was tired. It was admirable that she was participating in extracurricular activities, but will this affect her performance during the Summer Fitness Club? I would be interested to see how she responded and worked on Day 18.

Following the station work, the children played a running game called "Move and Build" (Lavner, 2009) (see Appendix D). The object of this activity was for the children to keep moving and to increase their heart rate. The game lasted for roughly five to seven minutes. Immediately after the game ended, I asked the students to find their pulse. Every student had a heart rate that was at least 130 beats per minute. The students worked hard during this game and received quite a workout.

As the researcher and the leader of the Summer Fitness Club, it had been important for me to be involved in the daily sessions. During station work I roamed the gymnasium monitoring the work effort and safety of the students. As the students switched to the cardiovascular activity, I reminded them of the rules of the games. Throughout the game I had interactions with the children documenting some comments from them. The importance of interaction with the children cannot be overstated. In addition, as researcher, I was able to gain valuable insight from the children through their conversations.

Following the game, the students stretched. As they were stretching before dismissal, we again discussed the importance of proper nutrition and focused on the foods the children had had on their food lists. I asked if any of them had noticed their eating habits changing since we had begun this fitness club, and I had several children tell me their habits had changed for the better. One of the third grade students declared, "We

used to have dessert every night of the week, now we only do it on Sunday evening" (Personal Journal, July 6, 2010). In addition, a few of them mentioned that their drinking habits had changed for the better as well, because they were drinking more water. Some of the students mentioned that their decision-making had changed, too. They mentioned that they were picking healthier snacks over junk food. I was pleased with the discussion, and I believed the children were improving their eating habits.

Day 18: Wednesday, July 7. On this day, there were 15 out of 20 students present. As I entered the gym on this day I was wondering how the students were going to respond. The previous day they had worked hard, so I hoped we were going to have a repeat of that effort. I had also intended to spend some time focusing on Kenneth and his actions. I was going to focus on his work habits, attitude, and desire to be at the camp. I had notes from an observer who had watched him previously, but it would be interesting to gather my own opinions of what makes Kenneth tick.

After stretching, the children participated in station work. They started at the station where they had finished the previous day. They went around the circuit one and a half times, visiting 15 stations. I took this time to observe Kenneth. As I was telling him to get back on task, I noticed myself telling other students to get engaged and to get back on task. I had a total of 15 students participating, and I noted that I had to mention to no fewer than 13 of them to get back on task or to give a better effort. During the 37 minutes of station work, I had to mention to some students six or seven times to get back on task. I was amazed at how many times I had to tell students to get on task. Since my goal was to focus on one student, I felt guilty by correcting only him. Therefore, I found my attention being guided towards redirecting others who were "off task." In the past, I had

not even paid attention to this, thinking that the students had been on task most of the time. However, because of the issue with Kenneth, I wanted to see if there was an issue with him or others.

Observing Kenneth was interesting. I had to encourage him to get back on task many times during the station work. What was interesting to me was the fact that he put forth enormous effort on activities that involved permanent equipment. He worked very hard and was successful on both the cargo net and the climbing rope. In fact, Kenneth made it all the way to the top of the climbing rope for the first time ever. However, the stations that did not include any equipment, the knee-push-ups and supermans, he did not give any effort. In addition, he worked hard performing the shuttle run, increasing his goal every time he participated. I believe Kenneth was worn down and fatigued. He could work hard when he wanted to, but he was selective when it came to his effort.

This made me look at the stations I had used during the study. After the mistake in the first week of placing core muscle group stations next to each other, I thought the placement of the stations was satisfactory. As the weeks progressed, I had left some of the stations that the students liked while adding some that enabled them to learn new activities they could perform at home. Activities like the reverse push-ups, burpees, and the army man crawl were activities I felt they could perform on their own when our study was complete. These were activities I hoped the students would focus on to keep their fitness level intact or to improve it. Maybe those stations were too difficult for the students. Maybe I was pushing them harder than they ever have been pushed, and they were fatigued. Or, did the activities last too long every day? These were all questions that

would need to be examined in the future. However, I feel all of this would be solved if the students came every other day or three days a week.

Following the station work, the cardiovascular activity the children played was a game called “Steal the Bacon.” There were eight different teams playing in four games. To keep the children from bragging or being disappointed about losing, after five rounds each team switched opponents. One team remained in their spots while their opponents shifted to their left to face new opponents. I had a rule that the younger of the two partners always had to face each other and the older of the partners had to go against each other. This activity took the rest of the time for the day. The time seemed to go very fast because the students were really enjoying the game.

Incidentally, two previously discussed children had performed well this day. Kenneth gave a great effort during this game. He was encouraging his teammate, and he was playing fair and working hard to win every time it was his turn. When Kenneth’s team lost he did not argue or get into long discussions with the other team. He was being a good sport, which I felt was a change of attitude for him. Meanwhile, the student who had had a late night swimming session performed admirably, working well with both of her partners. Although she appeared tired and worn out at the end of the session, she still had given a good effort.

Day 19: Thursday, July 8. On this day, 16 out of 20 students were present. Due to some preplanned vacations, this was the last day for three of my students, and so I had to perform the fitness testing battery with these three students. While the rest of the students worked on the station work under the watchful eyes of Jonathon and Kristen, I had the three students execute the testing battery. I was not excited with the results; in

fact, I was quite disappointed. Most of the results for these three students showed a decrease from Test Two, conducted in Week Three. The scores for one girl were not surprising because she had missed 10 of the 19 days of the study. However, as her mother told me, “Any day that she was able to participate in the Summer Fitness Club had been a benefit for her as this had been the only exercise she had received during the course of the summer” (Personal Journal, July 7, 2010).

One of the boys who had put forth great effort during the study also did not show improvement over his previous scores. However, his scores from this battery of fitness tests as a whole showed improvement over the state and district fitness test battery scores obtained in March, 2010. This led me to believe that the program had been successful for him. The last student Kenneth, who had been causing some difficulty with his behavior, did poorly on his testing. He improved his score on the PACER test and maintained his score on the sit-and-reach test, but his scores on the modified pull-up test and the curl-up test decreased drastically. Afterwards, he had excuses for his disappointing performance. His arms were sore, his back was sore, and his hands were sore; he said he was not sure he really cared whether he did well or not. Since Kenneth had required so much time and effort over the five weeks he had been present, this was a huge disappointment.

Following the station work and testing, the students played a game called “Ga Ga Ball” (see Appendix D). This was a simple game that the students had played before, but they loved it. The game continued for roughly 20 minutes. As we had done on a daily basis and since this was an activity that had provided an excellent workout, I had the students stop every five minutes to monitor their heart rate by checking their pulse.

Following “Ga Ga Ball” the students played “Great Escape” (see Appendix D). One student said to me, “Mr. Price I am so happy we are playing ‘Great Escape’ but why are we playing this game again?” I explained to the student that the game made everyone move. This caused me to think more about repeating activities. As I planned my daily lessons, after the stations which focus on the core muscle areas, my only concern was playing a game that involved total participation. I wanted the students to be moving consistently. If they were standing still, they were not receiving the necessary exercise. Therefore, if I discovered an activity the children liked, I had a tendency to play that game more frequently. Again, the goal was for the students to be moving and to raise their heart rate to an acceptable exercising heart rate. As a reminder, keepkidshealthy (2003) stated that

> After warming up, children should perform fifteen to forty minutes of a regular exercise each day. This can include fast walking, jogging, biking, roller blading, running, swimming, jumping rope or group activities, such as playing soccer, hockey, volleyball, baseball, basketball, or football. (para. 5)

The article added that one should also encourage regular physical activity as part of a child's regular daily routine. This can include the following:

- Walking or riding your bike instead of driving for short distances.
- Taking a walk with a friend or walk the family dog each afternoon.
- Using stairs instead of escalators or elevators, especially if you have to walk out of your way to find the stairs.
- Parking your car at the end of the parking lot and walking to the entrance of the mall or grocery store.

- Chores, such as doing yard work or housework.
- Family exercise: go for routine family walks or bike rides in the neighborhood or local park. (para. 6)

I felt that, in order to accomplish my objective of having children improve their overall health, besides performing some of the mentioned activities, I would need to have the children move as long as possible, and the two games selected this day required much movement. In addition, the younger students would understand these activities, but they would also hold the interest of the older students.

Prior to the start of the program, as I was seeking professionals to observe, a fellow Physical Education teacher from Kirkwood had agreed to come observe my program. Laura Young had chosen to observe this day (see Appendix O). Among her written notes were that she had enjoyed how the children were so independent and completed tasks on their own. She also thought the score sheet was a great way for the children to see evidence of their own improvement. Finally, Mrs. Young thought it was a great idea to have older students paired up with younger students, because she felt this allowed them to be role-models.

Day 20: Monday, July 12. This day began the last week for my study, and there were 13 out of 20 students present. I could not believe that I had already completed five weeks, which reminded me of how difficult it is both to conduct a study and teach at the same time. The time had passed by quickly for me. However, I felt the program had proceeded nicely. My feelings were that this program had helped me grow both personally and professionally – a topic to which I shall return in chapter 6. However, let

me say here that I felt that because of the struggles and tribulations I had had to endure during this study, I would become a better educator for my students.

With this being the week of the second round of fitness testing, I had decided to make the station work easier and to include stations that the children viewed as fun rather than ones that were too demanding. I wanted them to maximize their effort on Wednesday and Thursday when they would participate in their second round of fitness testing. Hopefully, results would be somewhat better than the previous Friday when the scores had decreased for the three students I had had to test early.

The stations were as follows (see Appendix E, also see Appendix F to view which stations were carried over from the previous week):

- Cargo-net - This station helped develop upper body and upper leg muscular strength and endurance.
- Medicine Balls –This station helped develop upper arm and body muscular strength.
- Modified pull-ups - This station helped the students develop upper body muscular strength and endurance.
- Curl-ups - This station helped the students develop abdominal muscular strength and endurance.
- Sit-and-reach - This station helped develop hamstring flexibility.
- Rings - This station helped develop muscular strength.
- Swinging Rope –This station helped develop muscular strength.
- Balance Discs –This station helped develop muscular strength.

- Roller-Racers –This station was not hard for the students and it helped cardiovascular endurance.
- Stilts/Romper Stompers - This station was designed to help with coordination and muscular strength.

Following the station work, which again lasted about 27 minutes, the students played a game of "Hit the Deck" (see Appendix D). This was the only dodge ball game played during the Summer Fitness Club and it worked on students' running, dodging, agility, and throwing skills. As the game was being played, I stood behind one of the mats to make sure I was not hit. In addition, I made sure the children were playing honestly and doing their exercise as they were instructed once they had been hit. The normal version of this game called for the student to be eliminated from the game if they had been hit or had come in contact with a ball. Again, my goal had been for the students to be moving the entire game, hence, that is why they performed exercises once they had been hit.

The students really played this game well. They knew they had to work hard to elevate their heart rate. Frequently the students were told to freeze and asked to find their heartbeat. If their heartbeat was higher than 180 they knew they needed to slow down. If it was less than 120 they knew they had to work harder.

During the game we did not have any arguments. The students seemed to be focused more on playing the game and playing honestly as opposed to wanting to win. Quite possibly this was because this was a game that no one really won. During the school year the rule was that if a player was out they needed to sit on the stage, the last four players left standing being the winners. Having the student perform wall pushups

instead of sitting out helped accomplish the goal of raising their heartbeat because they did not have enough time to rest, they were constantly on the go. In addition, this eliminated the competitive nature that many of the students typically displayed.

Following "Hit the Deck," the students played a game they had previously played called "Bowling Ball Blitz" (see Appendix D). Essentially this was a game where the students had to work on protecting their bowling pin and to practice their throwing skills. If a player had the last pin standing, they were the new thrower the subsequent game. I had chosen this game because the students got excited and worked hard to make sure they lasted as long as possible. Every student was actively involved in the game.

On this day I was fortunate to have another visitor, a third grade classroom teacher, Don Galbraith, come to observe the program. For a full report on his observation see Appendix P. Among his comments I found interesting were the following:

- Students seem to enjoy recording their scores on a score sheet; this is a great way to make the student accountable for their work.
- The students seem to understand the rotation and how to record their score and then move and get started with the next station. The way the CD was cut is a great idea.
- As I roamed around the room and asked students questions, they were able to tell me what their station was helping them accomplish. For example, the cargo net helps develop upper body strength.
- I was impressed with how many students could find their pulse and measure their heart rate. (Galbraith, Personal Reflections, July 13, 1020)

I was encouraged by this feedback. His comments confirmed what I had hoped to instill in the children, that they were beginning to understand fitness concepts and principles. The fact they were able to find their heart rate was great for me. They even understood the concept of increasing their effort or decreasing it based on their heart rate. In addition, they were able to communicate to others the goal of each station.

Day 21: Tuesday, July 13. Fifteen of the 20 students came this third-to-last day and seemed eager to work hard. I thought this because many had entered the gym early and were running all around. The excitement level was great to see. This was the last day of station work before the fitness testing started the next day. I mentioned to the students that I expected them to give their best effort yet. They seemed to take this to heart, because I felt they worked hard and were focused. For the first time in a while, I did not have to tell any student to get on task and do what he or she was supposed to do. I thought the students were excited that the end of the Summer Fitness Club was in sight.

Following the station work that morning, the children played a new game from the website *PE Central* called “Corner Tag” (Williams, 2001) (see Appendix D). I picked this game with the hope of increasing students' heart rates. This was a great game that used both physical ability and mental ability. Teams had to work together to develop strategies for capturing balls and defining their treasure. The game lasted for about 30 minutes. I was not surprised to hear that heart rates had gone up as a result of the students’ hard work. Following this game, we had time for one round of “No Man’s Land” (see Appendix D). I chose this game to reward the students for their hard work. They worked hard today, and I thought it was only right to allow them to play their favorite game. The day ended with a discussion about the importance of the fitness

testing that would take place during the next couple of days. The students seemed somewhat excited, this most likely is from the fact that the Summer Fitness Club was coming to an end, and they would have their summer back.

Day 22: Wednesday, July 14. This day, which had 16 of 20 students present, was to be the first day of the last round of fitness testing. My aspirations for the group had been that they would do well on the test, based on how hard they had worked each day to improve their score on the stations. The students had pushed themselves hard to continue to improve. The children had been focused in the station work and had worked hard in the cardiovascular activities. Their scores on the daily score sheets had continued to improve. Thus, I felt the fitness tests scores were going to show an improvement over the testing three weeks ago.

Up until this point of the study, I had been relatively pleased with the performance of the students and their outcomes from fitness testing. However, I had completely neglected a major source of data collection that I had laid out in chapter 3. My plan had been to have students journal, at least twice a week, their experiences and thoughts of the Summer Fitness Club. Yet, early on, because of soreness, I had to allow much more time towards stretching than I anticipated in the planning phase. Therefore, during the first two weeks and the subsequent weeks, journaling for the students escaped my mind and never reentered. This plan had called for me to allow time at the end of the session for the students to record their comments in their journal. Since the journal writing never materialized, my goal for the final two days had been to gather thoughts of the Summer Fitness Club from the children.

This was by far the worst day of the fitness camp. I thought the children realized the end was near, and they were uncontrollable. Their behavior was like nothing I had seen all summer long. They were not listening to the directions. In fact, they seemed to be doing whatever they wanted to do. During the Summer Fitness Club, the two worst days thus far had been the days where I was proctoring fitness testing. They took advantage of the fact that I had to monitor the testing period and not watch the game. At first, I had no rationale for this. Finally, after reflecting I wondered if the students were conducting themselves in this fashion because they were apprehensive about performing the fitness test and trying to improve their scores or was it because the control patterns were different because I had been preoccupied with the fitness testing.

On this day I wanted to complete the fitness testing battery except for the running test, as I had done the first time in Week Three. The way everything was designed to work was for the students to participate in one of six stations. I was monitoring one station and whenever the students were with me at the fitness testing station they participated in the following battery of tests: sit-and-reach, modified pull-ups, curl-up, and height and weight. Prior to the day, and based on previous testing experience, I had planned to have fewer stations so that my two student volunteers, Jonathon and Kristen, would have more focused activity to maintain and to supervise.

I had also asked the students to pick the stations, believing that if they were performing their favorite stations, problems would be kept to a minimum. The stations they chose were the roller racers, stilts, swinging rope, cargo net, and the rings.

In addition to the students being wild, and for reasons I could not explain, some of the teachers in our building came in to visit with each other. They chatted on the stage

and so were a distraction for the children. I thought they would figure out the chaos they were causing, but their conversation lasted for roughly 15 minutes.

As the students were completing the fitness testing battery, I was pleased with the growth the children had shown. In private, before testing, each student and I looked at his or her previous score for each individual test. I heard many students mention a score they needed to surpass. When they reached their goal, they stopped, instead of trying to increase their score further. For example, one student mentioned that his score for the curl-up test during the Test Three battery was 11. During the test he did well and equaled his previous score. Instead of continuing, once he hit his goal of 12, he stopped. Was this a drawback in showing the preceding score? I felt it was motivation for the students to see their score, but I wanted them to challenge themselves to score as high as possible on the test and surpass their prior score. That said, I was really pleased with their effort at this testing station. However, when I looked at other stations, I saw students doing things other than the station work. For example, I saw children wrestling, dancing, and using the apparatus in an unsuitable way. Twice, I had to stop between testing and remind the students to stay on task. I encouraged them to allow me the ability to continue to test each person individually in private.

When all the students had been through the testing, I asked the group to nominate three games that they would like to play. The students picked three, then conducted a vote and ended up with “Hit the Deck” (see Appendix D) as their first choice. This was a game the students had played earlier in the week. This game was an excellent choice as it required the children to do quite a bit of running, thus, elevating their heart rate.

The children seemed to behave better once they had started playing the game. They were listening and following the directions. I felt this was because they knew I had been watching and that Jonathon and Kristen were no longer leading the activity. I think they knew that even though this was the summer time I would not tolerate misbehavior. This just reiterated my desire to add adult help if I were to repeat the Summer Fitness Club in subsequent summers.

After "Hit the Deck," the children played a couple of rounds of their other favorite game "No Man's Land" (see Appendix D). In order to ensure a longer game, one that required some strategy and plenty of running, I had not allowed Jonathon to play. His role had been to be the referee while I had conducted conversations with children to gather data in lieu of journal writing. The teams had very spirited and competitive games. Both teams had done a great job of strategizing and coming up with ideas and ways to win the game. Although it had been an important session, one where the students performed well on their testing battery, I was glad when it finally ended.

After having conversations with some of the students, I was disappointed that I had not followed up with journal writing for the students. Overall, I agreed with the comments the students provided. Among the points that were mentioned were as follows:

- I think we need another teacher to help run the game while you are doing fitness testing.
- I feel that keeping a food journal has helped me make good choices.
- I really liked working with the older kids. They were fun.
- I am worn out when I get home because of working hard for two hours.
- I think it is cool when we get to play new games.

- I hope we can do this again next summer. (Personal Journal, July 14, 2010)

Day 23: Thursday, July 15. On this day, the final day of the Summer Fitness Club, 16 out of 20 students were present. The goals for the final day were to finish the battery of fitness tests, to review aspects of the program with the children, and to thank both students and their families for participating in the Summer Fitness Club.

As I reflected on the program, I began to wonder if the students were as worn out as I was. I thought all of us were probably more than ready for a break from each other. Again, for further consideration, if I ran the program again, I would consider waiting two weeks following the end of school before starting the Summer Fitness Club. I felt that having a break from the daily routines of the school year would benefit all of the parties involved. The students had been getting up early each day and coming to work out hard for the last six weeks. By now they wanted the freedom of their summer.

On the last day the students were to perform the PACER test. Normally we ran the test outdoors, but since the heat index was to reach 110°, we had to perform the test in the gymnasium. Usually, we were able to test up to 20 people at a time, however, because of a small space, we had to run the test three different times. In order to push the students, I had them test with students who had scored similar scores to theirs the first time around. Therefore, the students who had completed 7 – 19 laps during the first PACER test ran together, followed by the group of students who had run 21 - 34 laps. Finally, the group of students who had completed 40 – 79 laps ran together. As I reviewed the data, it suggests that this strategy did work.

Following the PACER test the children played a running game called “Move and Build” (see Appendix D). Most of the students had worked hard during this game, but for

the first time this summer, three students pulled out of the game with aches and pains. I did allow them to rest. Based on prior knowledge of them, I suspected they were worn out. The last game of the Summer Fitness Club was a game of "Rings of Gold" (see Appendix D).

As the children prepared to leave, I thanked them for participating in the study and told them how much I had appreciated their efforts and their parents' commitment to their fitness. I also gave them two handouts, one with the scores they had attained during the last fitness testing battery and the other a list of the stations performed during the Summer Fitness Club. I challenged them to use the knowledge they had gained during the summer to improve their test score when we tested again in the fall. This includes exercise using ideas from the list supplied to them.

Both parents and students said they would be willing to work hard at home, and, of course I was interested to see if they would continue to improve their scores. That would demonstrate to me that they had made progress and had grown in a healthy way over the summer. In addition, I knew the parents had been asking me all week about the prospects of continuing the following year. They asked if I had thought about doing it next year and if the district would allow me to do so next year. I told them that my initial thought was to offer the program, with changes, the following year. Also, my principal had demonstrated belief in this program by mentioning to me the possibility of doing the same type of program next summer with a stipend. Part of the deliberation would be if more than 19 students would be able to benefit from this program.

I also had an observer on this day, Dr. Thomas Loughrey, the Program Leader

of the Health and Physical Education Program at the University of Missouri. His full report can be seen in Appendix Q. Among his comments that were encouraging were as follows:

- I felt it was an efficient use of activity time to complete the fitness test battery assessments, as well as to maintain an optimum level of privacy and confidentiality.
- For the most part, I was pleased to see the way that students self-managed their activity involvement, as self-managed behavior is a critical factor in the development and maintenance of healthy lifestyle behaviors.
- The discussions between the course instructor and program participants seemed to be very supportive and respectful, with strong reinforcement of effort and positive engagement. (Loughrey, Personal Reflection, July 29, 2010)

Dr. Loughrey's comments were supportive of the program. His view of self-management in physical activity was important. Early in the program I had placed some pressure on the children to be consistent with their score-keeping. The rationale was to have the students understand the importance of monitoring their own physical habits. His comments reassured me that the students did understand the concept.

I work in a generous school community, but I was shocked as my program ended, because I received gifts from the parents and students. This completely surprised me since I should have been the one thanking the students and parents for participating in my study. I would not be completing this dissertation if it had not been for them and their willingness to participate. However, they were generous to me. My thinking was that the

parents, the ones who cared, saw how much work had been involved in this program, and they wanted to thank me.

I also found myself thinking about two of the girls who had been in my study, Angela and Jaclyn. They were both girls who had done well on their fitness testing in the spring. As the summer progressed, they participated less and less. They would always beg to sit out some activity because they were tired or sore. They would argue with me as I told them they had to participate for their well-being. I hated to force them to do something, but that was part of my job. I did not demand a great deal, but I did demand that the students work hard every day. However, following the last round of fitness testing, I looked at their scores, and Jaclyn had improved two of her scores to their highest levels of the four fitness testing batteries while Angela had improved all four of the fitness scores over the scores she had three weeks ago.

Two weeks later, I had the opportunity to converse with both girls. I asked them why they seemed to not want to work hard the last couple of weeks. One mentioned that on a daily basis it became harder to get out of bed early to participate in the study. She mentioned that she was ready to have her summer back. She also mentioned that she had been working hard at swimming practice. She said she was just tired. The other mentioned that she had attended swimming practice every morning before the camp. She said that she was very tired by the time she arrived, and then she had to work out again.

This again led me to thinking about the format of future studies and how I would have to spread the fitness club out over the entire week meeting Monday, Wednesday, and Friday. I also thought we could obtain as many health benefits in 90 minutes as opposed to 120 minutes.

The subsequent chapter will discuss my findings and reflections for the program. Included will be my comments on the successes and struggles of the program. I will talk about the fitness testing results. I will conclude with a discussion on recommendations for future study, including changes which I feel would improve the program the following summer.

Chapter 6: Findings and Reflections

This action research project was designed to implement a Summer Fitness Club with the hope of influencing the students' health and fitness as shown by their state and district fitness test scores. In this chapter I will report on what the student fitness test scores showed, and what I learned about myself and my work as a result of using action research. I will end with recommendations for future study and finally, afterthoughts.

What the Student Fitness Test Scores Showed

In order to understand the following tables, it is important to understand how the testing was conducted. There were a total of four batteries of tests that were administered to the students. The testing batteries were:

- Test One – March, 2010, District Fitness Testing Battery, Whole School.
- Test Two – June, 2010, Fitness Testing Battery, Summer Fitness Club, conducted during the third week of the program.
- Test Three – July, 2010, Fitness Testing Battery, Summer Fitness Club, conducted during the sixth and final week of the program.
- Test Four – September, 2010, District Fitness Testing Battery, Whole School.

As a reminder, the curl-up test measures abdominal muscular strength and endurance, the modified pull-up test measures upper body muscular strength and endurance, the PACER test measures aerobic capacity or cardiovascular endurance and finally, the sit-and-reach test measures lower back and hamstring flexibility.

Discussion of Table 5. The following table shows the change in test scores from the Test One battery to the Test Two battery. Likewise, Table 6 shows the change from the Test Two battery of fitness tests to the Test Three battery. Observing these tables can

conclude that many of the students did indeed make encouraging strides during the first few weeks of the fitness program.

The data indicate some key gains for the students between their Test One battery scores and their score for the Test Two battery during the third week of the Summer Fitness Club. When I analyzed the results I could see that there had been substantial achievements for the group. As can be seen from Table 5, for example:

- 19 of the 20 children had bettered their score on the curl-up test compared to their pre-test score conducted in March, 2010;
- 17 of the 20 children had equaled or bettered their score on the modified pull-ups test compared to their pre-test score conducted in March, 2010;
- 14 of the 20 children had bettered their score on the PACER test compared to their pre-test score conducted in March, 2010; and
- 17 of the 20 children had equaled or bettered their score on the sit-and-reach test compared to their pre-test score conducted in March, 2010.

I thought the sit-and-reach scores were impressive because these scores are difficult to improve in a short amount of time as improving flexibility takes time. In addition, in my experience, as boys grow and mature, they seem to lose some of their flexibility. I was also pleased with the scores the students attained on the remaining three tests of the battery. I felt the children had worked hard and so it was great to see their hard work pay off. After viewing these scores, I felt confident when I reviewed them at the end of the third week of the program that the Summer Fitness Club was making a difference for the participating students.

Table 5

Test One Scores from March, 2010 Compared Test Two Scores from June, 2010

Student #	Curl-Up		Modified Pull-Up		PACER		Sit-and-Reach	
	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
1	10	29	30	35	41	42	12	12
2	32	68	20	21	25	26	13	13
3	4	11	10	13	22	21	11	11
4	9	16	8	10	22	26	9	10
5	50	55	20	21	40	41	12	13
6	52	33	10	11	30	40	11	11
7	8	11	2	2	16	18	11	11
8	45	51	11	14	26	28	11	12
9	0	1	8	11	8	10	11	11
10	79	120	14	15	77	79	14	14
11	15	34	15	10	24	19	13	13
12	13	15	13	15	34	48	12	13
13	24	26	4	6	20	25	5	6
14	1	4	15	16	8	9	14	14
15	29	62	45	46	31	34	13	12
16	25	30	12	15	34	26	12	13
17	21	33	24	26	43	40	14	15
18	3	6	4	6	10	14	13	13
19	0	7	7	8	8	7	12	10
20	0	4	5	5	14	9	11	9

One thing to remember is the Test One battery was conducted in March of 2010, which was roughly three months prior to the Test Two fitness testing battery. It was decided that since the Test One battery helped identify participants for the study, that these scores would be used as the Test One battery. In addition, early in the program routines were not in place that would have allowed for fitness testing during the first week of the Summer Fitness Club.

Since the Test Two testing battery occurred after only three weeks of the program, there could be several items that affected the scores during the Test Two batteries. For example, some of the students were playing soccer and baseball on select evenings each week while others participated in dance class, gymnastics, or swimming. In addition, school did not end until roughly eight weeks following the Test One battery. Therefore, all of the participants did have Physical Education four days per week. All of these could have been factors, besides the Summer Fitness Club, that helped them post improved fitness scores.

Discussion of Table 6. The next table compares fitness test scores from the battery of fitness tests conducted during Week Six of the Summer Fitness Club, the Third Test battery compared to the scores the children had obtained in the Second Test battery during the third week of the program.

Although this was the first summer of any type of program of this nature at North Glendale, as I reflected on the data attained during the Summer Fitness Club, I was pleased with the results. From the data, one can gather that during the summer, the program continued to have an effect. As both Tables 5 and 6 demonstrate, progress was being made continuously during the Summer Fitness Club.

Table 6

Test Two Scores from June, 2010 Compared with Test Three Scores from July, 2010

Student	Curl-Up		Modified Pull-Up		PACER		Sit-and-Reach	
	Test 2	Test 3	Test 2	Test 3	Test 2	Test 3	Test 2	Test 3
1	29	29	35	35	42	42	12	12
2	68	68	21	21	26	26	13	13
3	11	12	13	13	21	29	11	11
4	16	11	10	6	26	30	10	10
5	55	80	21	22	41	42	13	13
6	33	60	11	12	40	31	11	11
7	11	9	2	3	18	19	11	12
8	51	52	14	15	28	30	12	13
9	1	4	11	10	10	11	11	12
10	120	150	15	16	79	62	14	14
11	34	35	10	8	19	27	13	13
12	15	36	15	16	48	51	13	13
13	26	30	6	10	25	28	6	7
14	4	2	16	18	9	12	14	14
15	62	36	46	12	34	38	12	13
16	30	30	15	16	26	40	13	13
17	33	92	26	18	40	50	15	15
18	6	5	6	8	14	16	13	12
19	7	5	8	9	7	8	10	11
20	4	4	5	5	9	9	9	9

This view of progress is supported by the data which shows that from Test Two through Test Three, 15 students improved their score on the PACER test, three equaled their score, and two students' scores declined. Conversely, scores on the entire battery showed similar improvement.

- 14 of the 20 children had equaled or bettered their score from their Test Two score on the curl-up test;
- 16 of the 20 children had equaled or bettered their score from their Test Two score on the modified pull-ups test;
- 18 of the 20 children had equaled or bettered their score from their Test Two score on the PACER test; and
- 19 of the 20 children had equaled or bettered their score from their Test Two score on the sit-and-reach test.

Discussion of Tables 7 and 8. With these kinds of results it appears as if the Summer Fitness Club was accomplishing its goal of improving the fitness test scores of the students in the program. However, one focus of the program was to see if those scores would be sustained through the fitness testing in the fall. As Table 7 and 8 (divided into two charts to show all of the testing data) show, the results of scores from the fitness testing in September, 2010 (Test Four) compared with the scores from Test Three, do not show as much growth. However, since the children were moving and being active as opposed to being sedentary during the summer months, I felt good about those results and the success of the program. Children's scores were increasing as well as their knowledge and understanding of fitness concepts.

Table 7

Complete List of Fitness Test Scores, Part 1(Test One, Test Two, Test Three, and Test Four)

Student #	Curl-Up				Sit-and-Reach				Modified Pull-Ups			
	Test 1	Test 2	Test 3	Test 4	Test 1	Test 2	Test 3	Test 4	Test 1	Test 2	Test 3	Test 4
1	10	29	29	36	12	12	12	12	30	35	35	34
2	32	68	68	41	13	13	13	13	20	21	21	22
3	4	11	12	24	11	11	11	11	10	13	13	22
4	9	16	11	12	9	10	10	10	8	10	6	5
5	50	55	80	38	12	13	13	13	20	21	22	21
6	52	33	60	53	11	11	11	11	10	11	12	11
7	8	11	9	9	11	11	12	11	2	2	3	2
8	45	51	52	29	11	12	13	12	11	14	15	13
9	0	1	4	13	11	11	12	11	8	11	10	10
10	79	120	150	142	14	14	14	14	14	15	16	15
11	15	34	35	28	13	13	13	13	15	10	8	12
12	13	15	36	19	12	13	13	13	13	15	16	14
13	24	26	30	31	5	6	7	6	4	6	10	7
14	1	4	2	3	14	14	14	14	15	16	18	16
15	29	62	36	45	13	12	13	13	45	46	12	23
16	25	30	30	26	12	13	13	13	12	15	16	16
17	21	33	92	50	14	15	15	15	24	26	18	22
18	3	6	5	17	13	13	12	13	4	6	8	7
19	0	7	5	4	12	10	11	11	7	8	9	8
20	0	4	4	18	11	9	9	10	5	5	5	5

All of the hard work had obviously paid dividends with several of the students, and that was gratifying especially when one remembers that this represents the longest period of time when the students did not have their Physical Education class, which is the only guaranteed time of physical activity for all of the students. Some of the highlights comparing the data from Test Four to that from Test Three are that:

- 10 out of 20 students equaled or improved their score on the curl-up test;
- 8 out of 20 students equaled or improved their score on the modified pull-ups test;
- 10 out of 20 students equaled or improved their score on the PACER test;
- 16 out of 20 students equaled or improved their score on the sit-and-reach test; and
- 6 out of 20 students improved their Body Mass Index score.

However, a closer look at Tables 7 and 8 shows that some students were not able to maintain their scores following the end of the Summer Fitness Club and the Test Four fitness testing battery in September, 2010. Table 7 displays the results of the curl-up test, sit-and-reach test, and the modified pull-up test, while Table 8 displays the PACER test as well as the Body Mass Index data. Some reasons why the scores did not hold true to their Test Three scores include:

- The children may not have carried through with the suggested station work that was presented to them during the last day of the study;
- The students were not participating in physical fitness activities like they did during Physical Education class or the Summer Fitness Club;
- The children may have been worn out and lost interest in maintaining their levels of fitness; and

- The parents may not have required their children to continue to work out on their own.

The second bullet does lead credence to the importance of physical fitness that is offered in Physical Education class or other extra-curricular activities. In addition, the scores from all of the testing batteries reveal that student progress had been made during the Summer Fitness Club and in the subsequent months. The implication, I believe, is that any growth made by the students, however small, is benefiting their health. Improvement of any sort is better than the alternative of a sedentary lifestyle during the summer.

Let me add one note concerning the BMI scores. The children first had their height and weight recorded in Test One and again as data was being collected for Tests Two and Three. For most children, it takes time to either add height and weight or to lose height and weight. KidsHealth (Nemours, 2010) suggests that "by 2 years, growth in height usually continues at a fairly steady rate of approximately 2½ inches (6 centimeters) per year until adolescence" (para. 4). That being said, I was indifferent about the BMI scores and percentiles because I did not expect much improvement in such a short amount of time. However, I would have interest in viewing these numbers in March, 2011 to see if the students had been able to use the knowledge they had gained over the summer to maintain their BMI. As only four reduced their BMI, I wondered whether this was as a result of the program, diet, or other summer variables.

Table 8

Complete List of Fitness Test Scores, Part 2 (Test One, Test Two, Test Three, and Test Four)

Student #	PACER				Body Mass Index				Body Mass Index Percentile			
	Test 1	Test 2	Test 3	Test 4	Test 1	Test 2	Test 3	Test 4	Test 1	Test 2	Test 3	Test 4
1	41	42	42	58	17.5	16.5	16.5	16.7	74.4	55.5	55.0	58.3
2	25	26	26	45	15.8	16.1	16.1	16.6	25.1	28.4	27.9	34.6
3	22	21	29	25	16.5	16.3	16.6	16.9	73.0	66.7	72.0	75.7
4	22	26	30	28	28.8	28.1	27.8	27.8	98.8	98.5	98.4	98.3
5	40	41	42	30	19.2	19.9	20.6	20.6	85.9	88.3	91.0	90.6
6	30	40	31	29	20.1	20.5	20.8	21.0	79.2	80.5	81.9	82.6
7	16	18	19	14	12.8	12.9	12.8	13.0	0.40	0.50	0.30	0.50
8	26	28	30	22	17.6	18.0	18.2	18.5	58.7	61.8	64.8	66.6
9	8	10	11	6	16.3	16.6	16.9	17.4	65.8	69.7	74.7	79.8
10	77	79	62	59	17.3	17.3	17.2	17.2	46.9	45.1	41.8	40.9
11	24	19	27	23	16.8	17.3	17.2	17.5	58.5	64.1	61.0	64.5
12	34	48	51	68	15.8	15.5	15.5	15.9	44.4	33.6	33.1	40.4
13	20	25	28	29	17.3	17.3	17.3	17.2	54.3	54.3	53.7	50.3
14	8	9	12	13	13.7	13.7	13.8	14.3	4.50	4.50	6.50	14.5
15	31	34	38	44	19.8	19.5	19.5	19.9	86.8	83.5	83.2	85.2
16	34	26	40	44	16.8	17.0	16.7	16.6	76.9	77.4	72.0	69.9
17	43	40	50	50	18.2	18.9	18.8	19.1	70.2	75.3	73.8	75.1
18	10	14	16	14	19.8	20.0	20.6	20.8	93.7	93.5	94.8	95.0
19	8	7	8	9	25.0	24.8	24.6	25.3	98.4	98.1	98.0	98.2
20	14	9	9	12	16.1	15.7	15.7	16.1	66.5	56.4	56.0	64.4

Discussion of Table 9. Another interesting set of data is displayed in Table 9, which breaks the students' scores into their Test One scores and compares those with their Test Four scores. The Test One data was collected in March, 2010 while the Test Four data had been collected for analysis in September, 2010.

As one reads the table bear in mind that the goal was to have a higher Test Four score versus a higher Test One score. A study of this set of data shows, however, that this was not always the case. However, some important trends did appear:

- 18 out of 20 students equaled or improved their score on the curl-up;
- 16 out of 20 students equaled or improved their score on the modified pull-ups;
- 12 out of 20 students equaled or improved their score on the PACER;
- 18 out of 20 students equaled or improved their score on the sit-and-reach; and
- 7 out of 20 students improved their Body Mass Index score.

Discussion of Table 10. Another source of data is provided by Table 10. Many times during my study, I commented on the children being absent for more than five days, how I thought it would affect my program, and how I did not want that to happen. My thinking was that if they were not present, they would not be working out, thus, they would not benefit from this study. However, there are many other factors that could influence their scores. For example, when children go away to camp, they are most likely more active than they would be staying home and participating in extra-curricular activities such as the Summer Fitness Club.

Table 9

Test One Fitness Test Scores (March, 2010) Compared to Test Four Fitness Test Scores (Sept., 2010)

Student #	Curl-Up		Sit-and-Reach		Mod Pull-Up		PACER		BMI		BMI%	
	Test 1	Test 4	Test 1	Test 4	Test 1	Test 4	Test 1	Test 4	Test 1	Test 4	Test 1	Test 4
1	10	36	12	12	30	34	41	58	17.51	16.77	74.40	58.30
2	32	41	13	13	20	22	25	45	15.82	16.64	25.10	34.60
3	4	24	11	11	10	22	22	25	16.58	16.96	73.00	75.70
4	9	12	9	10	8	5	22	28	28.89	27.83	98.80	98.30
5	50	38	12	13	20	21	40	30	19.29	20.67	85.90	90.60
6	52	53	11	11	10	11	30	29	20.12	21.05	79.20	82.60
7	8	9	11	11	2	2	16	14	12.83	13.02	0.40	0.50
8	45	29	11	12	11	13	26	22	17.62	18.55	58.70	66.60
9	0	13	11	11	8	10	8	6	16.30	17.42	65.80	79.80
10	79	142	14	14	14	15	77	59	17.31	17.29	46.90	40.90
11	15	28	13	13	15	12	24	23	16.88	17.52	58.50	64.50
12	13	19	12	13	13	14	34	68	15.87	15.91	44.40	40.40
13	24	31	5	6	4	7	20	29	17.37	17.28	54.30	50 30
14	1	3	14	14	15	16	8	13	13.70	14.34	4.50	18.10
15	29	45	13	13	45	23	31	44	19.81	19.95	86.80	85.20
16	25	26	12	13	12	16	34	44	16.87	16.64	76.90	69.90
17	21	50	14	15	24	22	43	50	18.29	19.13	70.20	75.10
18	3	17	13	13	4	7	10	14	19.81	20.86	93.70	95.00
19	0	4	12	11	7	8	8	9	25.08	25.34	98.40	98.20
20	0	18	11	10	5	5	14	12	16.14	16.19	66.50	64.40

Although there are other influences which contribute to success in this program, I decided to compare if being gone from the Summer Fitness Club for more than five days had affected the students' scores, thus this table was created. This table reveals the students' improvement from Test One through Test Four in relation to the number of days they missed. Looking at Table 10 for example, student # 13 showed a 7 point increase on the curl-up test, a 3 point improvement on the modified pull-up test, a 9 point improvement on the PACER test, and finally a 1 point increase on the sit-and-reach test. However, if you were to look at the "Number of Days Missed" column, you will notice that student # 13 actually missed seven days of the Summer Fitness Club.

Further examination of this table shows that six students missed six or more days of the Summer Fitness Club. The average number of tests showing improvement for these students was 2.5 tests. Similarly, 14 students missed five or fewer days, these students also showing an improvement on 2.5 tests.

Therefore, one can surmise that it was not necessarily important to be at the camp all of the time. Hopefully, this is a result of the children learning the material, and then following up while they were away. However, it is also understood that although students missed many days they are still maintaining a level of fitness by remaining active. With these numbers it is safe to say that participation alone in the Summer Fitness Club was not the only factor in the growth of students. It may have been from their participation in outside activities.

Table 10

Total Improvement from Test One to Test Four with Days Missed

Student #	Number of Days Missed	Curl-Ups	Modified Pull-Ups	PACER	Sit-and-Reach	# of Improved Scores
1	13	26	4	17	0	3
2	13	9	2	20	0	3
19	8	4	1	1	-1	3
7	7	1	0	-2	0	1
13	7	7	3	9	1	4
20	7	18	0	-2	-1	1
5	5	-12	1	-10	1	2
6	5	1	1	-1	0	2
18	5	14	3	4	0	3
4	4	3	-3	6	1	3
12	4	6	1	34	1	4
15	4	16	-22	13	0	2
3	3	20	12	3	0	3
10	1	63	1	-18	0	2
11	1	13	-3	-1	0	1
14	1	2	1	5	0	3
16	1	1	4	10	1	4
8	0	-16	2	-4	1	2
9	0	13	2	-2	0	2
17	0	29	-2	7	1	3

Discussion of Figure 13. Early in the study, my focus was on the recruitment of children who had failed at least two of the four tests of the state and district fitness testing battery. However, due to issues beyond my control, I had to open the Summer Fitness Club to children who had been successful with the same fitness testing battery. Therefore, Figure 13 offers a comparison between children who had failed two of more of the four items that made up Test One versus those who had passed three or more in the same battery of tests in March.

The children who had failed two or more tests of the Test One battery showed growth on average on three of the four tests by the Test Four battery while the students who had passed three or more of the items in the Test One battery also showed growth. However, the former group showed improvement of over 30% on two of the tests in the battery while the latter group showed improvement over 30% only on one test in the battery. The average score for those who had originally failed two or more tests went from 5.44 per person to 14.56 on the curl-up test. The average score on the sit-and-reach test stayed steady at 10.78 inches. In addition, the average score on the modified pull-up test on Test Four grew to 9.11 after obtaining 7 in the Test Four battery. Additionally, the average first test battery score on the PACER test grew from 14.22 laps to 16.67 on the Fourth test battery.

The children who performed well on Test One had average scores that climbed from 33.73 curl-ups to 46.09. The average scores from the sit-and-reach showed slight improvement from 12.45 inches to 12.91 inches, the average modified pull-up scores decreased to 18.45, down from 19.45. I felt this was due to the fact that 19 pull-ups is very difficult to do. These students started with a very high goal that

was difficult to achieve. They are performing at a high level and improvement, although possible, is demanding. Finally, the average score on the PACER test increased from 36.82 to 42.91.

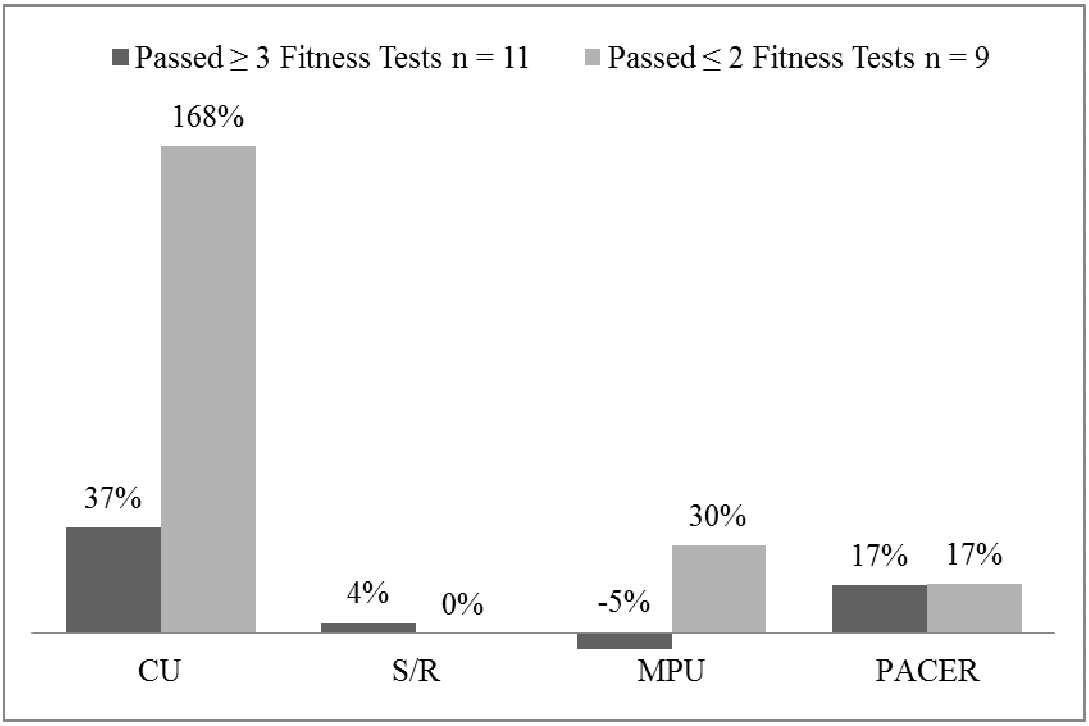

Figure 13. Comparison of percentage of improvement on the Fourth Test battery between students who had originally passed three or more items on Test One battery compared to the students who had passed two or fewer items on the Test One battery.

So, the group of students who had failed two or more of the items for the Test One battery showed growth, while the average score they showed on the tests, although impressive, was lower than the average scores of the other group, which was to be expected. For example, the group who had performed best on Test One had an average score of 46.09 curl-ups on the curl-up test in the Test Four battery while the children who did not perform as well on the Test One battery, although they showed growth, scored 14.56 on the same test. The pattern shown by the curl-up component of the Test Four battery was repeated in the other testing items except the modified

pull-ups for those who did well on the Test One battery and the Sit-and-Reach test for those who had not done well on the Test One battery.

Discussion of Figure 14. Another set of data worth observing involves a comparison of the average scores on Test One and Test Four of males and females (see Figure 14). An earlier discussion revolved around the fact that only seven girls participated in the Summer Fitness Club as opposed to 13 boys. Scrutinizing the data indicates that the female students showed a growth on all four of the tests from the Test One battery to the Test Four battery while the male students showed growth on only three of the four Test Four battery.

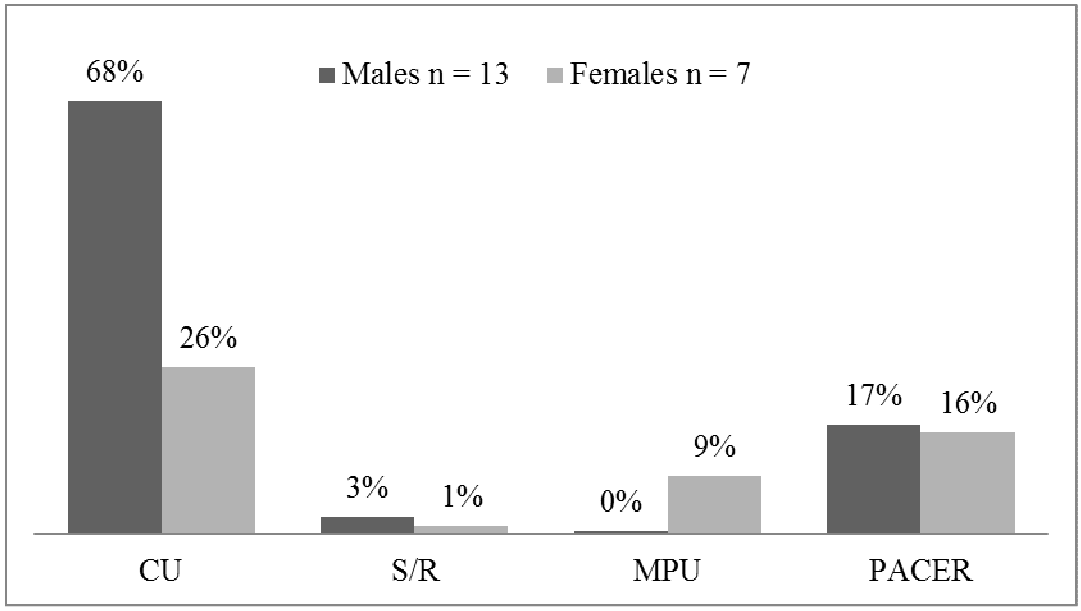

Figure 14. Comparison of percentage of growth for males from Test One scores through Test Four scores compared to growth for females for the same testing periods.

Comparing the results of the males' scores from Test One to Test Four shows some growth. On the curl-up test the average score on Test One was 19.92 curl-ups. During Test Four in September, 2010, the average scores climbed to 33.46. During

the same time frame, the average boys' score on the PACER improved from 28.85 laps to 33.77. The sit-and-reach test showed a minor growth from 11.46 inches to 11.77 inches. Finally, on the modified pull-up test the average boys score increased to 15.38, up from 15.31. This was minor growth but growth none the less.

Looking at the females, all four of their average scores on Test Four showed growth over their Test One score. Their average score on the curl-up test was 33.46, up from 19.92. The growth on the sit-and-reach was very minor. The Test One average score was 11.46 and increased to 11.77 on Test Four. The average score on the modified pull-up test rose from 11.14 to 12.14 from the Test One to Test Four battery. Finally, the females displayed growth on the PACER test. The average Test One score of 22.57 climbed to 26.14. The impressive thing is that although the growth was minor, the females did show progress across the board.

I was not shocked by the sit-and-reach scores and the fact that the groups only showed minor improvement, because it is important to remember that it takes time to increase a person's flexibility. Therefore, any growth is encouraging.

Discussion of Figure 15. Another source of data to compare is that of the fitness test scores of the younger students, those in Grades 1 – 3 against the older students in Grades 4 – 5. Although the comparison is based on the child's current grade level, the norms for the fitness testing batteries are based on the students' age. Figure 15 shows the comparison between these two groups of students. The largest percentage of growth was for the younger students whose average score on the curl-up test improved to 17.91 from the average Test One score of 7.18. In addition to this improvement, the younger students saw a growth on the modified pull-up test. Their

average Test One score rose from an average score of 11 to an average Test Four score of 13.27. The final area of growth for the younger participants was on the PACER test. The children's average scores climbed from an average score of 19.91 to an average Test Four score of 26 laps.

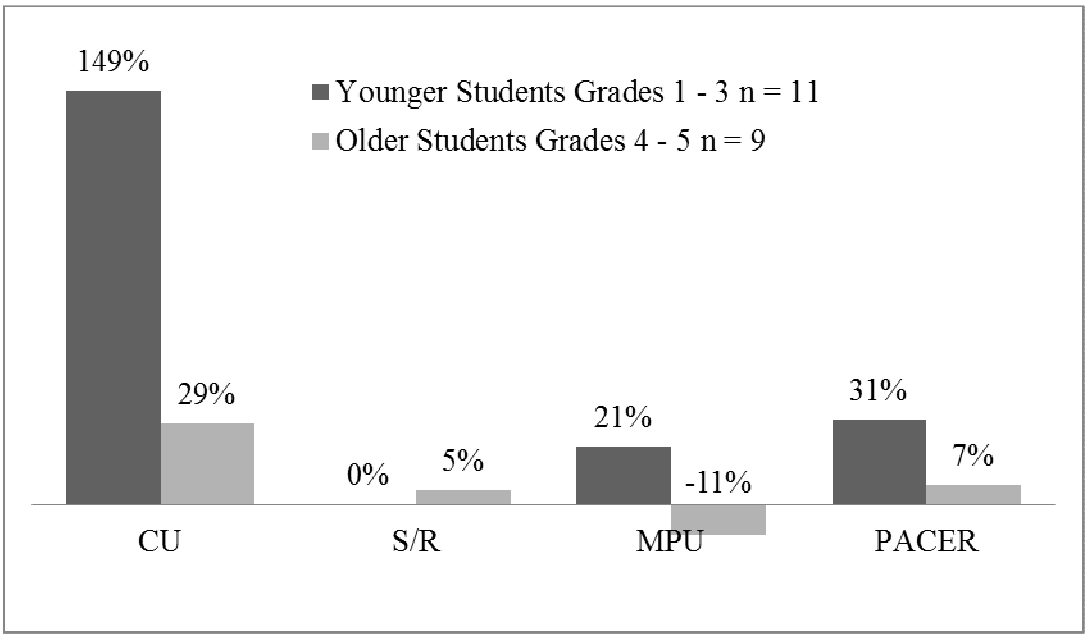

Figure 15. Comparison of percentage of growth between the students in Grades 1 – 3 versus the growth of students in Grades 4 – 5 from Test One to Test Four.

I believe the younger students showed considerable growth on these tests because their beginning test scores were relatively low compared to the older children. The younger students' scores from the Test One fitness testing battery on the curl-up was 7.18 compared with the older children who had an average Test One score of 37.89. Even though the younger students improved to an average score of 17.91, they did not come close to the Test One score of the older students. The same held true for the PACER test. The average Test One score for the younger students was 19.91 while the average Test One score for the older students was 34.89. The

younger students had an average Test Four score of 26 which is still short of the beginning point for the older students who finished with a Test Four average score of 37.33 on the PACER test. In other words, the older students had to perform a higher number on each test than the younger students to show growth.

By way of comparison, the nine older children saw an average increase on three of the items in the Test Four battery, although some of these changes were relatively minor. Their average Test One score was 37.89 and it ascended to 49 on Test Four. The sit-and-reach test saw a minor improvement. While the PACER test saw an average increase from 34.89 on Test One to a score of 37.33 on Test Four. Finally, there was a decline on the average score on the modified pull-up test. Their Test Four score was 15.44, down from the Test One average score of 17.33. All of the average Test One scores would fall into the healthy fitness zone on the state and district fitness testing battery.

Initially, I was concerned about younger students (first - third graders) participating in the Summer Fitness Club at the same time as the older students (fourth - fifth graders). I thought the older students, because of their work habits and experience would outperform the younger students. To my surprise, although their actual scores were not as high as the older students, the younger students did show greater growth. Again, the older students had such high Test One scores that reaching their goal for the Test Four battery required maximum effort. The assumption was the older students would be self-motivated and want to increase their score on their own. However, the truth is they needed motivation and encouragement as much as the

younger children. Since their percentage of growth was not as high as the younger students, motivation may have been an issue.

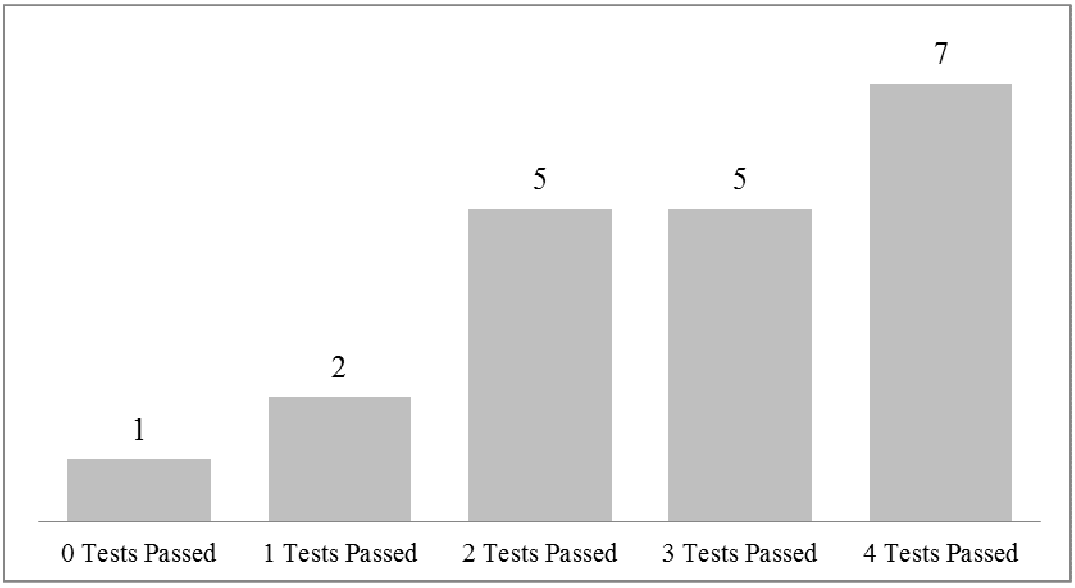

Figure 16. Number of items in the Test Four battery passed by the participants in the Summer Fitness Club.

Additionally, other possible contributing factors to the high percentage of increase for the younger children include participation in extra-curricular activities, the daily attendance in Physical Education class as opposed to three classes per week, and a sense of wanting to please the instructor. The children knew my hope was to see improvement during the course of the Summer Fitness Club. Therefore, the younger students responded well to the encouragement and the motivation provided.

Two more charts are included here to show the number of students who passed all four of the items in the Test Four battery conducted in September, 2010 (Figure 16), and then compares those numbers with the same data from Test One in March, 2010 (Figure 17). So although, as the charts and tables demonstrate, test scores were increasing, there were still relatively few students passing all four items.

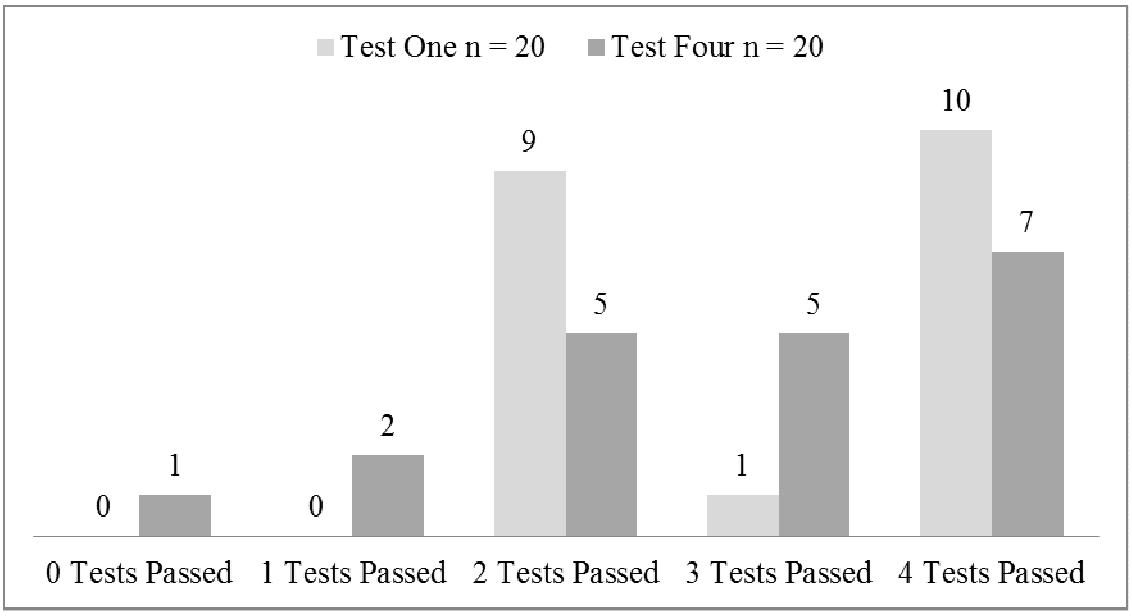

Figure 17. Comparison of number of testing items students passed in the Test One battery versus number of testing items passed in the Test Four battery.

All of this data leads to the question, "Was it worth doing the Summer Fitness Club?" After the students had worked hard for six weeks hopefully at least some of them followed this with work at home for nine weeks, every one of them had improved their fitness test score on at least one test. As a matter of fact, the average number of tests these 20 students improved on was 2.5 tests, compared to the improvement of the rest of the student population (as shown by the school-wide Test Four battery in September, 2010) which was an improvement of 2.1 tests (see Figure 18). Obviously, these scores were commendable. Ultimately, I was able to have 20 students who either were forced by their parents to attend or who had chosen to give up a significant part of their summer in order to improve their health, so yes it was worth running the program.

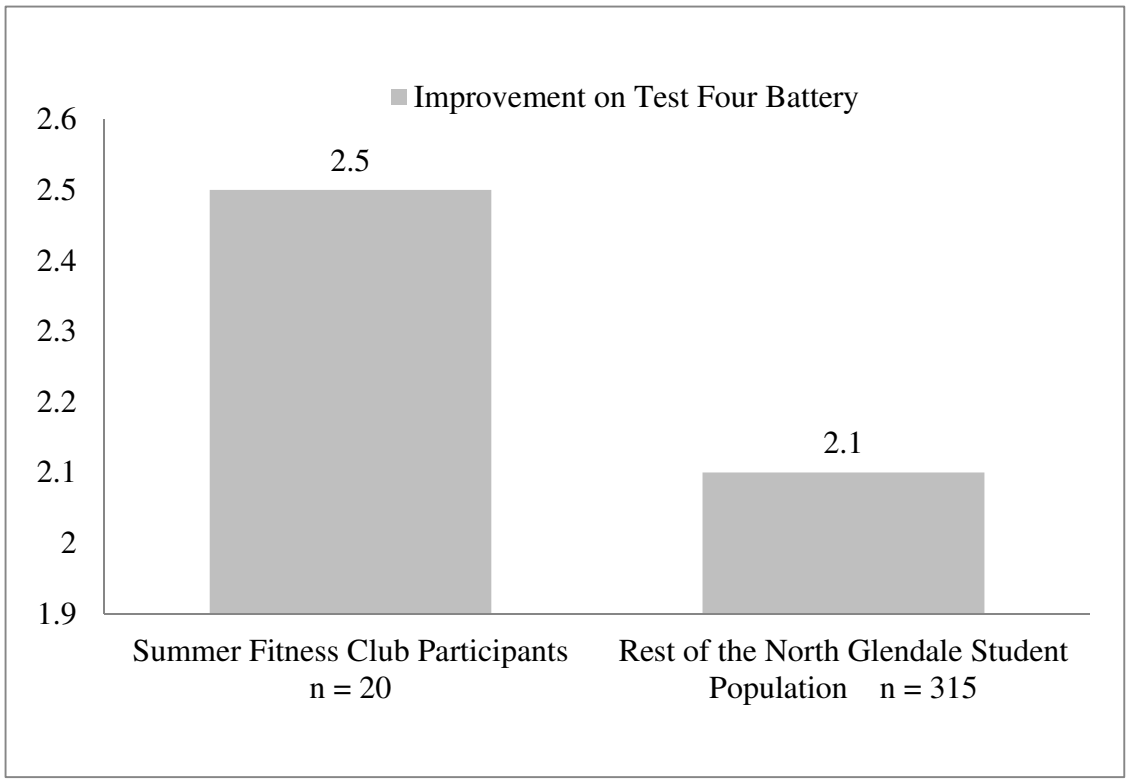

Figure 18. Comparison of improvement on the Test Four fitness testing battery between the participants of the Summer Fitness Club versus the rest of the student population of North Glendale Elementary school.

However, I do feel the results would have been different had I been able to recruit my original testing group. In order to conduct the Summer Fitness Club I had to open the enrollment process to all students. Originally, I had hoped to recruit only students who had failed at least two of the tests in the Test One fitness testing battery. I ended up recruiting all students including those who had done well on the tests of the Test One battery. Additionally, the scores would have been different had I conducted the study with students who did enjoy physical activity.

As I reflect on the overall message of the data discussed above, and on the daily operations of the Summer Fitness Club, I cannot help thinking of the students and the effort they put forth on a daily basis. I felt that the program had started off

slowly because many of the students were exerting much more energy than they normally had applied. They had been required to work out hard for two hours. Other than some soreness, they persevered and worked hard.

I also witnessed many of the children personally challenging themselves to better their fitness scores. Each day the students worked at fitness stations with the goal of improving their scores from the previous day. For the most part, their scores did improve. The goal was to teach the students the importance of goal setting but of attaining those goals. I firmly believe that goal setting had a major impact on the children's ability to improve their fitness scores. The students were motivated to improve their scores. This is a great strategy which I feel will serve them well during the school year. However, it would have been interesting to see how the students would perform without any extra motivation or goal setting. Would they have challenged themselves on the testing as they did during the Summer Fitness Club?

What are the Implications of this for Physical Education and Fitness in Schools and the Nation?

As a physical educator one of my main goals is to improve both the knowledge and fitness levels of my students. However, as the results of the Test One fitness testing battery show, our students are not achieving at a rate we would like to see them succeed. Over 14% of our students had failed at least two of the four tests in the testing battery. Moreover, although we do an excellent job of providing opportunities for students to improve their fitness levels as well as informing them why we are doing what we are doing and how it benefits their body and overall health, we apparently are not doing enough. In addition, for some students during the

summer months these opportunities do not exist. Therefore, when we have an opportunity to work with them over the summer it can be of great benefit for them. The students, for the most part, had an excellent workout for 23 days in the summer. As I heard from at least seven parents, had the students not had this opportunity, some of them would have received minimal amounts of physical fitness throughout the summer. I think this type of summer program has a great deal of potential.

I also feel this program taught me the importance of flexibility and having the ability to adjust as the activity is played. For example, early in the school year as the students performed aerobic-capacity activities I noticed many not working hard enough to enhance their fitness levels. Therefore, the activity was either modified or changed in order to foster participation.

Based on the current rising trends of lack of fitness, obesity, and diabetes among Americans, I feel it is important to provide opportunities for children to work out to enhance a healthy lifestyle. Included in this process is educating the children on different fitness-related concepts. For example, children need to understand working in their target heart rate zone. In addition, it is important to teach the children how to exercise properly in order to benefit their bodies. For example, they need to understand the correct way to execute a proper push-up or sit-up. The great thing about the Summer Fitness Club was that I was able to spend 23 days with the children teaching an understanding of proper principles of fitness.

Although one recommendation for improvement to the Summer Fitness Club is to reduce the number of days the students attend from four back-to-back days to

every other day, the CDC (2010b) offers the following guidelines concerning physical activity and how much children need:

- Aerobic Activity - Aerobic activity should make up most of your child's 60 or more minutes of physical activity each day. This can include either moderate-intensity aerobic activity, such as brisk walking, or vigorous-intensity activity, such as running. Be sure to include vigorous-intensity aerobic activity on at least 3 days per week.
- Muscle Strengthening - Include muscle strengthening activities, such as gymnastics or push-ups, at least 3 days per week as part of your child's 60 or more minutes.
- Bone Strengthening - Include bone strengthening activities, such as jumping rope or running, at least 3 days per week as part of your child's 60 or more minutes. (paras. 1-3)

On days when the students were participating in the Summer Fitness Club they were able to easily eclipse these recommendations on a daily basis. What is more, these children also had the opportunity to learn to understand the difference between moderate-intensity aerobic activity and vigorous-intensity activity, the effects of station work on their core muscles groups, and the importance of increasing their aerobic capacity.

The previous suggestions from the CDC (2010) state how important physical activity is for children. Yet, in the one place we can actually guarantee that every student receives the required amount of physical activity, the school, we are removing physical activity because of funding or in order to “improve standardized test scores.”

Therefore, this program could help to establish a new legitimate goal for school districts, namely to provide year-round opportunities for the children in their care to enhance, maintain, and understand their fitness and health. If school districts are able to offer summer school to fortify academic skills, surely they can do the same to increase fitness levels and the well-being of the students.

Systematic and Critical Look at My Teaching. With this study I attempted to engage in a more systematic and critical look at my curriculum development and teaching than I had in the past and in line with the requirements of action research. As was mentioned in chapter 3, Ferrance (2000) said, "Action research is a process in which participants examine their own educational practice systematically and carefully, using the techniques of research" (p. 1). As I began to explore ways to enhance my teaching skills I was determined to find ways to increase the fitness levels of my students. Implementing a Summer Fitness Club required me to look at my teaching skills and find ways to improve upon those skills. This systematic and critical approach had a number of benefits for my teaching which I will discuss below.

My observation and reflection skills were improved, and my data collection and analysis techniques improved. As my study began, I found a key element to the program was my commitment to journaling every day. After the very first day, while journaling I determined a change was needed to the design of the program. After Day One, the children were exhausted and had struggled to complete the important station segment of the workout. During the actual day, I did not even consider making a change to the order of the day, but as I was reflecting and

journaling that evening I was resolved to making the program better. I had determined that since the station work provided a whole body workout, it was the most important part of the session. Therefore, I wanted to make sure this portion of the workout was performed before the children participated in a game. From this day forward, and because of my journaling, I decided that the children were going to do the station work first followed by the cardiovascular activity. After making this change I committed myself to journaling every day as soon as I had finished with the day's activities. This commitment was great for me and it helped me evaluate the happenings of my study on a daily basis.

Writing a journal has been a great experience for me. At first I found it to be difficult, because I was not used to writing critically about my own teaching. Although the writing assignment was self-imposed, at first I had to force myself to journal, but once a pattern was established, it became much easier and valuable in the success of my program.

Along the same lines, I also discovered the value of having students record their scores to monitor their growth. The children would push themselves daily to improve upon their score from the previous day. When they participated in station work, they made it a goal to improve their score. Thus they were working harder, consequently increasing their level of fitness. Several times their scores were lower than anticipated, so on those days I modified the lesson to ensure a good workout for the students. For example, if the children's scores stayed somewhat stagnant, I made sure to organize an activity the following day that would require the students to work more vigorously during the aerobic capacity or cardiovascular activity. If they were to

take it easy during the station work, I tried to ensure they would receive a good workout with the activity. Using a score sheet was beneficial enough to the program that I will continue this process during the regular school year.

Throughout my teaching career, I have been told to improve my delivery and teaching style. Peer observation is obviously one of the best tools to use, but ironically I had never had anyone, other than a direct supervisor, observe me. However, at the insistence of my dissertation supervisor, I invited colleagues to observe my program and to observe my teaching. This was a great addition to my program, because I was able to learn a great deal form my colleagues. Through conversation and their comments, following their visit, I was able to make adjustments. Even though they observed for two hours, I did not always get very specific feedback about my teaching but I did receive much feedback about students that enabled me to make adjustments for students to make this experience better for them. For example, one observer noted that one student worked better with a high school volunteer than he did with his peers. Therefore, I had this student work directly with the high school helper for a majority of the Summer Fitness Club.

In addition, the comments and reflections I collected from peer observers was instrumental to the success of this program. Colleagues were able to provide feedback that assisted during the program as well as for future studies. For example, Sheenah Coakley reminded me that, “The music gets the students moving that would otherwise just stand there such as Tommy” (Personal Reflection, July 6, 2010). Music was an important part of the station work to keep the children moving from one

station to the other, but I had not fully realized its importance to the game and how it kept the children moving until I read the comment.

Throughout the study, in addition to peer observation, I was able to collect much data. As I was examining one set of testing data, it occurred to me to reflect on another set of data as well. For example, as I was looking at Table 8, analyzing Test One scores to Test Four scores, I was able to see the growth students had made. I decided to look further into the data and summarize the data based on the number of days students were absent from the Summer Fitness Club, their gender, and their age. The results of this collection were interesting to me and helped to understand that progress was made across the board, and that all groupings of children had shown improvement.

Although my data collection and analysis techniques improved I did not do as much as I had originally planned. Because of time constraints, the extra allotment of time devoted to stretching, and the desire to have students being moderately to vigorously active, I failed to follow up with the food logs and student journal, two excellent sources of data collection. I did collect food logs and felt the students did make a positive change in their eating habits. This was evidenced by the fact that as I viewed the food logs the students were making good healthy choices. However, I missed an opportunity to further discuss topics related to nutrition. Also the plan to have students journal slipped my mind during the first week. I had many comments from students that were documented in my journal. These comments were gathered throughout each session. Having private dialogue with the children in the form of journal writing would have only enhanced the study.

My planning and preparation were enhanced. Much thought went into this program with the hope of helping children improve their level of fitness and to increase their knowledge base when it comes to physical fitness. My hope had been that the program would make a difference in the life of at least one of the children; however, after reviewing data, I think it benefited more than one.

A key to the success was through planning of my daily lessons. During the school year, I had to prepare lesson plans for 30-minute long classes. However, for this Summer Fitness Club, it was imperative to be organized and have daily lessons planned for each day because the sessions would last for two hours and include an age-diverse group of students. Because of the time and effort put into this project, I realized how easy it is to plan for a two-hour class. Because of lesson planning, my Summer Fitness Club became easier to run, thus allowing me more time to observe, reflect and collect data as the class proceeded. In addition, I felt better prepared for the students when they arrived each day. I never thought to myself, what is next? I knew exactly what I was doing. So lesson planning led me to planning more, challenging myself to find new ideas, and enjoying every day. For the most part, during each day of the program the students participated in station work followed by cardiovascular activities. Some of the activities were new activities that the students never had engaged in before, while others were repeat activities from the school year. Also, on select days the students were allowed to pick a favorite activity as return for their hard work. However, every day had a lesson plan in place. Sometimes, as a need was warranted, the plan changed.

In chapter 3 I suggested that I thought cardiovascular activities would be the perfect way to start each day followed by station work. Based on my observation and reflections, I was wrong, as I have already stated in the previous section. To reiterate, after Day One I had made the decision to have the students perform the station work first thing in the morning followed by the cardiovascular activity. On the first day, by the time the children had completed the cardiovascular game, they were exhausted and did not give a great effort with the station work. The switch worked as the children developed the habit of pushing themselves as hard as possible in order to improve on their previous day's score.

During the second week, I picked the students' partners for the station work. Sometimes the partners were picked based on their prior performance at stations so they could challenge each other, and other times I felt it was necessary for the older students to serve as role-models for the younger children so they could see examples of the proper way to perform the station work. Interchanging the two different approaches seemed to be a good strategy. Early in the Summer Fitness Club the younger students needed role-models to show proper technique at each station. As the summer progressed the older students needed to be challenged, for these times they worked with a classmate who could challenge them to increase their scores. However, as the older students made minimal increases in the Test Four testing battery, the results do not support this claim of increased scores. In future studies instead of using the older students as role-models for the younger students, strategies should be developed to challenge and motivate older students to improve their fitness levels and scores.

My ability to challenge my taken-for-granted assumptions was enhanced. I had had some assumptions that were challenged during the Summer Fitness Club. I had assumed older students would clearly outperform the younger students, I had assumed kids would behave while I was testing, and I had assumed that stretching would not be an issue.

Another assumption I had entering the study was that the older students would outperform the younger students during the study. However, to my surprise, and as Figure 15 indicates, while the older students may have outscored the younger students, the younger students showed a greater percentage of growth. Part of the reasoning was that the older students as a whole scored high on the Test One battery; therefore, they would have had to score very well in order to show the growth the younger students had shown. While the older students scored well on the Test One battery, the younger students did not. However, the younger students did have to work hard in order to show the type of growth.

One assumption, based on what happens during the school year, that was disappointing was that I expected the children to behave and focus during the administration of the fitness testing battery. To my surprise, the behavior was worse on days when the students were fitness testing. There may be several reasons for this. One thought is that the children were taking advantage of the fact that only one adult was present and that adult had to proctor the test. Therefore, the children did what they thought they could get away with during this time. Another thought was that the children were nervous and responded in a negative light during the game.

The theory that stretching would not be an issue and that we could do the necessary stretches in roughly five minutes was not correct. I was shocked at how sore the children were during the first few weeks. The students had to spend much more time than I had planned on stretching. However, this became necessary as the amount of soreness climbed early in the program. After encouraging children to do so on their own I made the adjustment to provide ample time to allow stretching.

My ability to reflect-in-action and make immediate changes was increased. During the Summer Fitness Club, several times I was able to adjust the plans based on my sense of the needs of the children and the goals of the program. For example, during the first week, I had planned on the students performing the cardiovascular activity followed by the station work. But, what was the best sequence of activities for the day? Should the students do the station work first followed by the cardiovascular activities or would the reverse order make more sense? Based on observation, I could tell the students were tired from the cardiovascular activity and did not give a great effort on the station work. Realizing the importance of the workout provided from stations, I decided to have the students perform station work first followed by the cardiovascular activity.

During the second week I posed another question. Fearing fatigue, I asked whether or not the students should continue doing stations each day or should they do them every other day? I decided for the best interests of the children, it was important to continue with the station work in order to work the core muscle areas of the body. In order to break the monotony of the stations, I decided to change some stations each

week; I would keep some that were fun but I would also keep some that provide a good workout for the students (see Appendix F).

Likewise, each week students were provided score sheets (see Appendix B) which allowed them to record their scores from the station work. This idea was perfect; each day the students had their score sheet as they progressed from station to station. After each station they recorded their scores with the hope of improving that score the following day. I witnessed children pushing themselves every day in order to tell me that they had improved every score from the previous day. It was a great source of motivation for the children, one that has been carried over to the regular school year.

Another issue that appeared as the Summer Fitness Program progressed throughout the summer was that the children seemed to lose some of their enthusiasm. Does the program need to be modified in future summers? Were they worn out or were they ready to get on with their summer? They had to rise early four days a week for six weeks, then they had to go workout. Maybe they were ready for some unstructured time. Personally, I felt having the students attend camp four days in a row was not a great idea. Bodies need time to recuperate and with four days of meeting each week, their bodies did not have that time.

Yet, at the end of three weeks I was skeptical as to why so many of the children had done so well with the second round of fitness testing. Now that the program is complete and I have had a chance to review the data I feel the success that the children had was based on their hard work. These children continuously put forth

a great effort. Thus their level of fitness was able to improve as evidenced by their test scores.

This is where having the children journal would be beneficial. When children do not perform to the best of their ability, or when they appear to be over-excited, having them document their feelings might provide an understanding of ways to improve the program.

Issues Identified for Future Action

Many times during the Summer Fitness Club and the subsequent months of writing many thoughts and ideas raced through my mind about improvements to the program, some of which could be implemented right away while others would have to wait for future programs. However, the key was that children were moving and getting exercise at a time when many of their peers were not.

As I was recruiting participants for the Summer Fitness Club, nine students had to be removed from consideration due to the fact that they were required to attend our school district's ESY program. This program was designed to help students enhance their academic skills. However, as the U.S. Department of Health and Human Services (2010) reported, "Participation in physical activity is associated with academic benefits such as improved concentration, memory, and classroom behavior" (p. 1). Therefore, maybe the answer to improving academic achievement is to include more physical activity as opposed to reducing those minutes per week.

In chapter 3 I talked about differentiation for students if need be. In other words, what could be done differently to help individual students? Conducting this program on my own, not much was offered. However, based on observation and

reflection, I did notice that some differentiation had occurred. For example, I did have some students who had worked better in small groups or one-on-one. Therefore, many times the student assistants worked effectively both individually and in small groups with these students. This led to the student assistants building relationships with some of the students and working with these students to motivate them for success. So, in future studies, more individualization is likely to be effective.

During the administration of the fitness testing battery, I had been surprised by the poor behavior of the students, who were supposed to be engaged in alternative activities while I was administering the tests. The proctoring of the test meant that I had to work one-on-one with the student performing the specific test item. This process took the adult away from the action to work one-on-one with students performing the specific test item. Following my Test Three experience, I put in place a plan for the Test Four period that the students both enjoyed and liked. The goal was to have them participate in a favorite activity so as to keep them motivated and focused. As this was not wholly successful, I realized that I really needed an additional adult to help administer the test or monitor the game while the teacher conducts the testing.

Jonathon, who had no vested interest in my program, was present 90% of the time. This was very impressive to have a high school student who did not want to waste his summer decided to volunteer and assist with the program. Although Jonathon did a commendable job of serving as a volunteer assistant, managing 20 kids was not an issue until the fitness testing. In order to validate the results of my

study I would seek the help of colleague who did not have a vested interest in the success of this program, assist me, particularly on the fitness testing days.

During the second week, the children were still sore so I had to make a change in the plans to allow more time for stretching. In order to allow time for stretching, I had to eliminate some of the time the students spent performing the cardiovascular activity. This proved to be beneficial as the students soon stopped complaining of soreness. In addition to changing the routine of the Summer Fitness Club, the children were strongly encouraged to stretch at their home a couple of times each day. Any future study would require an in-depth look at each component of the program to determine the proper or appropriate allotment of time.

As I look at the logistics of the program there are some other changes I would make in a future implementation of the program:

- Feeling the children were worn out after four days in a row I would offer the program three days a week, Monday, Wednesday, and Friday.
- Since I felt it was somewhat difficult to establish activities that were age appropriate for all children I would offer two different sessions each day. First through third graders would attend from 8:30 a. m. until 10:00 a. m. and the fourth and fifth graders would come from 10:30 a. m. until 12:00 p. m.
- The end of the school year is an exciting time for children. As the end draws nearer the anxiety climbs. Therefore, I would wait to start the program until two weeks following school so that the children would have some time to rest and relax.

- As I had trouble recruiting participants, I would seek permission for participants as soon as the spring fitness testing has been completed.
- In order to have access to different types of physical activities I would consider holding part of the Summer Fitness Club at Kirkwood High School where I would have access to the fitness center.
- In order to help validate the results, for data collection I would consider conducting fitness testing over one day but follow a schedule. So every 10 minutes one student could come in, I could perform all of the testing for that student and then the next one would come in for testing. Therefore, every student would be tested in the same order and under the same condition.
- I would also consider collecting data showing whether a student is participating in extra-curricular activities as Summer Fitness Club is occurring. There is a possibility that participation may affect the scores during fitness testing.
- Another idea for fitness testing would be try to arrange to have a colleague come to conduct the testing. This way I could monitor the activity while an independent person could collect the data for me.
- Because I had placed emphasis on improving test scores the children seemed to be overwhelmed with fitness testing. One option to consider would be to dismiss the children following the fitness testing. In other words, students would only complete fitness testing that day. Following the testing, the students would be dismissed. This would allow for students to come and

participate without being nervous, they could complete the testing, and then relax for the rest of the day.

- In order to provide students with more one-on-one time, I would seek more high school helpers so that students would have good role-models. Perhaps former students or participants would have interest in serving this role in future years.
- Another idea would be to offer the Summer Fitness Club for two groups of different students. First, I would have a group of students who failed at least two of the fitness tests, similar to this study. I would also like to challenge those students who have done well with their fitness testing by establishing high expectations for them to see how high they could go.
- I would also like to be able to establish this program district-wide. Thus, all of the students from our district would have the option of participating in a program to enhance their physical well-being.

The Value of Action Research in Increasing my Personal and Professional Awareness

During the duration of this project I learned many things about myself. First of all, I learned about dedication from the children and their families. These students gave up a large portion of their summer to focus on a enhancing their level of fitness. Many times they were exhausted and yet they still performed for two hours. Although they did not have to attend my study, many of them were present every day. Leaving out the two students who were hardly ever in attendance and making an allowance for prearranged vacation absences, the attendance rate was 93%. Their dedication needs

to be applauded. I assume that children attended to improve their fitness level, but that might not be appropriate. Was the high attendance rate the result of interested students and parents or just an opportunity for free babysitting?

I also learned about patience this summer. I had to have patience from the first day throughout the entire program. I had children who were sore, tired, and irritable. It seemed as if each day brought a different need for patience. I also had to have patience when dealing with student interpersonal conflict. During the school year, I can lose patience with students and then react in a negative way, but during the summer I sensed I had become more flexible because I was remembering that, after all, the entire program was about the children having fun and improving their level of fitness. In addition, I had to have patience when obtaining new activities and then making sure the activity was modified enough for the first grade student yet challenging for the fifth grade students.

One hard thing for me professionally is receiving criticism for the job I am doing. I always strive to give my best effort and to be the best person possible. Thus, receiving criticism means there is a way to enhance my teaching. However, over this summer I have learned that criticism has nothing to do with being the best but learning to be better. Criticism is a major way for any professional to improve his or her craft. There are always ways to do things better than the way they are currently being done. Many teachers came this summer and offered criticism and advice for improving the Summer Fitness Club. Many times the ideas or suggestions were right on target and taught a valuable lesson.

Equally challenging is receiving compliments. This goes back as far as I remember. If things go well, I always want to give the credit to whoever is doing the activity. For example, during the summer when I thought things were running smoothly, I gave the credit to the students for working hard and making the program work. I never viewed it as me doing a great job; I simply felt I was competently providing the opportunity for my students to succeed. However, this summer the parents kept heaping praise on me for this great fitness camp. I wondered whether they were thanking me for doing the program and for providing fitness opportunities because I was providing free day care for them for four days a week. I think by the generosity they showed me, they were thanking me for providing fitness activities for their children.

Journaling, and the reflection it required and spurred, taught me some things about myself both personally and professionally. Personally, writing a journal taught me about commitment, dedication, patience, receiving criticism and compliments. Professionally, journaling taught me the importance of being prepared on a daily basis as well as having extra plans in place.

Ultimately, this study provided the students with opportunities to improve their level of fitness. In addition, the children had the opportunity to learn how to make healthy nutritious choices. Importantly, this program provided me excellent opportunities to enhance my own teaching. As a result, in the future I expect to see myself being more diligent with my lesson planning and more careful as I am observing the students at play. In addition, my teaching partner and I have made an effort to put more emphasis on lifestyle enhancing fitness activities as opposed to

always playing games where there is a winner and loser. I feel that my students are benefiting from a different approach, one where every student has an opportunity to shine. Thus, I have become a much better educator.

Throughout my teaching career I have never considered action research to improve my teaching. Selfishly, during the past 17 years I had thought my teaching partner and I had been very effective in educating the children of our school. However, because of action research I have developed skills required to collect data, analyze the data, and then implement an action plan to bring about change to our school's Physical Education program. As a result, our time with students has resulted in more vigorous physical activity with better management of the time, thus longer periods of active time for our students. Hopefully, the results of future fitness testing batteries will show an improvement.

I also feel colleagues could benefit from challenging themselves to better their own craft by considering action research. If my colleagues across the country would consider and develop action plans which would help them become better educators, then their students would benefit. Year after year, educators could continue to grow professionally by revisiting and refining their action plans. As key players in shaping the future of our youth, it is crucial Physical Educators challenge and push children towards a healthy lifestyle filled with the knowledge and ability to take care of themselves.

Appendix A

Invitation to Participate

North Glendale Elementary School
Effect of Designing and Implementing a Summer Fitness Program on Fitness Test Scores

May 21, 2010

Dear _____ Family,

I am currently in the process of completing my Educational Doctoral degree in School Administration at Lindenwood University. As most of you are aware, this involves completing a dissertation or Capstone project. My project involves the analysis of developing and implementing a summer fitness program to improve fitness levels of elementary students.

I am interested in this study because the trend of childhood obesity increases every year in America. We can do this by increasing the level of fitness in each student and educating them on the importance of good nutrition and a healthy lifestyle. We must work effortlessly and together to ensure this goal.

To acquire participants for this study, I reviewed fitness scores from the recently completed fitness test. As the attached fitness report shows, your child failed at least two tests. Another criterion that does not appear on the report is their Body Mass Index (BMI) percentage. If their BMI is higher than the 85% they are at risk of become obese. I would love the opportunity to educate them this summer by offering a summer fitness program. There is no cost for the program and all that is asked of you is to encourage your child to focus on and work towards a healthy lifestyle.

I will gather data by inspecting student Pre and Post fitness test scores as well as gather data during the six-weeks of the program. Five main areas of personal health will be examined. These five areas are:

- Cardiovascular endurance
- Flexibility
- Muscular strength
- Muscular endurance
- Body Mass Index

In addition, I will look at other forms of data, all examining the design and implementation of the fitness program.

- Parental and Participant Pre and Post Surveys (Forms 1 & 2)
  - Importance of fitness
  - Importance of nutrition

- Feedback from parents during the implementation of the program
- Comments from correspondence with colleagues during the development of the program
- Journal writing
- Feedback from field research
- Comments from correspondence with colleagues during the implementation of the program

The results of all the data gathered will be reflected upon and analyzed by me with suggestions for further implementations. You can rest assured that your child's name will never be used in the final product. Your child's name will be used for the purpose of collecting data and never in the published document.

The fitness club will run for six weeks beginning on June 7, 2010 and concluding on July 17, 2010. We will meet Monday through Thursday from 9:00 am until 11:00am.

I hope you will consider this excellent opportunity for your child! Please notify me with questions, comments or concerns! Please sign and return the following permission form.

Sincerely,

Keith Price
(314)213-6100 Ext. 3471
keith. price@kirkwoodschools. org

We the parents of _____, give permission for our

child to participate in the Summer Fitness Program offered this summer at North

Glendale. We look forward to helping our child understand the importance of a

healthy lifestyle.

_____ _____
Signature Date

Please list any concerns that you may have so that I am aware of issues before they arise.

_____

_____

Please return by May 28th, 2010

Appendix B

Sample Score Sheets

Summer Fitness Club

Name_____ **Week #: 1**

#	Station	Monday	Tuesday	Wednesday	Thursday
1	Curl-Ups				
2	Wall Sit				
3	Superman				
4	Hamstring Stretch				
5	Dyna-Bands				
6	Over and Unders				
7	Knee Push-ups				
8	Modified Pull-Ups				
9	Knee Jumps				
10	Leg Lifts				

Summer Fitness Club

Name_____ **Week #: 2**

#	Station	Monday	Tuesday	Wednesday	Thursday
1	Cargo Net				
2	Leg Lifts				
3	Modified Pull-ups				
4	Sit and Reach				
5	Step Up				
6	Swinging Rope				
7	Curl-Ups				
8	Balance Disc				
9	Balance Disc Push-Ups				
10	Shuttle Run				

Appendix C

Daily Food Chart

Daily Food List

Write down the food you eat for each day of the week.

Day	Breakfast	Lunch	Dinner	Snack	Water
Mon					
Tues					
Wed					
Thrs					
Fri					
Sat					
Sun					

Try and aim for at least three fruits, three vegetables and three glasses of water a day. Also aim for only one high fat snack a day.

Appendix D

Cardiovascular Activities

Bowling Ball Blitz All of the students stood on the perimeter of the play area with a hollow plastic bowling pin. Their job was to protect their pin and make sure it does not fall down. In the middle of the gym there was a large group of balls and one student. On "Go" the person in the middle started to throw balls at the pins and tried to knock them down. Once your pin has been knocked down you go to the middle and become a thrower. The last player with their pin standing wins the game and becomes the next thrower. I picked this game because the students get very excited and work hard to make sure they last as long as possible. Every student was actively involved in the game.

Builders and Bulldozers Half of the class had bowling pins in their hands. They were the builders and their job was to stand any bowling pin that was knocked down back up. The other half was the bulldozers. Their job was to run around the gym and knock any bowling pin that was standing, down. The students could only use their hands to knock down the bowling pins and they had to remain on their feet. At the end of the round, whichever side had the most pins up or down won. So if more bowling pins were down, the Bulldozers won that round (Fowler, 2001).

Building Blocks The groups of children were divided into three different teams. On, "Go", while connected the teammates had to travel from one end of the gym to the other end. They could be holding hands, elbows, shirts or anything else. They just needed to be connected. They had to use a different locomotor skill to travel down and pick up one plastic cup. They then had to travel back to their hula-hoop and drop

the cup. They were to repeat the same process again using a different locomotor skill. For example, if they skipped the first time down and back, they could not skip again. They were to grab as many cups as possible. When there were two minutes left, I told them and they stopped getting cups and started to build a tower. Whoever built the highest tower won the game. This was a game that was designed to help develop teamwork and cognitive thinking skills.

Corner Tag For this game, the gym was divided into four different zones, and the students into four different groups. Each group had a foam ball and two Hula-Hoops. The two Hula-Hoops were placed near the sideline. One served as a storage space for the balls their team retrieved and the other served as a jail for tagged players. On "Go" students had to enter the other team's zone, take a colored ball, and bring them back to their own Hula-Hoop. While they were in another team's zone, if they were tagged, they had to go to that team's jail. When a student was in another team's Hula-Hoop they were considered "safe" and could not be tagged. They could remain in the Hula-Hoop for five seconds and then they had to leave. Also, once a student had captured a ball from another team, they raised it over their head for a free walk back where they could not be tagged. When a teammate came to rescue them, they had to join hands and walk back to their side. They had to go back to their side before attempting to go into another zone (Williams, 2010).

Crocodile Mile Each participant is assigned to a team consisting of one other person. One person is the frog and stands in one of the lily pads (a Hula-Hoop). The frog could only be inside a Hula-Hoop and could only move by stepping on lily pads. The other partner is the firefly. On "Go" the firefly moved hula-hoops in front of the frog

so the frog could move from Hula-Hoop to Hula-Hoop and try to reach the other end of the gym as quick as possible. Once they arrived at the other end of the play area they picked up one piece of equipment (bean bag, tennis ball, fleece ball, etc.) and repeat the process to get back to the end where they started. On their way back to their home spot, a crocodile who was on a scooter could tag the frogs. If the frog is tagged the frog had to turn their treasure over to the crocodile who would put the treasure in a crate in the middle of the playing surface. If they were successful in getting back to their home, they kept their own stack of treasure. At the end of the game, when all of the treasure was gone, whoever has the most treasure, wins.

Dragon's Tail The concept of this game was for half of the students to be the "Guard" of their bowling pin that they placed anywhere they wanted on the gym floor. While the students without a bowling pin ran around the gym and tried to steal someone's pin by picking it up from them without getting tagged. If they tried to grab a pin and were tagged, they had to leave that pin and try to grab a different pin.

Everyone is it This was a tag game where every child is a tagger. When I said "Go" the students ran around the play area and tried to tag others. If a person got tagged, they had to go to the out of bounds area and do 20 jumping jacks. After they do their exercise, they return to the game.

Ga Ga Ball This game involves using 10 soft dodge balls that were placed on the ground. On "Go" the students, using an underhand motion with their closed fist, strike the ball and try to hit someone on their leg below their knee with a ball. If a participant is hit below the knee he or she was to go to one of the walls and complete 15 wall push-ups before returning to the game. If they were hit above the knee, the

person who struck the ball had to go to the wall and complete 15 wall push-ups. They then return to the game. The game continues for roughly 20 minutes.

Go for the Gold The children were placed on one of eight teams who were spread out on the perimeter of the gym. In front of each team was a hula-hoop with one bean bag inside. On "Go" one student left their hula-hoop to go to another hoop to take a bean bag and bring it back to their hula-hoop. They continue this process until one team has collected three bean bags. That team was then given one point. To help with the game, before each round begins two bean bags are placed in the center of the playing area. The students are allowed to take these bean bags. The purpose of this game is for students to sprint for a while and then take a break as their team mate takes his/her turn. They then had to go again. The fitness test that tests for cardiovascular endurance, the PACER, requires the students to start and stop frequently.

Great Escape This was a fun game that involved a lot of movement. Each team had 10 bowling pins scattered around the floor on their side, 10 cones arranged on their end line, and 10 tennis balls with one ball on top of each cone. Ultimately, the goal was to knock down all of the bowling pins and tennis balls. To start the game, the players had to remain on their own side of the gym, on "Go" the students had to throw balls at the bowling pins on the other side of the gym. Once they had knocked down all 10 pins they each got their own scooter. Without crossing a line that was 10 feet away from the cones and tennis balls, they rode their scooter to the other team's side and attempted to throw balls at the tennis balls sitting on top of the cones. Once all of the pins and tennis balls were knocked down, the game ended.

Hit The Deck I had placed four large tumbling mats on their end to resemble a wall in each corner of the gym. The mats had been placed about 10 feet from the wall, allowing enough space for the children to run behind them. I had picked four students who I felt had remained focused during the stations to be the throwers. Inside the gym there were two large circles painted on the ground. One had a diameter of 15 feet and the other 30 feet. If a student who had been picked to be a thrower was going into fourth, fifth, or sixth grade, they had to remain in the smaller, black circle. If they were younger they were allowed to stay inside the larger, blue circle, thus being closer to the kids making hitting them easier. Everyone else started behind a mat. The students were told they were going to run in either a counter clock wise or clockwise direction and they were told to "Go". The students ran in that direction and ran from mat to mat. Once at a mat, the students could only stay there for five seconds. As the students were running, the throwers had tried to throw balls to hit other students, if they came into contact with a ball, either thrown or stopped, they were out and had to go against a gymnasium wall and do 15 wall push-ups. The only exception was if the thrower was standing out of the circle when he or she threw the ball. If for any other reason a student touched the ball or a ball touched them, he or she was out. After a certain amount of time, the game stopped and new throwers, usually the last four standing, were picked. This game worked on students' running, dodging, agility, and throwing skills.

Mickey Mouse The children sat on the circle and they received a number. When their number was called they had to stand up and do whatever locomotor skill was called. They had to go completely around the circle and come back to the spot they

started from. From there they would enter the circle and pick up one of the many animals inside the circle. The goal was for each group to finish the task in a certain amount of time. For numbering purposes, all of the first graders were “1’s”, all of the second graders were “2’s” and so on. For example, I called number 4 and all of the fourth graders had to stand up and run around the circle two times. They ran as fast as they could around the circle. They passed their home and went around the second time. Once they arrived back at their starting point, they ran into the circle and picked up one of the animals. The whole group had to complete this process in less than 25 seconds. The children enjoyed the game and worked very hard. We covered many locomotor skils including hopping, skipping, jumping, walking, and running. Some students, those out of shape, struggled to make the time limit. I did not modify the time limit as I wanted to make sure the students were still challenged. To ensure success for all, I just waited five seconds or so before I started the stopwatch. Every child felt successful by the end of the activity.

Move and Build The object of this activity was for the children to keep moving and to increase their heart rate. Each student had a hula-hoop that they needed to place on the perimeter of the basketball court touching the boundary line. When the music started, the students jogged around the basketball court. Every time they had gone one lap, they entered the center circle through an entrance made by two cones, and grabbed a stacking cup or another piece of treasure. They then left through the exit, made by two cones, and continued going around the circle back to their home hula-hoop. They were to drop their treasure and repeat the process. At the end of the game,

whichever person had the most treasures in his/her circle, won. The game lasts for roughly five to seven minutes (Lavner, 2009).

Musical Chairs with Hula-Hoops The students had to move about the gym and when the music stopped they had to get a foot into one of the hoops. After each round, I removed one hoop. We started with eight hula-hoops and eventually removed seven of them so all of the students were standing in one hoop. This game required the students to move around the gym but also worked on developing collaboration among the participants. It was cool watching the older students encourage the younger students to come and join them in their hoop.

No Man's Land The object of the game was to successfully get all of the players from your team to the other side of the gym without being tagged. This was a strategic game that had an offense and a defense. When I said, "Go" the teams worked to run to the other end line of the gym. Some players tried to run straight to the other side while some stayed back to tag the players from the other team who came on to their side. If tagged, the player had to grab the hand of a teammate who had successfully made it to the other side and return their side and to try again. The first team to have all of their players make to the other end line won the game.

Nuclear Reaction On one side of the gym there was one hula-hoop for each child. The teacher just needed to make sure there were an equal number of each color. All of the students remained on the other side of the gym. On "Go" the students had to throw or roll a ball with the hope of landing the ball in a hula-hoop. If they did, they picked up that hula-hoop and that was the team they were on. They continued throwing and rolling the ball while they had the hula-hoop around their waist. If they

landed a ball in a hula-hoop, they picked up the hula-hoop and gave it to someone who did not have a hoop. Once all of the same color hula-hoops had been collected, that color team wins. The game can continue until all of the colors of one hoop are gone.

Rings of Gold This game required them to do the same thing as Rudolph's Treasure but without a scooter, because I wanted to have the students run instead of riding the scooter. This game was very similar to the PACER Fitness test which required the students to start and stop frequently.

Rudolph's Treasure Every child had a scooter to ride from one end of the playing area to the other. They had to avoid taggers who were on purple scooters. On "Go" the students would move on their scooter avoiding the taggers. They would pick up one piece of treasure and return to their starting point or home. If they made it without getting tagged, they kept that piece of treasure. If they got tagged, they were to drop their treasure and return to their starting spot. At the end of the game, when all of the treasure was gone, I would select two pieces of equipment, it might be a red turtle or purple frog. Whoever had these pieces of equipment was the next tagger. During the school year, whoever collects the most treasure was the next tagger. The way we played allowed every child to have an equal chance to be the tagger. The students worked hard and it appeared as if they had fun (Charpenel, 2001).

Scooter Handball The students were divided into two teams. Each team had two cones or goals to shoot at. If they scored a goal they just continued playing the game. Students were on scooters and had to stay in the seated position. When the game began, the students had to pass the ball back and forth using their hands. Once they

arrived close to the cone, they threw the ball at the cone and tried to score a goal for their team. I had many students come to me and say I scored a goal. I was excited for the moment but never mentioned the score. We had many balls involved in the game so goals were being scored all of the time. Eventually, the students learned there was no real way to keep score. However, they worked very hard and were completely exhausted at the end of the game.

Scooter Tag Every student had their own colored scooter and two people had a scooter that was colored purple. These two individuals were the taggers. The students rode their scooter all over the gym and tried to avoid the taggers. If they were tagged they had to go to the sidelines and complete 15 wall push-ups. These are push-ups that are performed against the wall as opposed to on the ground. Once the students completed their push-ups they returned to the game. After five minutes, sensing fatigue with the taggers, I stopped the game and changed taggers. I also told the students that during the second round of the game they had to move around on their scooters while lying down. In addition, the students were told that they could only use their arms to move on the scooter. This helped concentrate the exercise on their upper body. At different points during the game I had students move by using only their feet, using only their hands while they knelt on the scooter, only using their feet to push themselves, and the like. This required different core groups of muscles to work.

Space Invaders Three students stood in their spaceship or hula-hoop with four meteorites or soft foam balls. Everyone else had a number and when their number was called they had to run across the gym without coming in contact with any of the meteorites. If they came in contact they had to sit on the ground and try to do one of

two things to get up. If they caught a ball or tagged another student they were able to stand up and continue running and try to avoid balls. This game had some starting and stopping, very similar to the PACER test and helped encourage cardiovascular endurance. The students loved this game and worked hard.

Star Wars This game involves throwing balls at bowling pins on the other side of the gym. Each team had five bowling pins to stand up anywhere on their half of the gym. On "Go" the players, while remaining in their half of the gym, throw balls and try to knock the other team's pins down. The first team to knock down all five pins on the other side wins the game. The rules are simple: you may only have one person guarding the pin by standing in front of it and blocking any ball that is thrown towards it, and you may not throw the ball at a person on purpose.

Steal the Bacon There were eight different teams playing in four games. In one game, one team was on one side line while the other team was on the opposite sideline with a cone placed in the middle of the teams. On top of the cone was a bean bag. On "Go" one player left his end line and ran towards the middle to the cone. Once at the cone, the player had one of two choices. They could pick up the bean bag and run back to his/her team's end line or could wait for his or her opponent to pick up the bean bag. Once one player picked up the bean bag, he/she had to return to their end line without being tagged by their opponent. If they make it without getting tagged, they get a point for their team. If they get tagged, the other team gets a point.

Appendix E

Description of Work Stations Used in the Summer Fitness Club

Stations That Focus On Muscular Strength

Army Man Crawls - This station is designed to help students develop upper body muscular strength. The student lies on his or her stomach and by using only his or her forearms, dragging his or her legs behind, tries to pull himself or herself forward to the end of the gymnastic mat. Once successful he or she changes direction and repeats the crawl.

Balance Disc Push-Ups - In order to offer this station, you must have a piece of apparatus called a balance disc. This is a piece of rubber that looks like a flattened playground ball. It is used to help with strength training, balance training, and core stability. The disk can be purchased in the fitness section of any department store. The starting position for this station involves the student having his or her body in a push-up position with his or her feet resting on the floor and hands on the disc. When the music starts, while trying to keep his or her body straight, the student does as many push-ups as possible. This station helps develop muscular strength and endurance.

Cargo-net - At North Glendale there is a long cargo net hanging from the ceiling. This net is 16’ high and is comprised of squires that are 1 foot wide by 1 foot high. The child, using his or her upper body strength and his or her leg muscles, climbs each section of the cargo net as high as he or she can go or until he or she reaches the ceiling. The student counts how many rungs he or she is able to climb. This station helps develop muscular strength in the upper body and in the legs.

Curl-ups - The starting position for a student performing curl-ups is lying on his or her back, arms folded across the trunk with hands on opposite shoulders, knees bent, feet together and placed 12 inches from their buttocks. Once the student is in the proper position, as a partner holds his or her feet, he or she rises up and touches his or her elbows to his or her thighs. Next he or she lowers his or her trunk to the starting position. He or she does as many curl-ups as possible in one minute. This activity measures abdominal strength and endurance, which is important in back support and core stability (Topend Sports Network, 2010, para. 2).

Dyna-Bands - Dyna-Bands are large rubber bands that offer the student resistant muscle training. These can be purchased in the fitness section at any department store. The student puts one handle, which is on the end of the Dyna-Band, around his or her foot and holds the other end with his or her hand. When the music starts in a slow motion, the student raises his or her hand by bending his or her arm at the elbow. Then straightening this elbow, he or she lowers his or her hand. The important thing for the student to remember is to go slowly because this is a resistance training exercise. In other words, when the student is raising his or her hands with the Dyna-Band, he or she is working one group of muscles. As he or she returns to the starting position, he or she is using another group of muscles. This station helps develop muscular strength.

Flutter Kicks - This station helps develop abdominal muscular strength. The student lies on his or her back with his or her hands under his or her lower back. The student then alternates the kicking of his legs. The kicking movement should be initiated at the hips so the legs remain straight.

Knee Push-Ups - The starting position for this station involves the student being in a normal push-up position. However, the student must put his or her knees on the ground thus removing some of the body weight. When the music starts the student does as many push-ups as possible. The student has to make sure his or her body stays straight. The student is on his or her knees to make the push-up easier. This station helps develop muscular strength.

Leg –Lifts - At this station the student lies on the ground and when the music starts, while keeping his or her legs straight, raises his or her legs 4 to 6 inches off of the ground. He or she holds this position as long as possible. The student should not rest for more than 10 seconds after which he or she repeats the routine. This station helps develop abdominal muscular strength.

Medicine Balls - At this station the student stands facing a partner. One partner holds a medicine ball in her hands. A medicine ball is an exercise ball that comes in many different weights. For the Summer Fitness Club's purpose the children had to pick either a 4 pound ball or a 5-7 pound ball. When the music starts the goal is for the two students to pass the ball back and forth, in either an overhand or underhand motion, without the ball dropping or hitting the ground. This station helps develop upper arm and body muscular strength.

Modified Pull-Ups - In order to perform the modified pull-up test a special piece of apparatus is needed. This is called a modified pull bar. This bar looks like the old fashioned pull-up bar that hangs from a wall, but this one is low to the ground with the bar roughly 3 feet off of the ground. The student lies on the ground and reaches his or her hands into the air to make sure the bar is positioned correctly, roughly 4 to

5 inches above his or her outreached hands. He or she then grabs the bar with an overhand grip, while keeping his or her body straight with only his or her feet on the ground, pulls his or her chin up over an elastic band that is 3 inches below the pole. The student pulls his or her chin over the elastic band as many times as possible. This station helps the students develop upper body muscular strength and endurance.

Reaching Curl-Ups - For this station each student works with another student. Between them they have one rubber chicken. One person is lying on the ground with his or her knees bent holding the rubber chicken. When the music starts, the person with the chicken does a curl-up and hands the chicken to his or her partner who lies down on his or her back before sitting up and handing the chicken back to his or her partner. This process repeats itself as many times as possible in the two minutes. This station helps develop abdominal muscular strength.

Reverse Push-Ups - In order to perform this exercise, a student needs a chair. The student approaches the chair as if he or she is going to sit in the chair. Instead of sitting in the chair he or she puts his or her bottom on the ground in front of the chair, and then he or she places the palm of his hand on the seat of the chair. The student, using his or her upper body muscular strength, then attempts to raise and lower his or her body. This station helps the students develop upper body muscular strength.

Rings - The gymnastic rings are apparatus that hang from the ceiling. The goal is for the student to grab each of the two rings. With his or her hands in the rings, the student then attempts to pull himself or herself up off of the ground. If able to pull his or her body up enough the student may sit in the rings, hang upside down, or try to do

a flip. The student may not, however, swing on the rings. This station helps develop muscular strength.

Supermans - The starting position is for the student to lie on his or her stomach with his or her arms out in front of his or her head. He or she keeps his or her legs straight with his or her toes pointing away from the body. When the music starts the student, keeping both arms and legs straight, picks up legs (roughly 6 inches) and pretends to be flying through the air. He or she holds the position for as long as possible. The tendency is for students to hold their breath. In order to work the abdominal muscles, the students must breathe while performing this exercise. This station helps the students develop abdominal muscular strength.

Swinging Rope - The rope is hanging from the ceiling 16 feet directly above a series of mats that are piled on the floor for protection. The student starts with his or her hands on the rope and then runs as fast as possible. He or she then jumps on the rope and places his or her feet on a knot at the end of the rope. He or she swings from one side to other. The key is for students to pull with their upper body and with their abdominal muscles. This station helps develop muscular strength.

Ups, Ins, Outs, and Downs - At this station the student lies on the ground and when the music starts, while keeping his or her legs straight, raises his or her legs 4 to 6 inches off of the ground. He or she holds this position for three counts. Next he or she brings the legs in by bringing the knees as close to the chest as possible and holds this position for three counts. He or she then takes the feet straight out in front and holds them in that position for three counts. Finally, the student sets his or her legs down for

a count of three. He or she repeats this routine as many times as possible during the two minutes. This station helps develop abdominal muscular strength.

Wall-sit - The student places his or her body about 2 feet in front of a wall with feet placed shoulder width apart. Next, he or she leans against the wall and slides his or her gluteus down until the knees are at a 90° angle. He or she holds this position for a count of 30 seconds or longer. He or she can rest if need be. This station helps develop hamstring and lower back muscular strength.

Stations That Focus On Cardiovascular Endurance

Burpees/Thrusts - The student starts in a standing position with feet together. He or she squats down and puts his or her hands on the ground in front of him or her with palms to the ground. With his or her hands supporting his or her weight the student extends his or her feet out behind him or her and assumes a push-up position. The student does a push-up. Following the push-up he or she brings the knees to the chest preparing to stand up. The student stands up and reaches over his or her head with his or her hands. He or she does as many of these as he or she can in the two-minute time period. This station helps develop cardiovascular endurance, upper body muscular strength, and abdominal muscular strength.

Cross Country Skier - This station helps the student build muscular strength and flexibility in his or her ankle and knee joints and cardiovascular endurance. The student starts with his or her feet in a straddle position with one in front of the other. When the music starts he or she jumps in the air and switches the position of his or her feet. In addition, he or she raises his or her arm on the opposite side of his or her body. This activity is very similar to a jumping jack, however, the feet are moving

forward and back as opposed to side to side. He or she keeps repeating this process as many times as she can in two minutes.

Lateral Jumps - At this station, the student has to jump using both feet over cones that are laid in a zigzag pattern. The student has to bounce from side to side as many times as he or she can in two minutes. This station helps with coordination and cardiovascular endurance.

Knee-Jumps - At this station, the student jumps as high as he or she can. While he or she is jumping, he or she tries to pull his or her knees as high as he or she can. The student tries to hit his or her chest with his or her knees. This station helps the children with muscular flexibility and cardiovascular endurance.

Overs and Unders - This station requires the student to work with a partner. While kneeling, one student forms a ball or rock by tucking his or her body head to knee, while the other partner climbs over the rock. Then the person who was tucking turns his or her body into a bridge by pushing his or her body up in the air while his or her hands and feet remained in contact with the ground. His or her bottom is extended high into the sky. The partner then goes under the bridge. The students repeat this as many times as possible. This station helps develop cardiovascular endurance.

Roller-Racers - Roller-Racers are scooter-like pieces of equipment that the student rides. He or she sits on the scooter and then wiggles his or her body back and forth. The momentum created from the student's shaking motion propels the Roller Racer into a forward movement. This station is not hard for students but it does provide cardiovascular endurance for them.

Shuttle Run - At this station, the student has to run back and forth between two lines. He or she has to make sure his or her foot touches the line. The student has to touch as many lines as possible in the two-minute time frame. This station helps the children with muscular flexibility and cardiovascular endurance.

Step-Ups - The student has a piece of exercise equipment called a stair climber step. This is a flat piece of plastic that is raised from the floor about 6 inches. When the music starts, the student steps on and off of the step as many times as possible. This station helps develop cardiovascular endurance.

Stilts/Romper Stompers - At this station, the student has the option of using low stilts or Romper Stompers. The stilts that were available for this study were only 6 inches off the ground. The handles are long and come up behind the student's back. The student has to place one foot on one of the stilts and then push his or her body forward with the other foot. Once his or her momentum is moving him or her forward he or she places his or her second foot on the second stilt and immediately starts to walk. He or she has to raise both his or her left arm and left foot together and step forward. Then he or she has to raise both his or her right arm and foot together and step forward. He or she repeats this process to see how many steps he or she can take. The other option uses the same approach but the student has a rope to hold on to that is right in front of his or her. These are easier than stilts, but the goal with both is for the students to keep moving and to have fun. This station helps with coordination and muscular strength.

Stations That Focus On Flexibility

Balance Discs - This station helps the children build muscular strength and flexibility in their ankle and knee joints. The student places one foot on a balance disc which is similar to a deflated playground ball. He or she tries to maintain his or her balance for a certain amount of time. He or she then switches and tries his or her other foot. This station helps develop muscular strength.

Hamstring Stretch - For this station the student sits on the ground with his or her feet directly out in front of him, toes pointing to the sky with his or her legs straight. Once the music starts the student reaches forward and attempts to grab his or her toes with both hands. If he or she cannot touch his or her toes, he or she reaches as far as possible and holds the position for as long as possible. This station helps develop hamstring flexibility.

Sit-and-Reach - This activity involves the student sitting on the floor with his or her legs out straight ahead. Feet (shoes off) are placed with the soles flat against the box, shoulder-width apart. This is a box that is roughly 18 inches tall and has a flat top. The top has pre-determined numbers on it and a sliding metal guide which helps the students know their score. If a student pushes the metal guide past the “9”, that is the equivalent to being able to teach his or her toes. Both knees are held flat against the floor by the tester. With hands on top of each other and palms facing down, he or she reaches forward along the measuring line as far as possible. After two practice reaches, the third reach is held for at least two seconds while the distance is recorded. The student must not use a jerky motion, and his or her fingertips must remain level

and the legs flat. This test measures the flexibility of the lower back and hamstring muscles.

Appendix F

Weekly Progression of Stations

Station	Week One	Week Two	Week Three	Week Four	Week Five	Week Six
1	Curl-Ups	Cargo-Net	Cargo-Net	Cargo-Net	Cargo-Net	Cargo-Net
2	Wall Sit	Leg Lifts	Curl-Ups	Burpee	Ups, Ins, Outs, & Downs	Curl-Ups
3	Superman	Modified Pull-Ups	Modified pull-Ups	Army Man Crawl	Knee Push-Ups	Modified Push-Ups
4	Hamstring Stretch	Sit & Reach	Sit & Reach	Sit & Reach	Curl-Ups	Sit & Reach
5	Dyna Bands	Step-Ups	Balance Disc	Cross Country Skier	Step-Ups	Rings
6	Over and Unders	Swinging Rope	Swinging Rope	Swinging Rope	Swinging Rope	Swinging Rope
7	Knee Push-Ups	Curl-Ups	Step-Ups	Reverse Push-Ups	Balance Disc Push-Ups	Balance Discs
8	Modified Pull-Ups	Balance Disc	Roller Racers	Flutter Kicks	Supermans	Roller Racers
9	Knee Jumps	Balance Disc Push-Ups	Medicine Balls	Medicine Ball	Dyna Bands	Medicine Ball
10	Leg Lifts	Shuttle Run	Stilts/Romper Stomper	Lateral Jumps	Shuttle Run	Stilts/Romper Stomper

Appendix G

Observation of Program - June 16, 2010

Vicki Johnson - Literacy Teacher

- This observation began at 9:00AM and ended at approximately 11:00AM. There were 18 students in attendance. Two high school helpers assisted Mr. Price.
- The instructor very clearly demonstrated what he expected the students to do in the first set of drills.
- Most students needed redirection and focus to properly stretch. The instructor circulated among the students exhibiting a friendly, relaxed attitude as he explained the importance of stretching.
- Once the students were focused, they did an excellent job stretching.
- Fewer students expressed soreness than reported in the first week. Five said that they were also stretching at home.
- Students seemed excited and motivated to self-score and participate in the exercise stations. About half (mostly girls) sang with the lively music. Moved from station to station with relatively little discussion or redirection.
- Climbing the cargo rope seemed to be more difficult for the younger (1-2) grade students. They mostly complained that it hurt their hands. With encouragement, one of the students was able to climb to the very top of the cargo net for the first time all year.
- At the end of the rotation, all students had something to report about improvement from previous days.

- The instructor reemphasized the goals and purposes of some of the stations. He reminded them that this was to help them with core strength and to improve their fitness testing results
- There was a good variety of games that used different muscle groups.
- This observer was impressed with the relaxed, yet firm way the instructor maintained the balance of fun, fitness and discipline in order to receive the best workout and avoid chaos.
- The instructor clearly explained each game and would interact to maintain the pace of the game.
- Great job, Keith!

Appendix H

Observation of Student Billy - June 16, 2010

Vicki Johnson - Literacy Teacher

- This student was provided a personal assistant for most of the activities. This appeared to enhance the focus, participation and enjoyment of the student.
- He did participate in all areas of the camp, some for longer periods of time than others.
- During the rotating stations the assistant not only refocused the student, he demonstrated what the student needed to do at each station.
- This student demonstrated better lower body muscle control. Seemed more focused when he could use his legs. Seemed to tire out when he had to climb the cargo rope and straight rope.
- His assistant had to set the running pace or the student would stop or walk. Once he had run for about a minute, he did seem to have his own pace. He ran with his arms pulled in very tightly.
- Lack of stamina or loss of focus seemed to manifest itself in every station.
- While he was not sure where to set up his bowling pin each round, the student did appear to enjoy the Bowling Ball Blitz. He was put out very quickly and did not knock down anyone else's pin. He mainly walked around and watched others. He threw it only once per round.
- The student frequently smiled and interacted with his assistant.

- He appeared to be more involved in the scooters. He was able to propel himself with some agility. He only tried to move and throw in combination one time.
- This student was the last one to realize that the other students were cleaning up the scooters.
- He only stretched when the assistant prompted him.
- The student did not express displeasure or frustration through facial expressions. He smiled and laughed, mainly with his assistant.
- Having an assistant did not appear to bother the student.

Appendix I

Adjusted Food Chart

Modified Food Chart

Day	**Breakfast**	**Lunch**	**Dinner**	**Snack**
Day 1	**Fruits:**	**Protein:**	**Fats:**	**Exercise**
	Veggies:	**Carbs:**	**Water:**	
Day 2	**Fruits:**	**Protein:**	**Fats:**	**Exercise**
	Veggies:	**Carbs:**	**Water:**	
Day 3	**Fruits:**	**Protein:**	**Fats:**	**Exercise**
	Veggies:	**Carbs:**	**Water:**	

Appendix J

Observation of Program - June 22, 2010

Deb Preuss - Fifth Grade Teacher

- Class begins at 9:00, but had many late arrivals. Instructor (KP) took attendance at 9:08. Gathered students together and explained the rules of the first activity.
- The activity was a variation of tag. If you get tagged you have to do 7 push-ups. Instructor prompted a few of the students to remind them to do push-ups every time they were tagged. Some of the students couldn't do the push-ups- KP helped with their form. One student needed many reminders to stay off of the rope.
- After about 4 minutes, students formed a circle, a student got in the middle and led the other students in stretching exercises. KP giving good form tips throughout the stretching exercises and prompting when necessary.
- KP instructed students on stations. They have been doing this activity for a week or so. KP challenged the students to do better at each station today and not to slack off if they were not being watched. Each student has a clipboard to record previous performances. Students get to choose their stations and work with assigned partners. When students arrived at the first station they began working. KP started giving the curl-ups test to a partner group. The activity stations include climbing up a large net, stair-stepping, throwing a medicine ball, riding on scooters, swinging on a rope, pull-up bar and others. All stations are geared toward building core muscles. After the first sit-up

evaluation, the partner groups switched to the next station. Music was turned on and students started rotating during breaks in the music.

- One partner group was working with the pogo stilts for about 30 seconds then abandoned them. They recorded something on their sheets and moved to the next station. The students move easily between stations and know what to do. Some put forth more effort than others. KP rotates often to encourage hard work.
- KP continues to work with a partner group on pull-ups and toe-touch stretches. A student on the floor to ceiling net makes it to the top for the first time! KP praises her effort and success.
- All students are active every minute—there is very little if any downtime during the station rotations. The complete rotation is finished when all stations are visited—usually around 30 minutes. They record their score from the stations today and then clean up the stations so they can play the next game. Students are given a five minute break before the game begins.
- After working on the core during station time, games are geared for cardio-vascular activity. Today they well play Crocodile Mile. Students are asked to come sit on the blue circle to receive instructions. KP assigned partners. The goal of the game is for the frogs to walk on lily pads (hula hoops) placed by dragonflies (their partners) in a path to reach treasure and bring it back home. There are two crocodiles in the middle of the treasure path that can tag them out if they are off of a lily pad.

- After the first round it was clear that the crocodiles had little chance to tag frogs out, so KP changed the rules. Now the croc can tag you out if you have treasure in your hand, even if you are on a lily pad. This will encourage more speed for the return trip by the frog and dragonfly. After students are more comfortable with the rules, they start placing the lily pads farther apart so frogs are leaping quickly. The rule change has given a sense of urgency and excitement to the game. After five minutes or so, two new people are chosen for the crocodiles. KP discusses strategies for avoiding the crocodiles to help improve for the next round.
- During the second round a student gets hurt jumping from a lily pad. KP suggests that she be a dragonfly instead of the frog for a while. Students started losing interest in the middle of the second round. Shortly after, the game was over and students helped to clean up the equipment.
- Another cardiovascular game is introduced after a drink break. Star Wars is the new game and it uses small balls that will knock down five pins. Each team will have five pins and one guard per pin. Whichever team knocks down five pins first, wins. Students are NOT to hit other players with the ball. Before starting, KP asks students to find their heart rate. After playing for 5 minutes, the students will take their heart rates again. The pins are knocked down pretty quickly. Students reset the pins and begin another round. After the next round is over, the students find their heart rates. KP asked if their heart rates were higher—if they were not, they need to work harder during the game.

Appendix K

Observation of Student Susan - July 1, 2010

Roberta McWoods - Literacy Specialist

- Susan – working on her core with crates, moved to next mat doing ab work alternating legs, rested between reps but appeared focused and on task.
- Moved to medicine balls toss. Susan did chest passes to partner.
- Next were lateral jumps, Susan took a reasonable rest between sets.
- Susan moved to cargo net and was able to climb to the top and down in the two minute time frame.
- Susan moved to the burpee station. This station was a challenge for her. She took quite a few rests here.
- When Susan moved to the army man crawl she seemed to lose her motivation and she was not on task.
- She was not motivated at the sit-and-reach. She did more talking than stretching.
- After the instructor gave the students a chance to repeat the station in which the students felt they did not perform to their ability Susan chose to repeat the army man crawl. This time her effort was a little better

Appendix L

Observation of Student Kenneth - July 1, 2010

Barbara Swalina - First Grade Teacher

- During stretching Kenneth was very relaxed and did not stretch well at all.
- Kenneth has a difficult time sitting and standing still (ADD?) (Medicine?)
- After a helper demonstrated something to him, Kenneth rolls his head back. He was not very enthusiastic with the stretching or the parachute activity.
- Cargo Net – Kenneth began climbing before the music started. He seemed to enjoy this station quite a bit.
- Burpee – Kenneth did not give a good effort, very lazy
- Army Man Crawl – Kenneth was reluctant to get started
- Sit-and-reach – Kenneth mostly sat and talked, did little if any stretching
- Cross Country Skier – Kenneth exercised for ½ the time and stood around for ½ the time
- Reverse Push-Ups – Kenneth did not want to get started. Mr. Price when over and encouraged his to get started. He still did not give a great effort.
- Lateral Hop – Kenneth did about six of these the correct way and then just started to goof off.
- Swinging Rope – After the teacher suggested that the students go back to the station where they felt they gave their worst effort Kenneth chose to repeat the swinging rope which was one of the few stations where he gave a great effort.
- Teacher asked students, “How does this exercise help your body?”

- Teacher asked the students, “What muscle did you feel working?’
- Teacher told Kenneth, “Have faith in yourself!”
- Kenneth lied to another student about how high he climbed the net. He missed his actual height by about 3 feet. Disappointing for a student to lie to another student.
- Kenneth seems to like hanging out with the high school helper. He is Jonathon’s shadow.
- During the first game of “Great Escape” Kenneth did not move at all. He stayed in front of one pin to try and protect it from falling. This did not work and the teacher said during the second game that if you already had been a guard you could not do it again. Good move by the teacher to ensure every kid was actively involved.

Appendix M

Observation of Student David - July 1, 2010

Chrissy Denney - First Grade Teacher

- Warm-up – hands and feet too close together, David was crawling instead of in a push-up position, good crossover center.
- Cargo net – Seems to have more control with his hands than feet, takes breaks with arms and legs, started early and ended late but he made it up and down twice.
- Burpee – David did seven then took a break, did six more then took a break, finally did six more with little breaks. Sometimes he only had one foot involved.
- Army Man Crawl – David used his arms well but he had trouble turning, he used his head.
- Sit-and-reach – With guidance David kept his legs straight.
- Cross Country Skier – David had a hard time staying in place. In order to accomplish the task he had to travel as opposed to staying in place.
- Swinging Rope – David tried to climb the rope. He used good technique by using one had over the other. He had better control with his feet than his hands. He made it less than ½ ways up.
- Reverse Push-Ups – David had his right knee bent and he bent his body more than his arms.
- Flutter Kicks – David only did two of them. Did not seem motivated.

- Medicine Ball – Using the yellow ball, David showed good control. He favored throwing from his left side instead of in the middle of his body.
- Lateral Hop – David started great hopping with both feet together. Did not hop for the last 30 seconds. He just stood and watched.
- Teacher suggested for the students to repeat the station which they think they could have done a better effort. David chose to do the Army Man Crawl. He did a lot better this time around.
- Cardio Games – Great Escape – good step and throw, stayed pretty active, good control on scooter but had to readjust body a couple of times. When he was the pin guard he was slow to react. He started to squat but had a hard time balancing.

Appendix N

Observation of Program - July 1, 2010

Sheenah Coakley - Physical Education Teacher

- First hour 10 fitness stations. Students monitored their progress with a score sheet. This is great because they can keep track of their progress throughout the week.
- Students took a 5 -10 minute break to clean up and prepare for the game and to have water and a healthy snack.
- Second hour students played cardiovascular games and activities.
- With the smaller size of this group, the students seemed very attentive.
- Interesting that there are only two girls in the group out of the 16 that are present.
- The game started off slow but as soon as Keith turned the music on the energy level of the children increased.
- Game one of the Great Escape the students were allowed to be pin guard, but really only two from each team could guard the pin. It is interesting to see how some students always want to stay back for guarding pins while others would hate that job.
- I think giving the student the opportunity to be a pin guard (with restrictions on the number of times a kid can be a guard) is a modification because some people would prefer to be in the background rather than the forefront of the action.

- Billy is very engaged when he has a big responsibility like a pin guard, but is easily distracted when he is otherwise just playing the game.
- The music gets the students moving that would otherwise just stand there such as Tommy.

Appendix O

Observation of Program - July 8, 2010

Laura Young - Physical Education Teacher

- Students know the routine to stop, record, move, and start their next station. They do a great job of following the music. They got into their skill very quickly and for the full two minutes.
- There was excellent communication between teammates and from the student helpers.
- I liked how the students had their own independence to complete their task.
- Working on their own and having their own score sheet makes the students more accountable for their score.
- The score sheet is the concrete evidence for them to see their own improvement.
- All of the children, regardless of their age seem to get along.
- A couple of groups were younger students with an older student – thought this was good because older student challenges the younger one plus older student will work harder to look good for younger student.
- Shuttle run was the only station where there was not a great effort. Most of the younger students ran and moved. Most of the older students moved but with a lazy effort.
- Great idea! Great Program! Way to get students moving and teaching them the importance of movement.

Appendix P

Observation of the Program - July 12, 2010

Don Galbraith - Third Grade Teacher

- The students really did a nice job of stretching. They demonstrated the importance of a good stretch. They held the stretch for a good amount of time. Student leader did a good job of leading the students.
- Stations seemed to be designed to focus on core muscle areas; flexibility, abdominal strength, and upper body strength.
- Students seem to enjoy recording their scores on a score sheet; this is a great way to make the student accountable for their work.
- The students seem to understand the rotation and how to record their score and then move and get started with the next station. The way the CD was cut is a great idea.
- I was impressed with the number of students who were able to climb to the top of the cargo net.
- As I roamed around the room and asked students questions, they were able to tell me what their station was helping them accomplish. For example, the cargo net helps develop upper body strength.
- The student went through each station once and then repeated the first five over again. I am not sure of the purpose. Instructor revealed that this was the last week of fitness testing and he wanted the students to work out as hard as possible on Monday and Tuesday. The students did not seem to focus as hard on the stations the second go around.

- The students love the swinging rope. The all seem to understand that the swinging rope is designed to help with upper body strength.
- The game appeared to be more organized chaos than anything else. This was a game the students never had played. They all understood the directions and played the game well.
- I liked the game of “Bowling Ball Blitz”. This game kept the students moving and helped them raise their heart rate.
- I was impressed with how many students could find their pulse and measure their heart rate.
- The parents arrived for dismal and seemed happy with the program. One of them told me this is great for my child. It gets him up off his bottom and moving.
- Overall, very impressed. The students did a great job!

Appendix Q

Observation of the Program - July 23, 2010

Dr. Thomas Loughrey

University of Missouri at St. Louis
Health and Physical Education Program
Program Leader

- Entering approximately 30 minutes after the session began, I observed all children actively involved in the program.
- As this was a very warm and humid day, the program was held in the gymnasium.
- During the time I observed, children were actively engaged in an activity they seemed to enjoy, as they appeared to be highly focused on their involvement.
- While children were involved, the course instructor called students out of their activity, one at a time, to individually assess sit-and-reach which checked for flexibility.
- I felt it was an efficient use of activity time to complete the fitness test battery assessments, as well as to maintain an optimum level of privacy and confidentiality.
- For the most part, I was pleased to see the way that students self-managed their activity involvement, as self-managed behavior is a critical factor in the development and maintenance of healthy lifestyle behaviors.

- The discussions between the course instructor and program participants seemed to be very supportive and respectful, with strong reinforcement of effort and positive engagement.
- Time was spent reviewing the data management system of the instructor, as well as the program plan. It was clear to me that much effort had gone into the process for planning and recording data necessary to the goals of this study, and was done in an efficient, thorough, and logical manner.
- Judging the expressions and actions of the participants, it appeared to me that they enjoyed their involvement and seemed to be dedicated to improving their fitness status and active living behaviors.
- It is evident that the instructor has the high respect of all participants, and this is a key factor as a role model for active living and in establishing a positive motivational climate.

Respectfully Submitted:

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Vitae

Keith Anthony Price attended Christian Brothers College High School in Clayton, Missouri. In 1984 he entered St. Louis Community College at Florissant Valley, Florissant, Missouri where he received his Associate in Arts in 1990. Next, he attended the University of Missouri-St. Louis receiving both a Bachelor of Science in Education, Physical Education (1992) and his Master of Education, Elementary Education (1998). He then entered Lindenwood University in St. Charles, Missouri where he earned both a Masters of Arts in Educational Administration (2002) and an Education Specialists in Educational Administration (2006).

Since August, 1994, Mr. Price has been a Physical Education specialist in the Kirkwood School District in Kirkwood, Missouri where he teaches kindergarten through fifth grades. He was elected as his school's Teacher of the Year in 2002. He has also coached the women's varsity volleyball team from 1994 to 1997. In this time he guided the teams to a first place finish in the Missouri State High Schools Association Volleyball State Championship (1996) and a third place finish (1995). He also was named Coach of the Year by the Missouri State Volleyball Association in 1996. Mr. Price currently resides in St. Charles, Missouri.