

California State University, San Bernardino

CSUSB ScholarWorks

Theses Digitization Project

John M. Pfau Library

2008

Frequency of and barriers to physical education in selected grade levels in a Southern California school district

Stephen Eugene Mann

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd-project>

 Part of the [Health and Physical Education Commons](#)

Recommended Citation

Mann, Stephen Eugene, "Frequency of and barriers to physical education in selected grade levels in a Southern California school district" (2008). *Theses Digitization Project*. 3375.
<https://scholarworks.lib.csusb.edu/etd-project/3375>

This Thesis is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

FREQUENCY OF AND BARRIERS TO PHYSICAL EDUCATION IN
SELECTED GRADE LEVELS IN A SOUTHERN CALIFORNIA
SCHOOL DISTRICT

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Health Education

by
Stephen Eugene Mann

March 2008

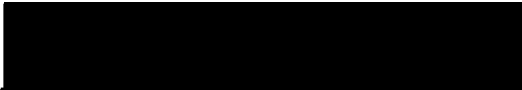
FREQUENCY OF AND BARRIERS TO PHYSICAL EDUCATION IN
SELECTED GRADE LEVELS IN A SOUTHERN CALIFORNIA
SCHOOL DISTRICT

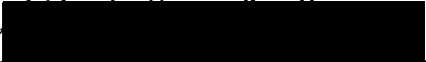
A Thesis
Presented to the
Faculty of
California State University,
San Bernardino


by
Stephen Eugene Mann

March 2008

Approved by:


Kim Clark, Chair, DrPH, CHES
Health Science and Human Ecology


Aaron Moffet, PhD
Kinesiology


Ted Coleman, PhD, CHES
Health Science and Human Ecology

3-4-2008
Date

Copyright 2008 Stephen Eugene Mann

ABSTRACT

Childhood obesity has become a major focus of health concern within the United States. As the number and adolescents with body mass indices above an acceptable healthy range increases, so does the urgency for intervention. The United States government has passed a Nutrition and Wellness legislation which requires all school districts to document an action plan and be in compliance by July of 2006. Such plans should include guidelines for nutrition education, enhanced physical education, and more nutritious foods made available to students.

This study addressed the frequency of physical education instructional minutes provided for and participated in by third, fifth, seventh, ninth, and eleventh graders throughout a Southern California school district.

Although the findings were not totally conclusive, it appears that the mandated number of physical education instructional minutes is not being met at the primary school level but is being met at the middle school and high school level. The reason for primary schools not meeting Education Code requirements seems to be a lack of time in

the school day. The most common response among teachers surveyed was that time is limited and more emphasis is being placed on academics.

Recommendations for further research should include identifying common knowledge, attitudes, and beliefs among school site and district-level administrators about the importance of physical education and the role it plays in student academic achievement and personal well-being.

ACKNOWLEDGEMENTS

I would like to express my sincere thanks to the professors at California State University, San Bernardino for the knowledge they have bestowed upon me. I would like to give a special thanks to Dr. Kim Clark, my academic advisor and first reader, for his patience, guidance, and support throughout this journey. I would also like to thank Dr. Ted Coleman and Dr. Aaron Moffett for their guidance and instruction throughout this project.

DEDICATION

This project is dedicated to my wife Alison and my son Jacob for all the love, support, and inspiration they have given me throughout.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGEMENTS	v
LIST OF TABLES	viii
CHAPTER ONE: INTRODUCTION	1
Statement of the Problem	2
Hypotheses	3
Purpose of the Study	4
Importance of the Study	4
Assumptions	6
Limitations	7
Delimitations	7
Definition of Terms	8
Organization of the Study	9
CHAPTER TWO: REVIEW OF RELATED LITERATURE	
Overview of the Problem	11
Causal Factors and Interventions for Obesity	19
Diet and Exercise	19
Medical and Psychological Factors	20
Public Attitude Towards Obesity	21
Theory-Based Interventions	22
Government Interventions	23

CHAPTER THREE: DESIGN AND METHODOLOGY	
Selection of the Subjects	26
Collection of the Data	27
Instrumentation	28
Data Treatment Procedures	29
Summary	31
CHAPTER FOUR: FINDINGS AND RESULTS	32
Respondent Characteristics	33
Descriptive Data	35
Hypothesis Testing	51
Summary of Findings	60
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS	
Summary	62
Conclusions	65
Recommendations for Further Research	67
Recommendations for Further Practices	68
APPENDIX A: LETTER OF INFORMED CONSENT	70
APPENDIX B: SURVEY INSTRUMENT	72
REFERENCES	78

LIST OF TABLES

Table 1.	Do You Hold a California Teaching Credential Specifically in Physical Education?	33
Table 2.	How Much Training, If Any, Have You Received in Physical Education Instruction Techniques?	34
Table 3.	What Grade(s) Do You Currently Teach?	35
Table 4.	Average Number of Sessions and Minutes Per Session Spent by Elementary Students in a Curriculum-Based Physical Education Program?	36
Table 5.	Average Number of Sessions and Minutes Per Session Spent by Seventh Grade Students in a Curriculum-Based Physical Education Program?	37
Table 6.	On Average, How Many Days Per Week Do Your Students Participate in a Curriculum-Based Physical Education Program?	37
Table 7.	On Average, How Many Minutes Do Your Students Spend Per Session as Stated Above?	38
Table 8.	On Average, How Many Days Per Week Do Your Students Participate in a Curriculum-Based Physical Education Program?	38
Table 9.	On Average, How Many Minutes Do Your Students Spend Per Session as Stated Above?	39
Table 10.	On Average, How Many Days Per Week Do You Personally Participate in a Physical Activity Program?	40

Table 11.	Physical Education is important to the Overall Health and Development of Students.	41
Table 12.	Combating the Epidemic of Childhood Obesity Should Be a Focus Within the Educational System.	41
Table 13.	There is a Correlation Between Physical Activity Levels and Academic Achievement.	42
Table 14.	Physical Education Should Be Offered at All Grade Levels.	43
Table 15.	Effective Physical Education Strategies Can Be Achieved Only Through a Comprehensive, Curriculum-Based Physical Education Program.	44
Table 16.	Effective Physical Education Instruction Can Be Given Only by a Credentialed Physical Education Teacher.	44
Table 17.	Any Credentialed Teacher is Qualified to Give Physical Education Instruction.	45
Table 18.	My Students Receive the Minimum Number of Physical Education Instructional Minutes as Required by California Education Code.	46
Table 19.	There is Enough Time in the School Day to Provide Physical Education Instruction.	47
Table 20.	Physical Education is the Responsibility of the Education System.	47
Table 21.	Students Get Enough Physical Activity Without a Physical Education Program at School.	48

Table 22.	Instructional Minutes for Physical Education Can Be Achieved Only Through a Curriculum-Based Physical Education Program.	49
Table 23.	The Relationship Between the Credential Held by the Teacher and the Number of Minutes of Exercise Spent by Students.	53
Table 24.	The Relationship Between the Amount of Training in Physical Education Instructional Techniques and The Number of Minutes Spent by Students Exercising.	55
Table 25.	The Relationship Between the Teacher's Exercise Pattern and the Number of Minutes Spent by Students Exercising.	56
Table 26.	The Relationship Between the Teacher's Exercise Pattern and Their Perception that Physical Education is Important to the Overall Health and Development of Students.	58
Table 27.	The Relationship Between Grade Level Taught and Minutes of Physical Activity.	59
Table 28.	The Relationship Between the Type of Credential Held, in Relation to Whether the Respondent Believes that Physical Education is Important to the Overall Health and Development of Students.	60

CHAPTER ONE

INTRODUCTION

America is faced with an epidemic of childhood obesity with 16% of children and 33% of adolescents diagnosed as obese (The American Academy of Child and Adolescent Psychiatry, 2001). Childhood obesity contributes to a number of health complications including hypertension, osteoarthritis, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, sleep apnea, respiratory problems, and some cancers, including endometrial, breast, and colon. There are many factors that contribute to this problem. The simplest explanation is that many children take in more calories than they use throughout the day (Centers for Disease Control and Prevention, 2007b).

Food made available to children, as well as their eating and activity patterns, play major roles in their energy balance and overall weight (Centers for Disease Control and Prevention, 2007a). Thus, with the exception of some medical, psychological, or physiological conditions, unhealthy eating patterns and lack of physical activity are

the causal factors most responsible for this epidemic (American Cancer Society, n.d.).

As a combative measure, the nation is taking steps towards intervention. One of the first steps is aimed at the public schools system. According to the Women, Infant and Children (WIC) program Reauthorization of 2004 schools must provide students with knowledge and skills for healthy lifestyles. School districts are now mandated to establish a Nutrition and Wellness Plan to address topics such as nutritional education, increased physical education, and policies for more nutritious foods to be provided at school sites (Davis, 2005).

Statement of the Problem

This study was designed to determine whether primary and secondary students within a Southern California school district receive the minimum mandated instructional minutes for physical education, and to determine any existing barriers to implementation.

Hypotheses

The general null hypothesis (H_0) for this study is that curriculum-based physical education programs are not being implemented, per Education Code, for all primary and secondary students within a Southern California school district. The data obtained from this study tested the hypothesis by comparing the frequency of reported physical activity among students in grades 3, 5, 7, 9, and 11 to that of the required minutes of instruction prescribed by the California Education Codes for physical education.

Additional null hypotheses for this study are as follows: There is no relationship between having credentialed physical education teachers on staff and the number of minutes of physical activity instruction provided to students (H_1), There is no relationship between formal physical education training and the number of minutes of physical activity instruction provided to students (H_2), There is no relationship between the teachers' personal exercise pattern and the number of minutes of physical activity instruction provided to their students (H_3). Additional data obtained from this study identified self-reported levels of formal physical education training among

teachers at each represented grade level, and self-reported levels of personal physical activity among teachers at all levels.

Purpose of the Study

The purpose of this study was to determine to what extent physical education programs are being implemented in a Southern California school district, in an effort to increase physical activity and decrease obesity among students. This study also identified factors that either contributed to, or detracted from, implementation.

Importance of the Study

Reducing childhood obesity is an important issue that must be addressed in the United States. If obesity rates among children are significantly lowered through teaching proper nutrition and physical activity, then reduction of obesity could continue throughout adolescence and adulthood (The American Academy of Child and Adolescent Psychiatry, 2001). Therefore, this study was designed to determine the quality and frequency of physical activity engaged in by grade levels 3, 5, 7, 9, and 11 through comprehensive physical education programs within a Southern California School District. Furthermore, this study determined if

grades K-6 are receiving 200 minutes of physical education instruction every ten days and if grades 7-12 are receiving 400 minutes of physical education instruction every ten days.

Physical activity is a learned behavior, and thus must be addressed at an early age and continued throughout adolescence if the behavior is to continue throughout adulthood. A logical assumption would be that when students graduate from high school, they take the knowledge and skills they have learned throughout their school experience and continue to practice healthy exercise habits as prescribed in the California Education Codes for physical education (California Department of Education, 1999). Another hope is that as young adults become parents they will instill the same healthy patterns within their children (The American Academy of Child and Adolescent Psychiatry, 2001).

School districts have gone through great efforts to write and adopt policy for physical education. The importance of this research is to verify that such policies are being implemented and followed. Finally, discovering barriers to implementation, if they exist, would be

valuable information for program planning, implementation, and evaluation purposes.

Assumptions

The following assumptions apply to this thesis:

- 1) Implementing a comprehensive physical education program within a public school system will enhance weight management and lower obesity among students.
- 2) Implementing standards for physical education will make a positive impact on student health and well-being.
- 3) Subjects responding to surveys will give accurate information.
- 4) Policies set forth from the Nutrition and Wellness Act and Education Codes can be implemented with little or no difficulty in each district.
- 5) Teachers and coordinators will allow adequate time for and provide correct responses to the data collection process.
- 6) Teachers and coordinators are competent in the content of the project.

- 7) The School District being used in this study is a fair representation of other comparable school districts within Southern California.
- 8) Participants hold a valid California Credential for the grade and or subject they teach.

Limitations

One limitation of this study was that it examined the process of only one school district. These data may therefore serve only as a representation of similar school districts within the region. Also, the level of human cooperation could be a limitation. The value of data collected was based on the overall cooperation and the level of honesty regarding responses given by the population sampled.

Delimitations

Delimitations of the research include the fact that there are other factors related to solving the problem of childhood obesity which were not examined in this study. The influence on district-wide policy compliance or classroom implementation by such factors as community or staff socioeconomic demographics, family practices, community prevention activities and resources, media, and

medical care are not investigated in this study. A Master of Education program addresses the role public education plays in a given problem and how the educational system may contribute to solving it. It was appropriate to narrow the thesis research down to one specific focus. For example, the teacher's role in physical education and promotion rather than a larger scale topic of childhood obesity.

Definition of Terms

The following definitions apply to this thesis:

- 1) Body Mass Index (BMI): A measurement used to determine appropriate and healthy weight ranges taking into account a person's weight, height, age, and gender.
- 2) Nutrition Education: The discipline of teaching and learning appropriate eating habits. A comprehensive nutritional education program should include but not be limited to topics such as understanding of the six essential nutrients and foods wherein each can be found, proper meal time portions, appropriate snacking habits, and healthy meal preparations.

- 3) Nutrition and Wellness Act: An act passed by the federal government requiring all public school district to implement a plan for nutritional education, physical education, and guidelines and policies for foods sold at on school campuses.
- 4) Obesity: State of being morbidly overweight or having a body mass index within an unhealthy range of greater than or equal to 30.
- 5) Physical Education: A comprehensive physical education program which focuses on the teaching and learning of appropriate exercise techniques for aerobic activity, anaerobic activity, flexibility training, and strength training.

Organization of the Study

A random sample of educators within a Southern California school district was selected to participate in a survey that will address the frequency of physical education instruction given to students. The focus was placed on third, fifth, seventh, ninth, and eleventh grades to identify trends in frequency and duration of instruction. Data was also collected on each teacher's education and background regarding physical education, as

well as their perception of barriers to the implementation of the district's physical activity policy. Comparisons were made among teachers to detect any trends in and possible determinants of physical education.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Overview of the Problem

Obesity in the United States has become one of the nation's top public health concerns. Although the problem is often easily noticeable, it is not always easy to prevent. Current literature and research studies show trends in the epidemic of childhood and adolescent obesity as well as the impact it has on individual health and society. For example, the American Academy of Child and Adolescent Psychiatry states that between 16% and 33% of children and adolescents were categorized as obese by the year 2001. Problems associated with overweight and obesity contributes to over 300,000 deaths per year, costing society an estimated one hundred billion dollars. Obesity can be detected in children as early as age five, and children who are obese by the age of 13 are 80% more likely to become obese adults (American Academy of Child and Adolescent Psychiatry, 2001).

Many experts believe that obesity not only causes physical health problems but psychological complications as well. Jonides, Buschbacher, and Barlow (2002) detected a

relationship between obesity and emotional and psychological issues such as self-esteem, depression, eating disorders, and family dynamics. The same researchers also identified low self-esteem and significant depression in overweight children. Another study showed that overweight parents may have an influence on their children's weight problems and concluded that female adolescent weight gain patterns can be predicted on the basis of their parents' weight gain patterns. Adolescents who reported having an obese parent were more than four times more likely to become obese themselves versus their peers who did not have an obese parent. This data was obtained from a mix of both biological and non-biological parents, thus providing evidence that adolescent obesity may be caused by a combination of genetics and environmental factors (Medical News Today, 2005). One more study showed that children who have one obese parent have a 50% greater chance of becoming obese themselves, and that there is an 80% chance if both parents are obese (American Academy of Child and Adolescent Psychiatry, 2001). These findings suggest that interventions to curb child and adolescent obesity should include parents.

A society can be affected in several ways if its children are unhealthy. For example, children who are chronically ill often miss more school, thus inhibiting their learning and development. Children who fall behind in school often struggle and stay behind, causing a strain on the educational system (Guidelines for School Health Programs to Promote Lifelong Healthy Eating, 1996). There is also evidence based on a study performed by the California Department of Education that suggests a significant relationship between physical fitness and academic achievement. This study compared the 2001 Stanford 9 Test scores of 954,000 students to their performance on the state-mandated physical fitness test and found significant positive relationships between the two (Heffernan, 2002).

The Centers for Disease Control and Prevention states that participating in physical activity is important for children and teens because of the beneficial effects it may have on body weight, blood pressure, and bone strength. Also, physically active children are more likely to continue such patterns throughout adolescence and possibly into adulthood (Centers for Disease Control and Prevention, 2007a). It is necessary to address the issue of obesity

through the educational system since it is the most consistent and accessible agency which can be utilized to reach children and adolescents. Also, a number of households and parents may be reached through assignments and outreach activities that encourage family participation.

School districts were mandated to have a Nutrition and Wellness Policy in place by the 2006-2007 school year. Schools have been required to set goals for nutrition education, physical education, and include other school-based activities that are designed to promote wellness (Davis, 2005). Addressing activity at an early age and continuing intervention throughout the senior year of high school is intended to influence social norms regarding healthy eating and exercise to shift into a more positive direction. This is to be accomplished through education, modeling, and skill-based training, all of which are to be implemented throughout the public school system in compliance with the California Department of Education's Physical Education Framework (California Department of Education, 1999).

Discouraging data for physical activity levels among high school students can be found in the National Youth

Risk Behavior Survey (YRBS), which is administered every two years to high school students grades nine through twelve.

Results from the most recent 2005 survey are as follows: 72.2% (+/-5.4) of females and 56.2% (+/-2.1) of males did not meet the recommended levels of physical activity. Furthermore, 71.0% (+/-5.6) of females and 62.9% (+/-4.3) of males did not attend physical education classes daily (YRBS, 2005).

The California Healthy Kids Survey (CHKS) is another source that can be used to obtain data on behavioral patterns of physical activity levels. This survey asks a series of questions pertaining to physical health using phrasing differences as an age appropriate approach. For example, seventh- through eleventh-graders were asked if they participated in twenty minutes of vigorous activity at least three days in the past seven days whereas the fifth graders were asked if they exercise five days a week or more (CHKS, 2006).

The California Healthy Kids technical reports published for San Bernardino County for the Fall 2005 through Spring 2006 states that 44% of fifth graders reported to have exercised six to seven day per week, while

75% of seventh graders and 72% of ninth graders reported to have engaged in at least twenty minutes of aerobic exercise at least three times in the past week. Finally, 52% of seventh graders and 57% of ninth graders reported to have participated in anaerobic exercise for at least thirty minutes at least three times per week (CHKS, 2006).

Student responses for specific Southern California school districts can be accessed from the same California Healthy Kids survey data. In the year 2005, 2,058 fifth graders were surveyed in the Southern California school district used in this study, representing a 62% participation rate within the district. In addition, 1,810 seventh graders representing 56% participation, as well as 1,522 ninth graders at a 48% participation rate and 1,467 eleventh graders at a 64% participation rate took part in the study.

Responses given by the seventh- through eleventh-grade participants of the same district demonstrated a steady decline in exercise participation categories. For example, 71% of seventh graders reported to have participated in twenty minutes of vigorous activity at least three times over the past seven days while 68% of

eleventh graders reported to the same behavior (CHKS, 2006).

These data fall short of the California Education Codes which specify physical education requirements for public schools. Such codes are as follows:

- Education Code Section 51210 requires that elementary grades 1-6 perform a minimum of 200 minutes of physical activity every ten days.
- Education Code Section 51222 requires secondary grades 7-12 perform a minimum of 400 minutes of physical activity every ten days.
- Education Code Section 51225.3 (a)(1)(F) requires elementary school districts grades 1-8 perform a minimum of 200 minutes of physical activity every ten days.

These sections require that locally adopted courses of study at the elementary and secondary levels include physical education, and specify the minimum amount of physical education minutes to be provided to students, and describe the two-course high school physical education graduation requirement (California Department of Education, 1999). "The intent of these Education Code sections is to

have daily physical education available in all grade levels and the equivalent of two years of physical education required for high school" (California Department of Education, 1999).

After reviewing all data, it is evident that the national average for physical activity in the high school system is below an acceptable standard. The Centers for Disease Control and Prevention feels that children may be spending less time engaged in physical activity during school hours than years past. Daily participation in school physical education among adolescents had dropped from 42% in 1991 to 28% in 2003. In addition, less than one-third of high school students meet current recommended levels of physical activity (Centers for Disease Control and Prevention, 2007a).

One explanation for the decline of physical activity within the school system may be explained by a study designed to identify the barriers of physical education programs in the state of Texas. The study concluded that large class sizes and low priority, relative to other academic subjects, were two commonly reported barriers to quality physical education programs administered by

physical education specialist (Barroso, McCullum-Gomez, Hoelscher, Kelder, and Murry, 2005).

Causal Factors and Interventions for Obesity

There are a variety of theories why so many children are reaching unhealthy body weights (Sturm, 2005); (Centers for Disease Control and Prevention, 2007a). Research has examined possible determinants and behavioral trends which may explain this phenomenon. However, there are many health care providers who have reported that they do not treat overweight children that have no other medical conditions and or they do not treat overweight children who have no interest in weight control (Jonides, Buschbacher, and Barlow, 2002).

Diet and Exercise

One study suggests that between 1981 and 1997 younger children were spending an average of 73 minutes more per week in organized sports and outdoor activities than reported in 2005. The same study shows a significant decline in the percentage of walking trips for children aged five to fifteen years within the same time span. The decline is even stronger for adolescents, dropping from

20.9% in 1977 to 13.6% in 1990 to 10.9% in 2001 (Sturm, 2005). Sturm also noted that the results of the 2001 Youth Risk Behavior survey showed that 45% of high school students were not participating in a sport and 48% were not enrolled in a physical education class. Finally, physical education enrollment dropped from 74% to 31% between the ninth and twelfth grades during the same time period (Sturm, 2005).

Medical and Psychological Factors

In efforts to identify potential psychological problems, some pediatric health care providers have reported that they administer a routine assessment of the psychological and emotional states of overweight children and their families as part of weight control evaluation (Jonides, Buschbacher, and Barlow, 2002). In addition to psychological assessments, healthcare providers must evaluate factors such as dietary habits, physical activity, and sedentary behavior (Jonides, Buschbacher, and Barlow, 2002). According to the American Academy of Child and Adolescent Psychiatry (2001) lasting weight loss can only be achieved if the person has self-motivation, yet overweight adolescents may experience low self-esteem which

can obstruct their motivation to lose weight. Therefore, the best plan may be for the whole family to participate in healthy eating habits and moderate exercise. The Academy also states that it is important for parents to realize that they may add to their child's low self-esteem if they focus primarily on the child's weight. For this reason it is recommended that parents address positive qualities as often as possible (American Academy of Child and Adolescent Psychiatry, 2001).

Public Attitude Towards Obesity

Research published as early as the 1960s shows that children had a derogatory attitude towards obesity. One study that asked children to give adjectives that describe a person who is overweight or obese proved that they had a very negative view of such people. Labels such as "lazy", "dirty", "fat", "stupid", and "ugly" were some of the most popular words used. The same study also discovered that there was a stigma and belief that obese people are personally responsible for their own condition (Association for the Study of Obesity, n.d.).

Further research performed by the Association for the Study of Obesity showed that pre-adolescents are able to

associate poor eating habits and lack of exercise with poor health and obesity. This study also showed a correlation between these views and social class. Least favorable views tend to come from the higher social classes. This research may reveal that children and adolescents of a low economic and social background may be at a higher risk of obesity (Association for the Study of Obesity, n.d.).

Theory-Based Interventions

One landmark example of an elementary school health education program evaluation is the School Health Education Evaluation Study or SHEES (Connell, Turner, and Mason, 1985). According to Durlak (1997), this evaluation involved over 30,000 children grades four through seven drawn from over 1,000 classrooms in 20 different states. The evaluation addressed four different health education programs that focused on reducing cardiovascular risk and promoting health. One of the first findings was that all four programs were twice as effective in modifying knowledge rather than behavior. However, behavioral changes were evident in the two programs where training lasted longer, where there was consistent school participation,

and where greater intensity levels were present (Durlak, 1997).

Government Interventions

To combat this epidemic of obesity, the United States government has begun to step in with required mandates such as the federal Child Nutrition Act (CNA). This act requires all school districts participating in USDA school meal programs to create and implement a wellness program by the 2006-07 school year (Davis, 2005). The objective is to create a healthy environment that promotes the prevention of childhood obesity along with the physical and emotional problems associated with poor nutrition and inadequate physical activity. Therefore, schools must set goals for nutrition education, physical activity, and include other school-based activities that are designed to promote wellness and establish nutritional standards for foods that are provided on campus during the school day (Davis, 2005).

In response to this new law, some local and state agencies have developed policies which can be used as resource references. Although these policies are not yet endorsed or approved by the USDA, they serve as a good starting point. The USDA will continue to work with the

Centers for Disease Control, the Division of Adolescent and School Health, and the Department of Educations Safe and Drug Free Schools to continue to set standards and criteria that schools must meet when setting their policies (Davis, 2005).

School districts must be fully aware of the new laws that are in place and understand all the provisions when implementing their own policy plan. Schools are encouraged to create their own individual plan that fits its own individual needs while the physical education component must meet the requirements of current education codes. Schools are also encouraged to form a council which consists of a variety of students, teachers, community members, and representatives from the district's food service program (Davis, 2005).

To support the increased concerns for intervention against childhood obesity, there must also be an increase in support and funding for program implementation. One example of increased funding is the National Institute of Health's obesity research budget of \$378.6 million in 2003 and \$400.1 million in 2004, with spending increasing to \$440.1 million plus \$20 million in discretionary funds in 2005 (DeNoon, 2004).

In summary, obesity in America is a major health concern, and correction of the problem must be made a priority. Childhood obesity threatens the quality of life for children and continues throughout adolescence and adulthood. Schools can play a vital role in the efforts of combating the problem by addressing physical education, nutrition education, and monitoring the sale of foods that are made available at school sites. It is the purpose of this research to determine the extent of which physical education within the school system is being implemented, in an effort to reduce obesity among children and adolescents.

CHAPTER THREE

DESIGN AND METHODOLOGY

Selection of the Subjects

The participants in this study were teachers employed within a Southern California school district. Teachers selected to participate in this study will have current class assignments of third, fifth, seventh, ninth, or eleventh grade. Only physical education teachers for grades seven, nine, and eleven will be asked to participate in this study, whereas all third and fifth grade teachers in the district will be selected. Each participating teacher was credentialed through the State of California with a minimum of a multiple subject credential or a single subject credential for physical education.

A total of 21, or one half, of schools sites within the district were asked to participate in this study. This included 14 elementary schools, 4 middle schools, and 2 high schools. School sites were selected randomly by using a lottery system. All the school site names within the district were given equal chance to have their name drawn. Site names were drawn and recorded until amounts satisfying each represented category were reached.

It should be noted that only teachers working a full time position in one of the above assignments were given surveys. The No Child Left Behind Act (NCLB) should give assurance that each participant holds a valid credential for the current grade level and or subject they teach. However, this is only a fair assumption of the research. It is beyond the research's control to verify if school sites are operating within federal guidelines.

Collection of the Data

Permission to collect data was secured from each school site's administrator by telephone and approval from the district office was given in writing. Surveys were distributed via intra-district mail in the fall of 2007. Distribution and collection time was between mid-October through mid-November. The investigator was responsible for the distribution and collection of the surveys and cover sheets. Participants were instructed to keep their identity confidential and return their completed survey to the researcher via intra-district mail in the sealed envelope provided. One week after surveys were sent to each site, a follow up letter was sent to each site administrator asking them to remind any participants who had not yet completed

and returned their survey to please do so. Furthermore, participation was voluntary and every person was given the option to elect out of the study at any time.

Instrumentation

The survey (Appendix B) had a total of nineteen questions developed by the researcher and project committee. The survey consisted of closed-ended, yes-or-no responses, frequencies, Likert scales, and one open-ended response. Each question represented one or more hypotheses.

A pilot of the survey was conducted to assure the reliability of the research instrumentation. This was conducted by asking a sample of teachers at each grade level to take the survey, wait one week, and retake the same survey again. Surveys were coded to assure responses were checked for consistency among each individual participant. There were no significant discrepancies detected. All paired samples correlations yielded statistically significant correlations between survey one and survey two responses. Similarly paired sample tests yielded no statistically differences between survey one and survey two responses. Finally, the project committee

reviewed and approved the survey instrument for face validity.

Data Treatment Procedures

The survey design tested each hypothesis using quantitative descriptive statistics. H₁, there is no relationship between having credentialed physical education teachers on staff and the number of minutes of physical activity instruction provided to students, was tested by comparing the mean number of minutes students spend exercising with a single subject physical education credentialed teacher vs. a multiple subject credentialed teacher. H₂, there is no relationship between formal physical education training and the number of minutes of physical activity instruction provided to students, was tested by determining the value of Pearson's r for the relationship between the amount of training in physical education instructional techniques and the number of minutes spent by students exercising. H₃, there is no relationship between the teachers' personal exercise pattern and the number of minutes of physical activity instruction provided to their students, was tested by determining the value of Pearson's r for the relationship

between the teacher's exercise pattern and the number of minutes spent by students exercising.

Collected data was entered into a Statistical Package for Social Sciences (SPSS) program at the California State University, San Bernardino campus. Quantitative descriptive statistics was then derived. Frequencies, percentages, and means will be computed for all responses given for each survey question. After all data was gathered, computed, and applied to the respective null hypotheses, the level of significance was tested to determine whether or not the data supported or failed to support the null hypothesis using a probability factor of ($p = .05$).

The final question on the survey asked participants to give an open-ended response about their personal perception of what they think creates the greatest barrier in achieving the state mandated minutes of physical education. Participants were able to choose from one or more of the following categories designed by the researcher and committee; low academic priority, lack of administrative support, crowded classes, lack of skill or training, allowing physical education credits to be earned by participating in other classes or activities such as band

or ROTC, and or other where participants were asked to respond in a provided space.

Responses were analyzed for content by the researcher and research committee, wherein themes were identified and responses were coded to detect any commonalities in the participant's knowledge, attitudes, and beliefs regarding perceived barriers of administering physical education instructional minutes.

Summary

The instrument used was a survey designed by the researcher. Responses were entered into a SPSS program so that quantitative descriptive statistical data could be derived. Data was then used to test each null hypothesis by identifying levels of significance using a probability factor of ($p = .05$). A Chi square analysis was used to detect patterns among variables and a Pearson's analysis was used to test for correlations among selected variables. Finally, open ended responses derived from the final question were treated as qualitative data. Responses were coded and analyzed for commonality of themes.

CHAPTER FOUR

FINDINGS AND RESULTS

A total of 181 surveys were distributed throughout a Southern California school district and 75 surveys were returned for a 41% response rate. A total of 134 surveys were distributed to third and fifth grade teachers throughout 14 primary schools and 48 surveys were returned for a 35% response rate. A total of 29 surveys were distributed throughout five middle schools and 14 surveys were returned for a 48% response rate. A total of 13 surveys were distributed to two high school and 13 surveys were returned for a 100% response rate.

The response rate may have been influenced by a number of factors. For example, teachers within the school district may have a self-selection bias towards teaching physical education, promoting physical activity, or participating in a study. A possibility as to why some chose not to complete the survey might be that teachers do not have time to participate in any outside work that is not mandatory. Participation in the survey was voluntary and site administrators do not have the authority to direct their staff to participate in something that is not stated

under union contract. It should be mentioned that there was a 100% response rate for the high schools. The researcher is an employee at one of the high schools that was randomly selected. These facts may pose a threat to internal and external validity.

All statistical results were derived from a total of 72 out of 75 returned surveys. Three returned surveys could not be included in the database because the participants identified themselves as currently teaching a grade other than 3, 5, 7, 9, or 11. All responses from the 72 valid surveys were inputted into SPSS for data analysis utilizing frequencies and correlations.

Respondent Characteristics

According to Table 1 below, 32 (44.4 percent) of the respondents held a California teaching credential specifically in physical education.

Table 1.

Do You Hold a California Teaching Credential Specifically in Physical Education?

	Frequency	Percent
Yes	32	44.4
No	40	55.6
Total	72	100.0

Table 2 below indicates the amount of training for physical education techniques each participant has received. Nine (12.5 percent) have received no training, 21 (29.2 percent) have received a little training, 20 (27.8 percent) have received some training, 2 (2.8 percent) responded as having between some and extensive training, and 19 (26.4 percent) responded to having extensive training.

Table 2.

How Much Training, If Any, Have You Received in Physical Education Instruction Techniques?

	Frequency	Percent
None	10	13.9
Little	21	29.2
Some	20	27.8
Between some and extensive	2	2.8
Extensive	19	26.4
Total	72	100.0

Table 3 shows that 26 (36.1 percent) of the participants in the study taught third grade, 21 (29.2 percent) taught fifth grade, 12 (16.7 percent) taught seventh grade, 4 (5.6 percent) taught ninth grade, 8 (11.1

percent) of the participants taught both ninth and eleventh grade, and 1 (1.4 percent) taught eleventh grade.

Table 3.

What Grade(s) Do You Currently Teach?

	Frequency	Percent
Third Grade	26	36.1
Fifth Grade	21	29.2
Seventh Grade	12	16.7
Ninth Grade	4	5.6
Ninth and Eleventh Grades	8	11.1
Eleventh Grade	1	1.4
Total	72	100.0

Descriptive Data

A frequency analysis was run for each remaining survey question. SPSS was used to calculate frequencies and percentages.

Table 4 indicates the average number of sessions and minutes per session spent by third and fifth grade students in a curriculum based physical education program. Responses ranged from no days per week, to five days per week. The average number of days spent was less than two (1.8) and

the average number of minutes spent per session was 23.1 (54 responses).

Table 4.

Average Number of Sessions and Minutes Per Session Spent by Elementary Students in a Curriculum-Based Physical Education Program?

N	Mean days	Mean minutes	Average minutes per two weeks
54	1.8426	23.10	85.0

Table 5 indicates the average number of sessions and minutes per session spent by seventh grade students in a curriculum based physical education program. The average number of days spent was a little over four (4.6) and the average number of minutes spent per session was 44.5 (11 responses).

Table 5.

Average Number of Sessions and Minutes Per Session Spent by Seventh Grade Students in a Curriculum-Based Physical Education Program?

N	Mean days	Mean minutes	Average minutes per two weeks
11	4.63	44.5	412.07

Table 6 indicates how many days per week students in the ninth grade participate in a curriculum-based physical education program. The average number of days spent was over four (4.8) (12 responses).

Table 6.

On Average, How Many Days Per Week Do Your Students Participate in a Curriculum-Based Physical Education Program?

Days per week	Frequency	Percent
3.00	1	8.3
5.00	11	91.7
Total	12	100.0

Table 7 below indicates how many minutes per session students the ninth grade participate in a curriculum-based physical education program. Responses ranged from 25

minutes per session, to 40 minutes per session. The average time spent was 32 minutes (12 responses).

Table 7.

On Average, How Many Minutes Do Your Students Spend Per Session as Stated Above?

Minutes per session	Frequency	Percent
25.00	2	16.7
30.00	5	41.7
35.00	3	25.0
40.00	2	16.7
Total	12	100.0

Table 8 indicates how many days per week students in the eleventh grade participate in a curriculum-based physical education program. Responses ranged from three days per week, to five days per week. The average number of days spent was 4.8 (9 responses).

Table 8.

On Average, How Many Days Per Week Do Your Students Participate in a Curriculum-Based Physical Education Program?

Days per week	Frequency	Percent
3.00	1	11.1
5.00	8	88.9
Total	9	100.0

Table 9 indicates how many minutes per session students the eleventh grade participate in a curriculum-based physical education program. Responses ranged from 25 minutes per session, to 40 minutes per session. The average time spent per session was 33.3 minutes (9 responses).

Table 9.

On Average, How Many Minutes Do Your Students Spend Per Session as Stated Above?

Minutes per session	Frequency	Percent
25.00	2	22.2
30.00	2	22.2
35.00	2	22.2
40.00	3	33.3
Total	9	100.0

Table 10 below indicates how many days per week each educator surveyed participate in a physical activity program. Only 61 valid responses were returned and thus used in the calculations. Responses ranged from zero days per week, to seven days per week. The median response appears to be three days per week (14 responses)

Table 10.

On Average, How Many Days Per Week Do You Personally Participate in a Physical Activity Program?

Days per week	Frequency	Percent
.00	7	11.5
1.00	4	6.6
2.00	9	14.8
3.00	14	23.0
4.00	7	11.5
5.00	18	29.5
6.00	1	1.6
7.00	1	1.6
Total	61	100.0

According to Table 11, 62 (86.1 percent) of surveyed participants felt that physical education is important to the overall health and development of students.

Table 12 indicates that almost one-half of the participants 35 (48.6 percent) feel that combating the epidemic of childhood obesity should be a focus within the educational system. While only 3 (4.2 percent) disagreed and 4 (5.6 percent) strongly disagreed with the statement. It should be noted that there were only 71 usable responses for this question.

Table 11.

Physical Education is important to the Overall Health and Development of Students.

	Frequency	Percent
Strongly Disagree	1	1.4
Disagree	1	1.4
Neither Agree or Disagree	1	1.4
Agree	6	8.4
Strongly Agree	62	87.3
Total	71	100.0

Table 12.

Combating the Epidemic of Childhood Obesity Should Be a Focus Within the Educational System.

	Frequency	Percent
Strongly Disagree	4	5.6
Disagree	3	4.2
Neither Agree or Disagree	9	12.5
Agree	21	29.2
Strongly Agree	35	48.6
Total	72	100.0

Table 13 below shows that exactly one-half, 36 (50 percent), of those surveyed feel that there is a correlation between physical activity level and academic achievement and only 1 (1.4 percent) strongly disagreed with the statement.

Table 13.

There is a Correlation Between Physical Activity Levels and Academic Achievement.

	Frequency	Percent
Strongly Disagree	1	1.4
Disagree	3	4.2
Neither Agree or Disagree	12	16.7
Agree	20	27.8
Strongly Agree	36	50.0
Total	72	100.0

Table 14 below shows the majority of the persons surveyed felt that physical education should be offered at all grade levels. 61 (84.7 percent) strongly agreed and another 7 (9.7 percent) agreed. While the remanding 4 (5.6 percent) participants stated otherwise.

Table 14.

Physical Education Should Be Offered at All Grade Levels.

	Frequency	Percent
Strongly Disagree	2	2.8
Neither Agree or Disagree	2	2.8
Agree	7	9.7
Strongly Agree	61	84.7
Total	72	100.0

Table 15 indicates that exactly one-half of those surveyed felt that physical education strategies can be achieved only through a comprehensive, curriculum-based physical education program. A total of 17 (23.6 percent) agreed with this statement and 19 (26.4 percent) strongly agreed with this statement. In addition another 19 (26.5 percent) remained neutral and neither agreed or disagreed.

Table 16 shows that responses given in response to the statement "Effective physical education instruction can be given only by a credentialed physical education teacher" were close to being evenly distributed.

Table 15.

Effective Physical Education Strategies Can Be Achieved Only Through a Comprehensive, Curriculum-Based Physical Education Program.

	Frequency	Percent
Strongly Disagree	7	9.7
Disagree	10	13.9
Neither	19	26.4
Agree or Disagree		
Agree	17	23.6
Strongly Agree	19	26.4
Total	72	100.0

Table 16.

Effective Physical Education Instruction Can Be Given Only by a Credentialed Physical Education Teacher.

	Frequency	Percent
Strongly Disagree	10	13.9
Disagree	17	23.6
Neither	16	22.2
Agree or Disagree		
Agree	18	25.0
Strongly Agree	11	15.3
Total	72	100.0

Table 17 below shows that a majority of the participants disagreed 22 (30.6 percent) or strongly disagreed 17 (23.6 percent) that any credentialed teacher is qualified to give physical education instruction.

Table 17.

Any Credentialed Teacher is Qualified to Give Physical Education Instruction.

	Frequency	Percent
Strongly Disagree	17	23.6
Disagree	22	30.6
Neither	9	12.5
Agree or Disagree		
Agree	14	19.4
Strongly Agree	10	13.9
Agree		
Total	72	100.0

Table 18 shows 24 (33.3 percent) of the surveyed participants strongly agreed that their students receive the minimum number of physical education instructional minutes as required by California Education Code. While 18 (25.) percent disagreed with the same statement.

Table 19 indicates that 23 (31.9 percent) of the educators surveyed strongly agreed that there is enough time in the school day to provide physical education instruction. While 13 (18.1 percent) disagreed and another 13 (18.1 percent) strongly disagreed with the statement.

Table 18.

My Students Receive the Minimum Number of Physical Education Instructional Minutes as Required by California Education Code.

	Frequency	Percent
Strongly Disagree	11	15.3
Disagree	18	25.0
Neither	5	6.9
Agree or Disagree		
Agree	14	19.4
Strongly Agree	24	33.3
Agree		
Total	72	100.0

Table 19.

There is Enough Time in the School Day to Provide Physical Education Instruction.

	Frequency	Percent
Strongly Disagree	13	18.1
Disagree	13	18.1
Neither	8	11.1
Agree or Disagree		
Agree	15	20.8
Strongly Agree	23	31.9
Agree		
Total	72	100.0

Table 20 below shows 22 (30.6 percent) of the participants agreed and 28 (38.9 percent) strongly agreed that physical education is the responsibility of the education system.

Table 20.

Physical Education is the Responsibility of the Education System.

	Frequency	Percent
Disagree	10	13.8
Neither	12	16.7
Agree or Disagree		
Agree	22	30.6
Strongly Agree	28	38.9
Agree		
Total	72	100.0

Table 21 shows that 49 (68.1 percent) of those surveyed strongly disagreed that students get enough physical activity without a physical education program at school.

Table 21.

Students Get Enough Physical Activity Without a Physical Education Program at School.

	Frequency	Percent
Strongly Disagree	49	68.1
Disagree	19	26.4
Neither Agree or Disagree	1	1.4
Agree	2	2.8
Strongly Agree	1	1.4
Total	72	100.0

Table 22 indicates that 24 (33.3 percent) of the participants felt that instructional minutes for physical education can be achieved only through a curriculum-based physical education program. While 19 (26.4 percent) remained neutral neither agreeing or disagreeing, and 18 (25.0 percent) disagreed with the statement.

, Table 22.

Instructional Minutes for Physical Education Can Be Achieved Only Through a Curriculum-Based Physical Education Program.

	Frequency	Percent
Strongly Disagree	5	6.9
Disagree	18	25.0
Neither Agree or Disagree	19	26.4
Agree	24	33.3
Strongly Agree	6	8.3
Total	72	100.0

The final question on the survey asked participants to check given categories of what they feel create the greatest barrier in achieving the state mandated minutes of physical education. Categories and response frequencies are as follows below:

- Low academic priority: 48 (66.7 percent) responded yes.
- Lack of administrative support: 43 (59.7 percent) responded no.
- Crowded classes: 49 (68.1 percent) responded no.
- Lack of skills or training: 44 (61.1 percent) responded no.

- Allowing physical education credits to be earned by participating in other classes or activities such as band or ROTC: 61 (84.7 percent) responded no.

Participants were also given an opportunity to respond to an open-ended question with their own personal thoughts of what create the greatest barrier in achieving the state mandated minutes of physical education. A total of 33 (45.8 percent) participants responded. Responses were coded for themes. A total of 21 (63.6 percent) of respondents reported that the greatest barrier was not having enough time in the academic day because too much emphasis is placed on academic. Responses also indicated that priority throughout the day is placed on other academic areas to improve annual test score, consistent with the responses documented above. It should be noted that all of the above respondents were third and fifth grade teachers and not secondary physical education teachers.

Hypothesis Testing

The three original hypotheses were tested, along with three additional hypotheses that were formulated after data was collected. The three additional hypotheses were formed when the collected data revealed further opportunities for testing. The relationships that were expected are as follows: (1) the number of minutes of physical activity would be greater among staff trained or credentialed in physical education; (2) attitudes regarding the importance of physical education would be greater among teachers credentialed in physical education; (3) minutes of physical activity and the attitudes regarding the importance of physical activity would be greater among teachers who engage in physical activity themselves; (4) Secondary grade levels would be more likely to meet mandatory minutes of physical activity as apposed to primary grade levels.

Stated as null hypotheses, these relationships will be tested as follows:

- Hypothesis 1: There is no relationship between having credentialed physical education teachers on staff and the number of minutes of physical activity instruction provided to students.

- Hypothesis ₂: There is no relationship between formal physical education training and the number of minutes of physical activity instruction provided to students.
- Hypothesis ₃: There is no relationship between the teachers' personal exercise pattern and the number of minutes of physical activity instruction provided to their students.

In addition to the original hypotheses above, two additional hypotheses were tested:

- Hypothesis ₄: There is no relationship between a teacher's exercise pattern and his/her attitude regarding the importance of physical activity.
- Hypothesis ₅: There is no relationship between grade level and minutes of activity per session.
- Hypothesis ₆: There is no relationship between a teacher's credential and his/her attitude regarding the importance of physical education and its relationship to the overall health and development of students.

According to Table 23, the average number of minutes spent by the students exercising varies in relation to the type of credential held. For students whose teacher holds a physical education credential, the average number of minutes spent exercising per day was 35.7, as compared to only 26.4 for the non-physical education credentialed teacher.

Table 23.

The Relationship Between the Credential Held by the Teacher and the Number of Minutes of Exercise Spent by Students.

Do you hold a California teaching credential specifically in physical education?	On average, how many minutes do your students spend per session as stated above?
Yes	35.7
No	26.4

According to Table 24, the value of Pearson's r for the relationship between the amount of training in physical education instructional techniques and the number of minutes spent by students exercising is .438 ($p=.001$). Therefore, the data indicate that there is a statistically significant correlation between the amount of training in

physical education instructional techniques and the number of minutes spent by students exercising.

According to Table 25, the value of Pearson's r for the relationship between the teacher's exercise pattern and the number of minutes spent by students exercising is $-.026$ ($p = .846$). Therefore, the data indicate that there is no statistically significant correlation between the teacher's exercise pattern and the number of minutes spent by students exercising.

Table 24.

The Relationship Between the Amount of Training in Physical Education Instructional Techniques and the Number of Minutes Spent by Students Exercising.

		How much training, if any, have you received in physical education instruction techniques?	On average, how many minutes do your students spend per session as stated above?
How much training, if any, have you received in physical education instruction techniques?	Pearson Correlation	1	.438
	Sig. (2-tailed)		.001
	N	72	59
On average, how many minutes do your students spend per session as stated above?	Pearson Correlation	.438	1
	Sig. (2-tailed)	.001	
	N	59	59

** Correlation is significant at the 0.01 level (2-tailed).

Table 25.

The Relationship Between the Teacher's Exercise Pattern and the Number of Minutes Spent by Students Exercising.

		On average, how many minutes do your students spend per session as stated above?	On average, how many days per week do you personally participate in a physical activity program?
On average, how many minutes do your students spend per session as stated above?	Pearson Correlation	1	-.026
	Sig. (2- tailed)		.846
	N	59	58
On average, how many days per week do you personally participate in a physical activity program?	Pearson Correlation	-.026	1
	Sig. (2- tailed)	.846	
	N	58	71

According to Table 26, the value of Pearson's r for the relationship between the teacher's exercise pattern and their perception that physical education is important to the overall health and development of students, is .043 (p= .722). Therefore, the data indicate that there is no

statistically significant correlation between the teacher's exercise pattern and their perception that physical education is important to the overall health and development of students.

According to Table 27, the value of Pearson's r for the relationship between grade level taught and minutes of physical activity per session is only .408 ($p=.275$). Therefore, the data indicate that there is no statistically significant correlation between grade level taught and minutes of physical activity per session.

Table 26.

The Relationship Between the Teacher's Exercise Pattern and Their Perception that Physical Education is Important to the Overall Health and Development of Students.

		On average, how many days per week do you personally participate in a physical activity program?	On average, how Physical education is important to the overall health and development of students.
On average, how many days per week do you personally participate in a physical activity program?	Pearson Correlation	1	.043
	Sig. (2-tailed)		.722
	N	71	71
Physical education is important to the overall health and development of students.	Pearson Correlation	.043	1
	Sig. (2-tailed)	.722	
	N	71	72

Table 27.

The Relationship Between Grade Level Taught and Minutes of Physical Activity.

		What grade(s) do you currently teach?	On average, how many minutes do your students spend per session as stated above?
What grade(s) do you currently teach?	Pearson Correlation	1	.408
	Sig. (2-tailed)		.275
	N	72	9
On average, how many minutes do your students spend per session as stated above?	Pearson Correlation	.408	1
	Sig. (2-tailed)	.275	
	N	9	9

According to Table 28, whether the respondent believes that physical education is important to the overall health and development of students varies with the type of credential held. For teachers who hold a physical education credential, 93.5% strongly agreed that physical activity is important as compared to only 82.5% of the non-

credentialed teachers who strongly agreed that physical activity is important.

Table 28.

The Relationship Between the Type of Credential Held, in Relation to Whether the Respondent Believes that Physical Education is Important to the Overall Health and Development of Students.

Do you hold a California teaching credential specifically in physical education?	Physical education is important to the overall health and development of students (mean score)
Yes	93.5
No	82.5

Summary of Findings

Several teachers (83.4 percent) reported that their students participate in a physical activity program for at least 30 minutes per session. However, the data indicates less than one-half (33.9 percent) of all teachers reported that their students participate in a physical activity program four to five days per week.

The data indicates that there is a statistically significant relationship between the type of credential held and the number of minutes spent by the students exercising. The data does show a significant correlation between the amount of training in physical education

instructional techniques and the number of minutes spent by students exercising. The data also shows a statistically significant relationship between the type of credential held, in relation to whether the respondent believes that physical education is important to the overall health and development of students.

The data indicates that there is no statistically significant correlation between the teacher's exercise pattern and the number of minutes spent by students exercising. The data also shows no statistically significant correlation between the teacher's exercise pattern and their perception that physical education is important to the overall health and development of students.

Finally, the data indicates that the greatest perceived barrier in administering physical activity instructional minutes is not having enough time in the school day. The lack of time occurs because more emphasis is being placed on academics.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was designed to determine to what extent physical education programs are being implemented in a Southern California school district, in an effort to increase physical activity and decrease obesity among students. This study also identified factors that either contributed to, or detracted from, implementation of curriculum-based education programs.

The instrumentation used for this study was a survey consisting of nineteen questions developed by the researcher and the project committee. The survey consisted of closed-ended, yes-or-no responses, frequencies, Likert scales, and one open-ended response. Each question represented one or more hypotheses. A random sample of third, fifth, seventh, ninth, and eleventh grades educators within a Southern California school district was selected to participate in the study. Data was collected on each teacher's education and background regarding physical education, the frequency of physical education instruction provided to his or her students, as well as his or her

perception of barriers to the implementation of the district's physical activity policy. Comparisons were made among teachers to detect any trends in and possible determinants of physical education.

The data were analyzed according to the procedures described in Chapter Three. The results as reported in Chapter Four are summarized below:

- 1) The data indicate the average number of minutes spent by the students exercising varies in relation to the type of credential held by the teacher. Thus, the data fails to accept the null hypothesis (H_1).
- 2) The data indicate that there is a statistically significant correlation between the amount of training in physical education instructional techniques and the number of minutes of physical activity provided. Thus, the data fails to accept the null hypothesis (H_2).
- 3) The data indicate that there is no statistically significant correlation between the teacher's exercise pattern and the number of minutes of physical activity instruction provided. Thus, the data accepts the null hypothesis (H_3).

- 4) The data indicate that there is no statistically significant correlation between the teacher's exercise pattern and their perception that physical education is important to the overall health and development of students. Thus, the data accepts the null hypothesis (H_4).
- 5) The data indicate that there is a statistically significant correlation between grade level taught and minutes of physical activity achieved per session. Thus, the data fails to accept the null hypothesis (H_5).
- 6) The data indicate that whether the respondent believes that physical education is important to the overall health and development of students varies with the type of credential held. Thus, the data fails to accept the null hypothesis (H_6).
- 7) The data indicate that the greatest perceived barrier in administering physical activity instructional minutes is not having enough time in the school day. The lack of time occurs because more emphasis is being placed on academics.

Conclusions

Within the limitations of this study, the following conclusions were drawn: Although the findings were not totally conclusive, it appears that the number of physical education instructional minutes provided to students varies in direct relationship to the type of credential held and the amount of training received by the teacher. Also, the mandated number of physical education instructional minutes is not being met at the primary school level and high school level but is being met at the middle level. For example, primary school teachers reported an average of 85 minutes of physical activity instruction every ten days. This data falls short of the mandated 200 minutes every ten days required by education code. Seventh grade teachers reported an average of 412 minutes of physical activity instruction every ten days. This data exceeds the mandated 400 minutes every ten days required by education code. Ninth grade teachers reported an average of 309 minutes of physical activity instruction every ten days. This data falls short of the mandated 400 minutes every ten days required by education code. Finally, eleventh grade teachers reported an average of 317 minutes of physical activity instruction every ten days. This data also falls

short of the mandated 400 minutes every ten days required by education code.

The reason for primary schools not meeting Education Code requirements seems to be a lack of time in the school day. The most common response among teachers surveyed was that time is limited and more emphasis is being placed on academics. Therefore, it is hard to find time to allow for physical education.

Secondary schools, however, are not experiencing this same problem because physical education is a required class for grades seven through ten. However, the data indicate that high school students are not achieving the mandated minutes of physical activity instruction. The above information may nevertheless warrant future research to discover commonalities and differences of instructional practices and patterns between middle school and high school physical education classes.

Recommendations for Further Research

As a result of the present study, the following recommendations are made:

- 1) This study should be replicated with a larger sample size of teachers, schools sites, and school districts in different geographical locations.
- 2) Further research should be done to identify the role physical activity and well-being plays in student academic achievement.
- 3) Further research should be done to identify the impact physical education instruction provided through school system's has on lifelong physical activity patterns and overall well-being.
- 4) Further research should be done to identify common knowledge, attitudes, and beliefs among school site and district-level administrators about the importance of physical education and the role it plays in student achievement.
- 5) Further research should be done to identify how training in physical education instruction, provided to teachers and administrators, may

impact the quality and frequency of said instruction given to students.

- 6) Further research should be designed to enhance the level of participant cooperation thus, yielding a larger sample size and minimizing one of the limitations found in this study.
- 7) Further research should be designed to better secure a higher level of honesty regarding responses given by the population sampled.
- 8) Future research should be done to identify commonalities and differences of instructional practices and patterns between middle school and high school physical education classes.

Recommendations for Future Practices

As a result of the present study, the following recommendations for future practices are made:

- 1) School districts should implement curriculum based physical education programs at the primary school level.
- 2) School districts should designate specific times within the school day to allow for physical

education instruction in the primary school levels.

- 3) School districts and individual school sites should be held accountable for meeting mandated physical education instructional minutes as prescribed by California Educational Code.
- 4) Class bell schedules for physical education at the high school level should be recalculated to allow adequate time for dressing out, taking role, and physical activity participation.

APPENDIX A
LETTER OF INFORMED CONSENT

Dear Educator,

I work as a health teacher at AB Miller High School, and am currently collecting data for my master's thesis. I would greatly appreciate your help.

Grades three, five, seven, nine, and eleven are the targets for this study. The data provided from your survey will help to determine the frequency of physical activity students are receiving within your district. The survey will also provide data on current attitudes and beliefs about physical education.

This study is being conducted under the supervision of Dr. Kim Clark in the Department of Health and Human Ecology at California State University San Bernardino (CSUSB) located at 5500 University Parkway, San Bernardino, CA 92407-2397, telephone (909) 537-5323. The study has been approved by the Institutional Review Board at CSUSB.

All responses provided will be kept confidential. Participation in this study is strictly voluntary, and you may withdraw at any time without repercussion.

The survey should take no more than ten minutes of your time. Please return your completed survey, sealed in the envelope provided, to your site administrator or directly to me via district mail.

Finally, the results of this study will be provided to your site administrator some time around the beginning 2008. You may also contact me at AB Miller High School located at 6821 Oleander Avenue, Fontana, CA 92334-5085, telephone (909) 357-5800, for your own personal copy of results at that time if you wish.

I sincerely appreciate your time and support.

Stephen Mann
AB Miller High School
asmann@verizon.net
(909) 948-1329

APPENDIX B
SURVEY INSTRUMENT

Physical Education Instruction Survey

The following survey is being conducted by high school health teacher Stephen Mann, in partial completion of his Master's Degree in Education. Your voluntary participation is requested and will be greatly appreciated. All responses will be kept confidential.

Please circle your responses.

1) What grade(s) do you currently teach? 3 5 7 9 11

2) Do you hold a California teaching credential specifically in physical education? YES NO

3) How much training, if any, have you received in physical education instruction techniques? None Little Some Extensive

4) On average, how many days per week do your students participate in a curriculum-based physical education program?

(Please list all grade levels you currently teach)

Grade _____ 0 1 2 3 4 5

Grade _____ 0 1 2 3 4 5

5) On average, how many minutes do your students spend per session as stated above?

(Please list all grade levels you currently teach)

Grade _____ _____ minutes per session.

Grade _____ _____ minutes per session.

6) On average, how many days per week do you personally participate in a physical activity program?

_____ days per week.

Please respond to the following statements using the following scale.

1= Strongly disagree

2= Disagree

3= Neither agree or Disagree

4= Agree

5= Strongly agree

7) Physical education is important to the overall health and development of students.

1 2 3 4 5

8) Combating the epidemic of childhood obesity should be a focus within the educational system.

1 2 3 4 5

9) There is a correlation between physical activity level and academic achievement.

1 2 3 4 5

10) Physical education should be offered at all grade levels.

1 2 3 4 5

11) Effective physical education strategies can be achieved only through a comprehensive, curriculum-based physical education program.

1 2 3 4 5

12) Effective physical education instruction can be given only by a credentialed physical education teacher.

1 2 3 4 5

13) Any credentialed teacher is qualified to give physical education instruction.

1 2 3 4 5

14) My students receive the minimum number of physical education instructional minutes as required by California Education Code.

1 2 3 4 5

15) There is enough time in a school day to provide physical education instruction.

1 2 3 4 5

16) Physical education is the responsibility of the education system.

1 2 3 4 5

17) Students get enough physical activity without having a physical education program at school.

1 2 3 4 5

18) Instructional minutes for physical education can be achieved only through a curriculum-based physical education program?

1 2 3 4 5

19) Which of the following do you think create the greatest barrier in achieving the state mandated minutes of physical education? (Please check all that apply)

_____ Low academic priority. _____ Lack of administrative support.

_____ Crowded classes. _____ Lack of skill or training.

_____ Allowing physical education credits to be earned by participating in other classes or activities such as band or ROTC.

_____ Other (Please respond in the space provided on the next page)

(#19 continued)

Thank you for participating in this survey. Please seal your responses in the provided envelope and return to your site administrator or to the researcher via district mail.

REFERENCES

American Academy of Child and Adolescent Psychiatry, 79.

(2001, January). *Obesity in Children and Teens*.

Retrieved April 11, 2005, from

<http://www.aacap.org/publications/factsfam/79.htm>

American Cancer Society. (n.d.). *Food and Fitness*.

Retrieved August 8, 2005, from

http://www.cancer.org/docroot/PED/ped_3.asp

Association for the Study of Obesity. *The Social and Psychological Consequences of Obesity*. Retrieved

May 18, 2005, from

<http://www.aso.org.uk/mlw/nfdefault.asp?menuid=160&header=yes>

Barroso, C., McCullum-Gomez, C., Hoelscher, D., Kelder,

S., & Murry, N. (2005, October). Self-reported

barriers to quality physical education by physical

education specialist in Texas. *Journal of School*

Health, 75(8), 313-319. Retrieved October 2, 2007, from

CINAHL Plus with Full Text Database.

California Department of Education: Physical Education Requirements, State Board of Education Policy #99-03, June 1999. Retrieved February 7, 2007, from <http://www.cde.ca.gov/be/ms/po/policy99-03-june1999.asp>

California Healthy Kids Survey, Technical Report. (Fall 2005 - Spring 2006). Retrieved February 14, 2007, from http://www.wested.org/pub/docs/chks_bsearch.html

Centers for Disease Control and Prevention. (2007, March 16). *Overweight and Obesity: Childhood Overweight Contributing Factors*. Retrieved March 4, 2007, from http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/contributing_factors.htm

Centers for Disease Control and Prevention. (2007, March 16). *Overweight and Obesity: Health Consequences*. Retrieved March 4, 2007, from <http://www.cdc.gov/nccdphp/dnpa/obesity/consequences.htm>

Connell, D.B., Turner, R.R., and Mason, E.F. (1985).

Summary of the findings of the school health education evaluation: Health promotion effectiveness, implementation, and cost. *Journal of School Health*, 55, 316-321.

Davis, M.R. (2005, January). Child Nutrition Act requires districts to put "wellness" programs in place by 2006-07 school year. *Education Week*. Retrieved April 26, 2004, from

http://www.nsba.org/site/doc_cosa.asp?TRACKID=&VID=50CID=454&DID=35141

DeNoon, D. (2004, August 25). U.S. Launches Obesity Attack Plan. *Web MD Medical News*. Retrieved July 31, 2005, from <http://my.webmd.com/content/article/93/102231.htm>

Durlak, J. A. (1997). *Issues in Clinical Child Psychology: Successful Prevention Programs for Children and Adolescents*. New York: Plenum Press. Guidelines for School Health Programs to Promote Lifelong Healthy Eating. (1996, June). Retrieved May 1, 2005, from <http://wonder.cdc.gov/wonder/prevguid/m0042446/m0042446.asp#head00100000000000>

Heffernan, M. (2002, December). *Fitness Connected to Academic Success*. California Association for Health, Physical Fitness, Recreation and Dance. Retrieved March 3, 2007, from <http://fve.egsd.k12.co.us/pe/fitness/fitness.html>

Jonides L., Buschbacher V., and Barlow S. Management of Child and Adolescent Obesity: Psychological, Emotional, and Behavioral Assessment. (2002, July) *Pediatrics*, 110 (1), 215-221. Retrieved July 7, 2005, from <http://pediatrics.aappublications.org/cgi/content/full/110/1/S1/215#SEC4>

Medical News Today. (2005, April 11). *Certain weight control behaviors may precipitate obesity among adolescent girls*. Retrieved May 9, 2005, from <http://www.medicalnewstoday.com/medicalnews.php?newsid=22628>

National Youth Risk Behavior Survey. (2005). Retrieved February 5, 2007 from <http://www.cdc.gov/healthyYouth/yrbs/subgroup/2005yrbssexgroup.pdf>

Sturm, R. (2005, April). Childhood Obesity-What We Can
Learn From Existing Data on Societal Trends, Part 2.
Preventing Chronic Disease. Retrieved May 2, 2005,
from www.cdc.gov/pcd/issues/2005/apr/04_0039.htm