Motivating Middle School Students to Increased Activity in Physical Education

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A Special Project

Presented to Dr. Jack McPherson

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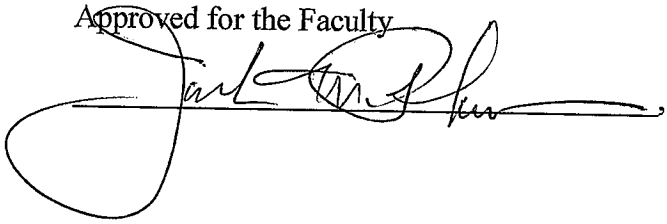
FACULTY APPROVAL

Motivating Middle School Students to Increased

Activity in Physical Education

Approved for the Faculty

 , Faculty Advisor

ABSTRACT

The purpose of this descriptive research study was to provide a competitive team environment that would motivate 7th and 8th grade students to optimize intensity in their physical activity as performed in a 45 minute class period. To accomplish purpose, participating students at Mt. Adams Middle School (MAMS) engaged in timed shoulder touches and jump rope exercises to demonstrate increased performance as measured by pre and posttest instructor designed tests. Further, a review of selected literature was conducted, essential baseline data and information were obtained and analyzed, and related conclusions and recommendations were formulated. Data analyzed supported the hypothesis that 7th and 8th grade middle school physical education students at Mt. Adams Middle School who participated in a competitive team environment involving timed should touches and jump rope exercises demonstrated increased performance.

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CHAPTER 1

Introduction

Background for the Project

In the past few years, physical education has been given less emphasis in the school curriculum. With a variety of new demanding academic standards having been set in core subjects, students have been pulled from physical education classes to allow more time to be spent behind a classroom desk. According to Pierson (2002) "Daily physical activity would benefit student classroom performance and lifelong brain development" (p. 30).

Significantly, however, physical education has been proven to increase students' classroom performances. There have been numerous warnings as to health risks involved when physical education classes have been given reduced priority in student's school schedules. According to Carmona (1999), "Nearly half of American youths aged 12-21 years have not been vigorously active on a regular basis" (p. 27). Washington State has established standards of health and physical education in the schools. As stated by Dr. Terry Bergeson, Washington State Superintendent of Public Instruction (OSPI), "students must acquire the knowledge and skills necessary to maintain an active life" (p. 26). If students have been pulled from physical education classes in order to add academic classroom work, the educational system has implied there was no room for physical fitness in a busy life.

Although the benefits have been proven time and again, physical education has been pushed to the bottom of the educational system's priority list. Parish & Treasure

(2003) found a significant decline in activity levels of 6th to 8th grade students. Since physical education classes have been downsized, the reduced amount of time physical education have been permitted with students has become a matter of concern for physical education teachers. While time was still needed for students to shower and dress down after exercising, their time to get a high intensity workout for an optimum fitness level has diminished. Therefore, for students to achieve better fitness results, the intensity of the workout time must be increased. Bulmahn (1995) stated, "If you have the choice between low-intensity and high-intensity exercise for X amount of minutes, the high-intensity is going to be better" (p. 16).

Statement of the Problem

Students have not received optimal amounts of physical activity. In order to benefit scholastic performance or develop habits that would lead to a healthy/active lifestyle as adults, students need to achieve a high amount of physical activity.

Phrased as a question, the problem which represented the focus of the present study may be states as follows: To what extent did 7th and 8th grade students at Mt. Adams Middle School (MAMS) demonstrate improved performance in timed shoulder touches and jump rope exercises as measured by instructor designed pre and posttests?

Purpose of the Project

The purpose of this descriptive research study was to provide a competitive team environment that would motivate 7th and 8th grade students to optimize intensity in their physical activity as performed in a 45 minute class period. To accomplish purpose, participating students at Mt. Adams Middle School (MAMS) engaged in timed shoulder

touches and jump rope exercises to demonstrate increased performance as measured by pre and posttest instructor designed testing. Further, a review of selected literature was conducted, essential baseline data and information were obtained and analyzed, and related conclusions and recommendations were formulated.

Delimitations

The study focused on 7th and 8th grade students at Mt. Adams Middle School (MAMS) located in a rural setting at White Swan, Washington. The school has a population of approximately 200 students from diverse racial backgrounds. Student demographics include 52% male and 48% female, including 60% Native American, 35% Hispanic and 5% Caucasian. Ninety five percent of the students qualified for the federal free or reduced meals program. Twenty five percent of the students were enrolled in transitional bilingual courses and 20% were from migrant homes. Participating boys and girls enrolled in physical education classes were reorganized into one randomly selected coeducational group, ten 7th and 8th grade boys and girls.

The determination was made that students at MAMS needed increased amounts of physical activity on a daily basis. The students met daily for physical education, but the periods were only 45 minutes in length and a portion of time was occupied in order to achieve proper warm-up, hygiene, and dress time. Students were informed by the researcher, a veteran physical education teacher at MAMS, that the daily recommended level of physical activity for the students' age level needed to consist of a minimum of 30 minutes daily of moderate to vigorous physical activity in class (Baquet, et.al., 2002).

The study was conducted during fall quarter, 2006.

Assumptions

Students at MAMS needed increased amounts of physical activity on a daily basis. The students met daily for physical education, but the periods were only 45 minutes in length and a portion of time was occupied in order to achieve proper warm-up, hygiene, and dress time. The further assumption was made that all participating students understood the need to achieve a minimum of 30 minutes of daily moderate to vigorous physical activity in class (Baquet, et.al., 2002). The researcher believed that students who increased their level of fitness activity would realize a healthier and more productive lifestyle. A further assumption was made that there would be differences among participating students' level of performance on pre and posttests due to physical size and maturation.

Hypothesis

Seventh and 8th grade middle school physical education students at MAMS who participated in a competitive team environment involving timed shoulder touches and jump rope exercises will show increased performance as measured by pre and posttest instructor designed tests.

Significance of Project

Physical education research authorities have concluded a strong correlation exists between academic success in the classroom and physical fitness. Accordingly, if time in the physical education classroom is not utilized appropriately, students may not achieve a fitness level required to obtain academic benefits in the classroom. In order to build healthy fitness habits and to assure that fitness benefits classroom performance, workout

intensity has become extremely important for students in physical education classes. The President's Council on Physical Fitness and Sports (PCPFS), (2001) noted:

> Being physically fit means having the energy and strength to perform daily activities vigorously and alertly without getting "run down", and to have energy left over to enjoy leisure-time activities or meet emergency demands. When you are physically fit, your heart, lungs, and muscles are strong and your body is firm and flexible. Your body weight relative to your height, or Body Mass Index (BMI), is within a healthy, desirable range. Physical fitness will help you control your weight and cope with stress. You'll feel and look better and that often means success in anything you want to do, such as work, sports, dance, and other recreational activities. You may even do better in school. Getting in shape is important for your future. You'll be healthier both now and as an adult and that means a more enjoyable and active life (p. 8).

Procedure

Permission to undertake the following study was obtained during fall quarter, 2006. Each of the six 7th and 8th grade coeducational physical education classes at MAMS was divided into two co-ed groups. The gym was divided into halves with groups rotating from a gymnastic unit on one day to a conditioning unit on alternating days, where pre and posttests were conducted. The participating group of twenty students

included a mixture of ten male and ten female 7th and 8th grade students. Participating students were randomly selected by the researcher.

Participants were asked to perform fitness tasks (i.e. jump rope and shoulder touches) with a partner who was responsible for counting repetitions on the instructor's command. The researcher used a pretest to assess student's workout intensity. The pretest consisted of timed shoulder touches and jump rope exercises. Each student was allotted one minute to perform the tasks and scores were then recorded by the researcher (Pernell Watlamett). A posttest was designed to measure gains made by the students. The posttest was conducted in the same fashion for timed shoulder touches and jump rope exercises. Between pre and posttests, participants were informed that their scores would be posted and compared to other physical education classes at MAMS. To facilitate the exercise procedure, the researcher instructed students to perform the task for one minute while being timed by a partner student. The instructor recorded repetition numbers for both shoulder touches and jump rope exercises. Student partners and timers then switched roles. This process was repeated to fulfill jump rope and shoulder touch records for all participants.

Definitions of Terms

Significant terms used in the context of the present study have been defined as follows:

body mass index. An index that expresses adult weight in relation to height.

cardiovascular endurance. Refers to heart, lungs and blood vessel capacity.

competitive team environment. An environment that required a group to work in competition against the performance of another group.

demographic. The characteristics of a human population or part of it, especially its size, growth, density, distribution, and statistics regarding birth, marriage, disease and death.

descriptive research study. A study using data analysis techniques enabling the researcher to meaningfully describe many scores with a small number of numerical indices.

fitness. The state of being physically fit.

flexibility. The ability to bend or be bent repeatedly without damage or injury.

health. The general condition of the body or mind, especially in terms of the presence or absence of illness, injuries, or impairments.

jump rope. An exercise where an individual holds onto each end of a single rope and rested the rope behind the heels. The individual would then swing the rope overhead and underfoot as the individual jumps. Individuals that jumped rope received one point for each time the rope passed underfoot.

motivation. The act of working with a purpose to the fullest of one's ability.

muscular endurance. The ability of muscles to bear prolonged exertion.

obesity. A condition in which somebody's weight is more than 20 percent higher than is recommended for that person's height.

percentile. A value on a scale of one hundred that indicates whether a distribution is above or below a given value.

physical education. Gymnastics, athletics, team sports, and other forms of physical exercise taught to children in school.

physical fitness. Refers to the body's level of fitness rather than the mind, the soul, or feelings.

physiology. The branch of biology that deals with the internal workings of living things, including such functions as metabolism, respiration, and reproduction, rather than their shape or structure.

random sample. All individuals in the defined population have an equal and independent chance of being selected for the sample.

shoulder touches. An exercise where an individual is in a push-up position with one foot crossed over the other. The exercise is designed to increase physical strength of the upper body. After picking up each hand one at a time and touching the opposite shoulder, the individual then puts that hand back on the ground and does the same with

the other hand on the opposite side. The individual does this as fast as possible until the end of the one minute time period.

wellness. Physical well-being, especially when maintained or achieved through good diet and regular exercise.

Acronyms

AHS.

AHPERD. Alliance for Health, Physical Education, Recreation and Dance

BMI. Body Mass Index

EALR's. Essential Academic Learning Requirements

GLE's. Grade Level Expectations

MAMS. Mount Adams Middle School

MASD. Mount Adams School District

NASPE. National Association for Sport and Physical Education

WASL. Washington Assessment of Student Learning

Chapter 2

Review of Selected Literature

Introduction

The review of literature and research summarized in Chapter 2 was organized to address:

- How Exercise Benefits Student Learning.
- Goals, Trends, and Standards in Physical Education.
- Summary.

Data current primarily within the last five years were identified through an online computerized literature search of the Educational Resources Information Center (ERIC), the internet, and Proquest. A hand-search of selected research materials was also conducted.

How Exercise Benefits Student Learning

Pierson (2002) discussed the importance of physical education in the classroom environment, and challenged the idea physical education has been a place for students to "run off" energy. Pierson discussed numerous benefits to staying physically active. This authority found a strong correlation between daily physical movements and increased motor skills, academic performance, and attitude toward school. In addition to improved alertness, creativity, efficiency, and memory, exercise has shaped our muscles, heart, lungs, and bones and has strengthened the basal ganglia, cerebellum, and corpus callosum, all key areas of the brain.

Research conducted by the California Department of Education (2003) also found that physical exercise and this study found a strong correlation between elementary and middle school students' physical fitness and academic performance. From a study evaluating nine hundred and fifty four thousand students from 5th, 7th, and 9th grades, findings revealed that students with higher levels of fitness at each of the three grade levels scored higher on the SAT, and a strong correlation was found between the number of fitness standards achieved and a consistent increase in reading and math scores.

According to Sanders (2004) participation in school athletics can also be helpful beyond mere physical fitness and enhancement of other life skills including teamwork, dedication and relationship building. Said Sanders, "athletics offers you something to put on a college application" (p. 1).

In a 2004 article by Hobson entitled "Friends Don't Let Friends Drop Sports", the benefits of student participation on sports teams was discussed. According to this study, not only did sports involvement have a positive influence on self-esteem and social competence, but also it contributed to improved student learning and diminished substance abuse.

Mathews (2004) also supported the idea that student participation in sports was consistent with higher levels of academic achievement. Said Mathews: "the achievement level of students who participate in sports and are physically fit is so much higher than the achievement level of students who do not participate in sports and are physically fit" (p. 1).

According to the Executive Director of the California-based WISE Project, Dr. Pamela Clute (2004) contended that learning of mathematics was enhanced by physical fitness. Clute created a week-long program for middle-school students which incorporated fitness into mathematics instruction to promote the development of well-rounded individuals.

Similarly, research published by the Maryland Professional Karate Association in an article entitled "Exercise Your Brian," indicated that physical exercise improved mood by increasing levels of dopamine and serotonin, also known as neurotransmitters, that effect attention and learning in a positive way. According to this authority, physical exercise keeps the brain active and alert by increasing blood flow to the brain and promoting the creation of blood vessels in the brain (http://www.mpka.net/soke_says/ExerciseYourBrain.htm., 2004).

A 1999 related research study, conducted by Sejnowski at the Howard Hughes Medical Institute, found that voluntary running boosts the growth of new nerve cells and improved learning and memory in adult mice. This research indicated that exercise produced about 2.5 times more new nerve cells in mice. These nerve cells were concentrated in the hippocampus part of the brain, which plays a central role in memory formation processes, including: Spatial learning; locating objects in the environment, and, consciously recalling facts, episodes, and unique events. Examination of the brain tissue of the mice showed that the exercised mice had twice as much long-term memory as the sedentary mice. These observations supported the idea that exercise enhanced the

formation and survival of new nerve cells, as well as the connections between nerve cells, which in turn improved long-term memory. (Hughes, p.1)

In an article entitled "Exercise for Mental Agility" (2004), a body of evidence suggested:

> Exercise was good for the swarm of electrical connections in the brain that allow you to think, solve problems and remember. Consider: Brain cells thrive on oxygen and glucose. Aerobic exercise sends a lot of blood rich in oxygen and glucose to your gray matter, which makes up just two percent of your body weight but consumes fully 25 percent of the glucose and oxygen you take in.
>
> (http://222.vitalstar.com/exerciseformentalhealth.hitm., p.1).

A 1992 United States Department of Education report explained that ability and effort were both important in determining academic performance. This research contended that "when students combine inspiration and perspiration, they were usually rewarded with high grades" (p. 3). Essentially, when athletes applied the discipline they learned on the court, field, or mat to their academics, they earned better grades.

Goals, Trends, and Standards in Physical Education

Butler & Anderson (2002) contended that people of all ages can improve their quality of life through a lifelong practice of moderate physical activity. These authorities explained how physical education instruction could work to motivate students in the classroom and assist in forming positive fitness habits as

adults. Similarly, Hutchinson & Mercier (2004) discussed factors that motivated students in physical education. Goals that focused on personal improvement and measurable were found to be most beneficial. Student goals should be challenging, but achievable. When short term goals have been set and assessed occasionally, students gained greater benefits from established goals.

Parish & Treasure (2003) found a decline in physical activity levels in students from 6th to 8th grade. The study addressed situational motivation as an affecting factor in the activity levels of middle school students. These investigators found that promoting a mastery-oriented motivational climate in physical education fostered self-determined situational motivation and physical activity. As stated by Parish & Treasure: "In a task state of involvement, ability is demonstrated when task learning and mastery are achieved and high effort is exerted. An individual's assessment of ability, therefore, is self-referenced and success is perceived when mastery is determined" (p. 10).

According to Cresswell et. al. (2003), there were multiple factors that affect one's motivation and all must be considered. This authority argued that achievement goal theory proposes that an individual's motivation is the combination of their own disposition (i.e., goal orientation) and the situation (e.g., motivational climate).

The Surgeon General of the United States Department of Health and Human Services cited schools as one of five critical settings where goals need to be established to help stop childhood obesity. With students spending more than

1,000 hours a year at school, daily physical education provides an important opportunity for students to be active, and it is critical for developing lifelong skills. Studies have shown that schools offering intense physical activity programs have seen positive effects on academic performance in areas such as math, reading and classroom behavior – even when the added requirements takes away from the schools' academic instructional time. (www.surgeongeneral.gov/topics/obesity/calltoaction/2_2_2.htm).

The National Association for Sport and Physical Education (NASPE, 2003) has produced national standards to enhance knowledge, improve professional practice, and increase support for high quality physical education, sport, and physical activity programs through research, development of standards, and dissemination of information. One of NASPE's key beliefs has been to assure that every student in our nation's schools, from kindergarten through grade 12, should have the opportunity to participate in quality physical education. The unique role of quality physical education programs has become that of helping all students develop health-related fitness, physical competence, cognitive understanding, and positive attitudes about physical activity so that they can adopt healthy and physically active lifestyles. Quality physical education programs are also important because they provide learning experiences that meet youngsters' developmental needs, which in turn helps to improve their mental alertness, academic performance, and readiness and enthusiasm for learning. According to NASPE guidelines, a high-quality physical education program includes the

following components: opportunity to learn, meaningful content, and appropriate instruction.

Physical activity has long been recognized as critical to the development and maintenance of good health. The goal of physical education has been to develop physically educated individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity. According to the Alliance for Health, Physical Education, Recreation and Dance (AHPERD, 2003) a physically educated person should be able to: demonstrate competency in motor skills and movement patterns needed to perform a variety of physical activities; demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities; participate regularly in physical activity; achieve and maintain a health-enhancing level of physical fitness; exhibit responsible personal and social behavior that respects self and others in physical activity settings; and value physical activity for health, enjoyment, challenge, self-expression and/or social interaction. These National standards have provided guidance for developing state and local Physical Education curricula. State and local school districts across the country have used the national standards to develop a framework for school Physical Education curricula. Others have revised their existing standards and curricula to align with the nationals standards. The national standards have demonstrated that physical education has academic standing equal to other subject areas (http://www.ahperd.org/naspe/publications-nationalstandards.html).

In 2004, Washington State adopted standards developed by NASPE to create Essential Academic Learning Requirements for Health and Fitness. Washington State school reform efforts have focused on setting clear, high expectations for what students should know and be able to do. The Essential Academic Learning Requirements (EALR's) have articulated the state's expectations and learning standards, and the Washington Assessment of Student Learning (WASL) measures whether students have met these standards. The new Grade Level Expectations (GLE's) have provided specific learning standards for students in grades K-10, clarifying the skills and strategies all students need to demonstrate proficiency in each content area (http://www.k12.wa.us/CurriculumInstruct/default.aspx).

In 2006, GLE's along with a Fitness Performance Assessment Protocol were developed and planned for implementation as a Washington school based assessment. In 2008, site-based Health and Fitness Assessments were expected to be in place for all Washington public schools. An understanding of good health and fitness concepts and practices have become essential for all students. Businesses have already begun to realize the extent to which poor health practices can undermine an employee's effectiveness and ability to succeed. Teaching our students good health and safety principles can lead to a lifetime of healthy practices, resulting in more productive, active, and successful lives. The EALR's in Health and Fitness have established the concepts and skills necessary for safe

and healthy living, and in turn, for successful learning. (http://www.k12.wa.us/CurriculumInstruct/healthfitness/default.aspx).

Demographic trends have caused many professionals to believe that the epidemic in inactivity and the associated epidemic of obesity are being driven by multiple factors (societal, technologic, industrial, commercial, financial) and must be addressed likewise on several fronts. Foremost among these were the expansion of school physical education programs which discouraged children from pursuing sedentary activities and provided suitable role models for physical activity. According to the Washington State Public School Enrollment in May, 2004, Washington State schools had 1,020,959 students enrolled. In comparison by gender, the male population was 51.6 percent and the female population equaled 48.4 percent (October, 2004). 35.9 percent of those students came from households that qualified for the Free or Reduced Lunch Program (May, 2005). Ethnic origin included five major diversities. These diversities were identified as: White (70.7%), Hispanic (12.9%), Asian (7.9), Black (5.7%) and American Indian (2.8%) (October, 2004) (http://reportcard.ospi.k12.wa.us/).

By contrast, Mount Adams School District (MASD) supported a much higher percentage of ethnic diversity which included a student population comprised of 60% Native American, 35% Hispanic, and 5% Caucasian. The MASD also supported a noticeable difference in data relative to households supporting students eligible for the Free and Reduced Lunch Program (i.e., 95%).

As reported in the Journal of the American Medical Association in 1998, the World Health Organization declared obesity a global epidemic with major health implications. According to this research, the prevalence of overweight or obesity in children and youth in the United States was over 15%, a value that has tripled since the 1960s. The health implications of this epidemic have been profound. Insulin resistance, type 2 diabetes mellitus, hypertension, obstructive sleep apnea, nonalcoholic steatohepatitis, poor self-esteem, and a lower health-related quality of life were among the co-morbidities seen more commonly in affected children and youth than in their unaffected counterparts. In addition, up to 80% of obese youth continued this trend into adulthood. Adult obesity has also been associated with higher rates of hypertension, dyslipidemia, and insulin resistance, which are risk factors for coronary artery disease, the leading cause of death in North America.

Children and youth have become more sedentary than ever with the widespread availability of television, videos, computers, and video games. Data from a 1988-1994 National Health and Nutrition Examination Survey indicated that 26% of American children (up to 33% of Mexican American and 43% of non-Hispanic black children) watched at least four hours of television per day, and these children were less likely to participate in vigorous physical activity. Children also had greater BMI's and skin-fold measurements that those who watched less than two hours of television per day (Journal of American Medical Association, 1998).

Not only has the rate of sedentary activity risen, but participation in physical activity has not been optimal. In a 2002 Youth Media Campaign Longitudinal Survey, 4500 children 9 to 13 years of age and their parents were polled about physical activity levels outside of school hours. The report indicated that 61.5% of 9- to 13- year olds did not participate in any organized physical activities and 22.6% did not partake in non-organized physical activity during non-school hours (Centers for Disease Control and Prevention, 2002).

While school districts have continued to reduce Physical Education programs and funding, the "Shape of the Nation Report: Status of Physical Education in the USA," released by the National Association for Sport and Physical Education (NASPE) and the American Heart Association (AHA), studies showed 95% of parents nationwide urged that physical education should be included in school curriculum for all students in grades K-12. Additionally, 85% of parents and 81% of teachers believed that students should take physical education every day at every grade level. Finally, 92% of teens indicated they would like to receive daily physical education. More than 75% of parents and teachers believed that school boards should not reduce physical education for budgetary reasons or because of the need to meet stricter academic standards (www.ahperd.org/naspe/shapeofthenation/template/cfm=appendixD.html).

Research conducted by Krebs & Jacobsen (2003) confirmed the importance of social, physical, and cultural environments in determining the extent to which people are able to be active in all facets of daily life, including

work, education, family life, and leisure. Creating active school communities has become an ideal way to ensure that children and youth adopt active, healthy lifestyles. Physical education should be compulsory, and maintain quality, daily classes taught by qualified, trained educators. The curricula should emphasize enjoyable participation in physical activity that helps students develop the knowledge, attitudes, motor skills, behavioral skills, and confidence required to adopt and maintain healthy active lifestyles. These classes should allow participation by all children regardless of ability, illness, injury, and developmental disability.

Summary

The review of selected literature and related investigation reported in Chapter 2 supported the following research themes:

1. Physical education research authorities concluded that a strong correlation exists between elementary and middle school students' physical fitness and academic performance.

2. Recently established goals and standards for physical education curricula have urged that teaching students good health and safety principles can lead to a lifetime of healthy practices, resulting in more productive, active, and successful lives.

Chapter 3

Methodology and Treatment of Data

Introduction

The purpose of this descriptive research study was to provide a competitive team environment that would motivate 7th and 8th grade students to optimize intensity in their physical activity as performed in a 45 minute class period. To accomplish purpose, participating students at Mt. Adams Middle School (MAMS) engaged in timed shoulder touches and jump rope exercises to demonstrate increased performance as measured by pre and posttest instructor designed tests. Further, a review of selected literature was conducted, essential baseline data and information were obtained and analyzed, and related conclusions and recommendations were formulated.

Chapter 3 contains a description of the methodology used in the study. Additionally, the researcher included details concerning participants, instruments, design, procedure, treatment of the data and summary.

Methodology

This descriptive research project utilized pre and posttests designed by the researcher (Table 1) to measure student performance in timed shoulder touches and jump rope exercises. Data obtained were used to draw related inferences to reach conclusions related to student progress from pre to posttest.

Participants

Participants in the study included twenty 7th and 8th grade students enrolled in the writer's (Pernell Watlamett) physical education classes at Mount Adams Middle School. Ten male and ten female students were randomly selected, and pre and posttests were administered to measure performance on timed shoulder touches and jump rope exercises. The ethnically diverse participants were tested without bias related to physical maturation or fitness.

Instruments

To obtain essential baseline data, pre and posttests were designed by the instructor (Pernell Watlamett) to measure student performance in timed shoulder touches and jump rope exercises. This approach involved collecting numerical data to test the hypothesis and to formulate related inferences, conclusions and recommendations.

Design

Essential baseline data obtained for use in the present study during fall quarter 2006, included the number of pre and posttest repetitions for timed shoulder touches and the number of minutes/seconds spent performing jump rope exercises. Results were recorded by the researcher to measure student progress from pre to posttest.

Procedures

Procedures undertaken in the present study evolved in several stages as follows:

1. Permission to undertake the study was obtained during fall quarter, 2006.

2. Each of the six 7th and 8th grade coeducational physical education classes at MAMS were divided into two co-ed groups.
3. The gym was divided into halves with groups rotating from gymnastic unit on one day to a conditioning unit on alternating days, where pre and posttests were conducted.
4. The participating group of twenty students included a mixture of ten male and ten female 7th and 8th grade students.
5. Participants were asked to perform fitness tasks (i.e., jump rope and shoulder touches) with a partner who was responsible for counting repetitions on the instructor's command. The researcher instructed students to perform the task for one minute while being timed by a partner student.
6. The instructor recorded repetition numbers for both shoulder touches and jump rope exercises. Student partners and timers then switched roles. This process was repeated to fulfill jump rope and shoulder touch records for all participants.
7. During spring semester 2008, essential baseline data were compiled and analyzed, and related conclusions and recommendations were formulated.

Summary

Chapter 3 provided a description of the research methodology employed in the study, participants, instrument used, research design and procedure utilized. Details concerning treatment of the data obtained were also presented.

CHAPTER 4

Analysis of the Data

Introduction

The present descriptive research study sought to provide a competitive team environment that would motivate 7th and 8th grade students to optimize intensity in their physical education classes at Mt. Adams Middle School (MAMS). To address this purpose, participating students were organized to demonstrate their performance in timed shoulder touches and jump rope exercises as measured by instructor designed pre and posttests.

The study focused on 7th and 8th grade students at the Mt. Adams Middle School (MAMS) located in a rural setting at White Swan, Washington. The school has a population of approximately 200 students from diverse racial backgrounds. Student demographics include 52% male and 48% female, including 60% Native American, 35% Hispanic and 5% Caucasian. Ninety five percent of the students qualified for the federal free or reduced meals program. Twenty five percent of the students were enrolled in transitional bilingual courses and 20% were from migrant homes. Participating boys and girls enrolled in physical education classes were reorganized into one randomly selected coeducational group, twenty 7th and 8th grade boys and girls.

Hypothesis

Seventh and 8th grade middle school physical education students at MAMS who participated in a competitive team environment involving timed

Shoulder touches and jump rope exercises will show increased performance as measured by pre and posttest instructor designed tests.

Results of the Study

As indicated below, an analysis of data presented in Table 1 has provided a convincing argument from which the researcher may conclude that the hypothesis of the study has been supported (i.e., 7th and 8th grade middle school physical education students at MAMS who participated in a competitive team environment involving timed shoulder touches and jump rope exercises demonstrated increased performance as measured by pre and posttest instructor-designed tests).

Significantly, when comparing pre-test, posttest, and final scores for shoulder touches, all 20 participating 7th and 8th grade students (100%) demonstrated improvement in the number of shoulder touches performed in one minute. Specifically, the number of shoulder touches performed by each student improved from 3 to 10 repetitions during the one-minute time allowed.

Similarly, when comparing pre-test, posttest and final scores for jump rope exercises, all 20 participating 7th and 8th grade students (100%) demonstrated improvement in the number of jumps in one minute. As shown in Table 1, student's jumps measured in one minute improved from 60 to 75 repetitions during the one-minute time allowed.

Table 1

Pre and Posttest Scores
Timed Shoulder Touches and Jump Rope Exercises

Student #	Pre Test Scores		Posttest Scores		Final Scores	
	Shoulder Touches	Jump Rope Exercises	Shoulder Touches	Jump Rope Exercises	Shoulder Touches	Jump Rope Exercises
1	25	50	28	60	+3	+10
2	27	54	30	60	+3	+6
3	30	56	36	70	+6	+14
4	30	60	40	72	+10	+12
5	31	60	40	75	+9	+15
6	31	65	35	74	+4	+9
7	35	65	37	73	+2	+8
8	36	70	40	80	+4	+10
9	32	70	35	82	+3	+12
10	26	70	30	84	+4	+14
11	24	75	28	90	+4	+15
12	33	78	36	89	+3	+11
13	27	79	29	100	+2	+21
14	28	80	31	100	+3	+20
15	34	80	37	105	+3	+25
16	35	89	39	120	+4	+31
17	29	89	32	125	+3	+36
18	28	90	30	110	+2	+20
19	23	90	25	100	+2	+10
20	20	99	23	125	+3	+26

Final (+) or (-): Indicates Improvement (+) and diminished (-) performance on Shoulder Touches and Jump Rope Exercises from Pre Test and Posttest.

Findings

As illustrated above in Table 1, and from the resulting analysis of those data, the problem which represented the focus of the present study was answered in the affirmative. That is, when providing a competitive team environment that would motivate 7th and 8th grade students to optimize intensity in their physical activity as performed in a 45 minute class period, 100% of the participants improved their performance in timed shoulder touches and jump rope exercises.

Discussion

Based upon the preceding analysis of data, one may conclude and recommend that Physical Education classes be organized to challenge students to challenge themselves. If students are given an opportunity to compete against their own performance levels, as well as others, they will make the effort to improve themselves because they are competitive by nature. Further, students who are successful in improving their physical fitness are likely to improve their performance in other classes/disciplines, including Mathematics, Reading, Art and the Social Sciences. This writer believes that stimulating, vigorous Physical Education classes help students to think and to perform better in classes requiring greater mental concentration.

Summary

Chapter 4 included discussion of the environment, hypothesis, results of the study, findings and discussion. Data analyzed supported the hypothesis that 7th and 8th grade middle school Physical Education students at MAMS who

participated in a competitive team environment involving timed shoulder touches and jump rope exercises demonstrated increased performance.

CHAPTER 5

Summary, Conclusions and Recommendations

Summary

The purpose of this descriptive research study was to provide a competitive team environment that would motivate 7th and 8th grade students to optimize intensity in their physical activity as performed in a 45 minute class period. To accomplish purpose, participating students at Mt. Adams Middle School (MAMS) engaged in timed shoulder touches and jump rope exercises to demonstrate increased performance as measured by pre and posttest instructor designed testing.

A review of selected literature was conducted, essential baseline data and information were obtained and analyzed, and related conclusions and recommendations were formulated.

Conclusions

Based on the review of selected literature and major findings produced from the present study, the following conclusions were reached:

1. Physical education research authorities concluded that a strong correlation exists between elementary and middle school students' physical fitness and academic performance.

2. Recently established goals and standards for physical education curricula have urged that teaching students good health and safety principles can

lead to a lifetime of healthy practices, resulting in more productive, active, and successful lives.

3. When providing a competitive team environment to motivate 7th and 8th grade students to optimize intensity in their physical activity as performed in a 45 minute class period, 100% of the participants improved their performance in timed shoulder touches and jump rope exercises.

Recommendations

As a result of the conclusions cited above, the following recommendations have been suggested:

1. To enhance elementary and middle school students' physical fitness and academic performance, research authorities urge the development of strong physical education programs.

2. To help students lead a lifetime of healthy practices, resulting in more productive, active, and successful lives, established goals and standards for physical education should be strictly adhered to.

3. To optimize intensity in their physical activity, middle level students should be encouraged to participate in timed exercises where they compete against their own fitness level and/or levels of their peers.

4. School district personnel seeking information related to Physical Education and fitness may wish to utilize information contained in this study or, they may wish to undertake further study more suited to their unique needs.

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