AN EXAMINATION OF THE EFFECTIVENESS OF THE DYNAMIC PHYSICAL EDUCATION CURRICULUM AT CENTENNIAL MIDDLE SCHOOL

by

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ABSTRACT

This study examined the effectiveness of the Dynamic Physical Education Curriculum at Centennial Middle School in the Kyrene School District. The researcher measured effectiveness by administering a cognitive, fitness, and affective pretest and posttest assessments.

The population that was studied was composed of sixth, seventh, and eight grade co-educational students. This study evaluated the Dynamic Physical Education Program in the three learning domains, the cognitive, the psychomotor, and the affective. The total number of the participants for the cognitive multiple choice test was 111, 50 for the psychomotor fitness test and 109 for the attitude survey. Data was collected over a six week period during February and March, 1996. The differences between the mean pretest and posttest measurements were analyzed using a t-test of significance.

The data indicated that students who participated in the Dynamic Physical Education Program showed positive changes in their posttest scores. This study supports the notion that the benefits of physical education are not natural by-products of random participation. Students in the Dynamic Physical Education Curriculum at Centennial Middle School have developed the knowledge, skills, practices, and values that will assist them to incorporate physical activity into a healthy lifestyle.
# TABLE OF CONTENTS

## CHAPTER

1. **THE PROBLEM** .................................................. 1  
   Introduction to the Study ........................................ 1  
   Development of the Problem ..................................... 1  
   Need for the Study ............................................... 3  
   Purpose of the Study ............................................ 4  
   Research Question .............................................. 5  
   Definitions of Terms .......................................... 5  

2. **LITERATURE REVIEW** ........................................ 6  
   Introduction ................................................... 6  
   Role of Physical Education in the Secondary School .......... 7  
   Current Practices and Directions ................................ 9  
   Curriculum Theory and Practical Factors ...................... 10  
   Innovative Program Models ................................... 11  
   Developing a Quality Instructional Program .................. 13  
   Dynamic Physical Education Curriculum at Centennial Middle School ............................................. 16  
   Summary ....................................................... 19  

3. **METHODOLOGY** ............................................. 20  
   Introduction ................................................... 20
# Table of Contents

Research Design ................................................................. 20  
Population and Sample ......................................................... 21  
Assumptions ........................................................................ 21  
Limitations .......................................................................... 22  
Procedure ............................................................................ 22  
Instrumentation .................................................................... 23  
Method of Analysis .............................................................. 27  

4. PRESENTATION AND ANALYSIS OF THE DATA .................. 28  
   Introduction ........................................................................ 28  
   Cognitive Multiple Choice Results .................................... 28  
   Psychomotor Fitnessgram Test Results ............................... 29  
   Affective Survey Results .................................................... 33  

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .......... 36  
   Summary ........................................................................... 36  
   Conclusions ...................................................................... 37  
   Recommendations ............................................................ 38  

REFERENCES ........................................................................ 41  
APPENDIX A  COGNITIVE MULTIPLE CHOICE TEST .................. 43  
APPENDIX B  PSYCHOMOTOR FITNESSGRAM TEST .................. 46  
APPENDIX C  STANDARDS FOR HEALTHY FITNESS ZONE .......... 48  
APPENDIX D  AFFECTIVE SURVEY ............................................ 51
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Gender Distribution for Cognitive Test</td>
<td>29</td>
</tr>
<tr>
<td>Table 2</td>
<td>Data Responses for Cognitive Test</td>
<td>29</td>
</tr>
<tr>
<td>Table 3</td>
<td>Data Responses for Fitnessgram Shoulder Stretch for Girls</td>
<td>30</td>
</tr>
<tr>
<td>Table 4</td>
<td>Fitnessgram Shoulder Stretch Results for Boys</td>
<td>30</td>
</tr>
<tr>
<td>Table 5</td>
<td>Fitnessgram Shoulder Stretch Results for Girls and Boys</td>
<td>31</td>
</tr>
<tr>
<td>Table 6</td>
<td>Fitnessgram Test Results for Girls</td>
<td>31</td>
</tr>
<tr>
<td>Table 7</td>
<td>Fitnessgram Test Results for Boys</td>
<td>32</td>
</tr>
<tr>
<td>Table 8</td>
<td>Fitnessgram Test Results for Boys and Girls</td>
<td>33</td>
</tr>
<tr>
<td>Table 9</td>
<td>Affective Survey Results for Pretest and Posttest</td>
<td>34</td>
</tr>
<tr>
<td>Table 10</td>
<td>Affective Survey Results</td>
<td>34</td>
</tr>
</tbody>
</table>
CHAPTER 1

THE PROBLEM

Introduction

Physical education is a sometimes misunderstood discipline in secondary schools today. Many people mistakenly equate the physical education program with the school athletic program. Physical education is an educational process that focuses on increasing student's knowledge and affecting student's attitudes and behaviors relative to physical activities. The process of physical education is an important concern of schools. Physical education teachers have a tremendous responsibility to develop and teach from a systematically organized curriculum, for students in kindergarten through grade 12, that favorably influences all students and enhances their physical activity habits. Today's students deserve a well conceived and well developed physical education program, because it can improve their quality of life and have an impact on their way of living. Physical education instruction is the passing of information, skills, and attitudes, from one person to another. This passing on of knowledge, skills, and attitudes, is definitely a legitimate educational concern (Darst & Pangrazi 1985).

Development of the Problem

Physical education is that phase of the general education program that contributes, primarily through movement experiences, to the total growth and development of each
student. It should be an instructional program that gives adequate and proportional attention to all learning domains, psychomotor, cognitive, and affective (Darst & Pangrazi 1985).

The overall goal of education and of physical education in particular is to help students achieve optimum growth and development. The broad aim of education can be defined as developing in children the ability to achieve satisfaction as responsible, contributing citizen of society. To accomplish this goal, physical education should focus on and maximize the unique contributions it makes to the individual, concentrating on the educational outcomes that are not likely to be achieved through other subject areas in the total school curriculum (Dauer & Pangrazi 1989).

The first of these unique educational outcomes is the promotion of physical development and the achievement of personal physical fitness. A second goal is developing competency in a wide variety of physical skills, which allows students to function effectively in physical activities. A third outcome is establishing an understanding of movement and the principles of motor skill performance. If these goals are not accomplished in physical education, they will not be realized elsewhere in the curriculum (Darst & Pangrazi 1985).

Secondary school physical education has been influenced by many trends, organizations, and issues over a long period of time. Sound curriculum programs cannot be developed unless we understand the impact of past events and the current concerns of society. Educational programs are responsive to the needs of society, and physical
education has passed through periods of change due to historical and cultural events. The combination of these trends and issues results in a physical education program that is well balanced and offers something for all students. Motor skill development is taught in a clear, concise manner, so students learn proper movement patterns. Wellness concepts are intertwined and integrated with other parts of the curriculum and discussed regularly in order to enhance student understanding. Today, no single phase of physical education can be ignored at the expense of another. Physical education must be a systematic and progressive program that reaches out to students from all walks of life (Pangrazi 1982a).

The Dynamic Physical Education Curriculum and Instruction for Secondary School Students at Centennial Middle School is one method of presenting physical education in the schools. This curriculum model is based on the premise that curriculum should be integrated and sequenced starting with kindergarten and continuing through the senior year of high school. The objective of this model is to provide an articulated curriculum and instruction model for secondary schools (grades 6-12) physical educators. This model has been touted by Arizona State University nationally. The Kyrene School District has shown interest in this study to see if it is an effective model to use district wide.

Need for the Study

Changes in physical education occur on a regular basis as the body of knowledge increases and the desires of society change. The concern with the lack of physical fitness in students is escalating and physical educators must accept the challenge. Physical
education needs to focus on fitness for students and offer the most comprehensive set of activities for developing fitness in a meaningful and attractive manner. In addition, the fitness component of physical education is focusing on the process of active participation of students rather than on the pursuit of fitness awards. This focus offers the physical educator an opportunity to be seen as a catalyst in changing life styles of students (Darst & Pangrazi 1985).

There is a concern among professionals in physical education about the need to enhance the effectiveness of instruction. Students need a positive, success oriented program rather a negative, authoritarian situation that focuses on failure. Teachers should use an active teaching role, including demonstrating, participating, encouraging, giving feedback, and positive reinforcement. When students leave the physical education environment, they should have a good feeling about physical activity and the desire to return for more. The specific reason for the need of this study related to Centennial Middle School is to determine if the Dynamic Physical Education Program is an effective middle school model to use at Centennial Middle School, and in the Kyrene School District. The Dynamic Physical Education Program at Centennial has not been evaluated or assessed before.

**Purpose of the Study**

The purpose of this study was to examine the effectiveness of the Dynamic Physical Education Curriculum at Centennial Middle School in the Kyrene School District.
Research Question

Is the Dynamic Physical Education Curriculum model an effective way to teach physical education to middle school students?

Definitions of Terms

**Healthy Fitness Zone.** Referenced standards in the Fitnessgram Test for boys and girls, used to evaluate fitness performance, by age level.

**Individualized Educational Program (IEP).** A specific program for each disabled student. In addition to the mainstreaming of students in normal classes, the law mandates the preparation of the child’s present status, program objectives, learning activities, and evaluation procedures (Darst & Pangrazi 1985).

**Population.** Sixth to eighth grade middle school students. Students' ages range from 11 to 14.

**Public Law 94-142.** The Education of All Handicapped Children Act. Signed in 1975 by President Ford. This law, which has affected secondary education, ensures that all children with handicaps receive an appropriate public education that serves their unique needs. Physical education has been specified as an important part of the handicapped child’s curriculum or individualized education program (IEP) (Burkett 1980).

**Title IX.** A law which is part of the Educational Amendments Act of 1972, based on the principle that school activities and programs are of equal value for both sexes, and that students should not be denied access to participation in school activities on the basis of sex (Wilson & Altieri 1978).
CHAPTER 2

LITERATURE REVIEW

Introduction

The topics and sequence of topics to be described in the literature review are, the role of physical education in the secondary school, current practices and directions, curriculum theory and practical factors, innovative program models, developing a quality instructional program, and the Dynamic Physical Education Curriculum at Centennial Middle School. Many people remember physical education as a time for playing some type of game on a daily basis. Little or no organized teaching occurred in the process. Physical Educators simply rolled out the ball and let students play a game for three to five weeks. George Leonard (1977), noted author and philosopher, describes a traditional physical education class in the following manner:

Students scramble into their gym clothes and then stand at attention for dress inspection. Next, a period of group calisthenics including push-ups, jumping jacks, and sit-ups is followed by a lap around the track. Students then choose up sides and move on to the traditional game of the day, i.e., flag football, basketball, softball, and volleyball. The final activity of the day is the shower and in many schools, a shower inspection to make sure that all students have participated. Coed activities and individualized instruction are unheard of in these situations. (2)

On the other side of the coin the scene is quite different in certain schools across the country. Secondary students are getting the opportunity to choose activities of interest. Instructional procedures include learning stations in which students work on different tasks at different levels. Teachers move about, giving information to, correcting,
encouraging, and praising students. Activities are arranged in a systematic progression that enables all students to find personal satisfaction and success. More highly skilled students are provided with challenging activities that force them to expand their physical limits (Darst & Pangrazi 1985).

The physical activity knowledge, attitudes, and behaviors of people are strongly influenced by the type of physical education program they experience. In developing an effective physical education program we must start with a clear understanding of what physical education is and what it should be doing in schools.

The Role of Physical Education in the Secondary School

The process of physical education is an important concern of schools. Physical education teachers have a tremendous responsibility to develop and teach from a systematically organized curriculum, for students in kindergarten through grade 12, that positively influences all students and enhances their physical activity habits. Today’s students deserve a well-conceived and well-developed program of physical education, because it can improve their quality of life and have an impact on their way of living (Dauer & Pangrazi 1989).

The most important goal of a secondary physical education program should be to help students incorporate some form of physical activity into their life-style (Corbin & Lindsey 1983). Accomplishment of this goal requires curriculum, instruction, and teachers to have a positive effect on students’ knowledge, attitudes, and skill behaviors relative to physical activities. This does not mean that the secondary program should avoid other
goals in different areas. It does mean that this most important goal should be emphasized. The ultimate measure of success is the number of students who incorporate physical activities such as exercise, sport, dance, and outdoor activities into their life-style. As Siedentop (1980) states:

We teach because we hope to influence not only the present abilities of students but also their future behavior and predisposition's to continue to engage in our subject matter. We are interested in the growth of the student now, but education just for now makes little sense. Most of what we hope to provide for the student is really directed toward the future of the student. We naturally want the student to learn and perform well now, to have fun now, and to enjoy the learning experience now. But, the nature of education has always been that it attempts to do things now that will have long-term effects, that is, that will affect the future behavior of the student. We are interested, in the final analysis, in what happens to students after they finish our course; indeed after they finish all formal education. (267)

Without proper planning and systematically arranging the learning environment, the probability of developing positive student attitudes and physically active lifestyles is greatly reduced. Secondary curriculum plans and instructional strategies should be concerned with developing learning environments that help students to enjoy physical activities for a lifetime. Successful programs are developing quality curriculum and instruction for all students. In these programs, students are being given a choice of activities, exposure to a wide variety of activities, more opportunities for in-depth instruction, and access to organized counseling procedures. The overall atmosphere has been changing slowly from a negative to a positive orientation. Students need to learn to enjoy physical activity (Bain 1978).
Current Practices and Directions

Secondary physical education programs are continually evolving and changing. Lifetime sports, outdoor adventure activities, martial arts and a renewed emphasis on physical fitness have expanded the secondary curriculum. Health related knowledge concepts, running, aerobic dance, and weight training are highly visible signs of how the fitness renaissance has affected school programs. The arrangement and packaging of activities has also changed. Shorter introductory units at the middle school and junior high school level, and longer specialized units at the high school level are common (Darst & Pangrazi 1985).

Title IX of the 1972 Educational Amendments and Public Law 94-142 have created some interesting situations concerning coeducational classes and handicapped students. There are clear advantages to coeducational programs in the areas of social development, activity offerings, and instructional quality. Teachers should be responsible for all students, regardless of ability, sex, or race. In addition to Title IX, conceptual, interdisciplinary, and independent study courses have become popular in many school programs. Also, off campus facilities in the communities are being used for such activities as golf, bowling, skiing, and sailing.

Some areas of concern regarding physical education programs include an overemphasis on coaching, large class sizes, limited facilities, and competition sports industry. Educators are constantly analyzing the values and problems of secondary physical education as the profession continues to move toward excellence. The National
Association for Sport and Physical Education have developed the National Standards for Physical Education. The purpose of this document is to establish content standards for the physical education program that clearly identify consensus statements related to what a student should know and be able to do as a result of a quality physical education program. This document also establishes teacher friendly guidelines for assessment of the content standards that are consistent with instructionally integrated orientations (National Association for Sport and Physical Education 1995).

Curriculum Theory and Practical Factors

The curriculum is the what and why of education, as opposed to the how, which is the instruction. The curriculum contains the scope, structure, and the sequence of learning opportunities within each year. Progression of instruction is provided horizontally (throughout the year) and vertically (throughout all grades).

The curriculum theory is a set of interrelated ideas that provide a basis for making decisions about objectives, content, sequence, and evaluation. The curriculum is usually arranged around one major theory called an organizing center. The most common organizing center for secondary physical education is movement forms, or activity centered theory. Units focus on lifetime sports, team sports, aquatics, dance, physical fitness, recreational games, and outdoor adventure (Benson 1982).

Many practical factors influence the type of curriculum that can be developed in each situation. The people, the programs, and the facilities, will determine whether the factors are positive or negative. These factors must be carefully analyzed with the attitude
that negative factors can be turned into positive factors over a period of time (Darst & Pangrazi 1985).

Innovative Program Models

A curriculum program model is the arrangement of learning activities over the entire year. There are many models that exist across the United States. A common model in the middle school is to offer two units during a nine week grading period. One unit would be five weeks and the other four weeks. In this model the students take eight units per year (Darst & Pangrazi 1985). An example of this model is as follows:

First 9 weeks  Soccer  (5wks)
              Flag Football  (4 wks)
Second 9 weeks  Tennis  (5wks)
              Basketball  (4wks)
Third 9 weeks  Volleyball  (5wks)
              Tumbling  (4 wks)
Last 9 weeks  Track  (5wks)
              Softball  (4wks)

Another model uses short two and three week units that offer students 12 to 18 different activities during the year. The following is an example:

Weeks  Activity
1-3    Swimming
4-6    Volleyball
7-9  Tennis
10-12 Flag football
13-15 Dance
16-18 Basketball
19-21 Tumbling
22-24 Badminton
25-27 Recreational games
28-30 Speedaway
31-33 Track and field
34-36 Softball

There is a strong argument for short units because of the developmental characteristics of middle school students. These students, who are going through puberty, a rapid growth spurt, and a period of slow motor development, need successful experiences with a wide variety of activities. Longer units can lock students into a frustrating and boring experience with repeated failure over a long period of time. Variety and novelty in a success oriented atmosphere are important motivational keys for this age. Students can find success in short units when the emphasis is on exposure and on learning about one’s personal strengths and weaknesses (Darst & Pangrazi 1985). Students should receive physical education on a daily basis or at least on a time basis equivalent to all other subjects. The teacher to student ratio should be consistent with academic class ratios (Pangrazi 1982 b).
The daily lesson plan for middle school should include an introductory or warm-up activity (3-5 min), a physical fitness routine (10-15 min), and a lesson focus and game activity (25-30 min). This format should be consistent and an outgrowth of the K-6 curriculum. A consistent instructional format within each class provides teachers and students with a measure of stability (Darst & Pangrazi 1985).

**Developing a Quality Instructional Program**

The policies, procedures and equipment are important aspects of implementing a high quality program. Staff members must come to agreement on many issues, and all of these issues should be in keeping with the program’s objectives.

Planning is the first step in developing a quality instructional program. Unit plans and daily lesson plans are necessary for executing and improving instruction. Planning is unique to each teacher, but there are common essential elements of instruction that must be thought out. Communication skills, instructional devices, management procedures, motivational techniques, and disciplinary procedures require specific planning to develop a quality physical education program. Teachers who fail to plan are usually planning to fail. (Pangrazi 1982b).

Motivation, management, and discipline mean different things to different people. These areas are intertwined and are influenced by both curriculum and instruction. Effective teachers have found that a positive approach to these areas works better than a negative approach. If teachers do their jobs using a positive approach, students are more likely to become active, and cooperative participants, because physical education class will
be an enjoyable place to learn new skills. Teachers with a positive attitude usually feel better about their profession and are more motivated to continue improving the teaching process (Darst & Pangrazi 1985).

Instructional strategies provide an overall direction for the students in the educational environment. A middle school Physical education teacher should develop a teaching comfort zone that includes command, task, contract, guided discovery, and problem solving strategies. Each strategy has advantages that can be useful with certain students, with certain activities, and with certain conditions. Management time should be minimal, and transitions should occur smoothly. Student performances should be monitored and learning activities sequenced in a progression. All of these goals can be accomplished with a variety of instructional strategies (Medley 1977).

Quality teaching results when curriculum is well planned and sequenced. Activities should be planned on a daily basis to assure continuity of instruction. Teachers should evaluate their own teaching behavior and set goals for improvement and change. The result usually is an instructor who is confident, well organized, and acutely aware of the teaching process (Pangrazi 1982 b).

The primary goal in grading students is to enhance the educational process. Students should grow from the situation, and teachers should use grading as an effective means of objective evaluation. Evaluation results can be used to check the effectiveness of the instructional program as well as student progress. Teachers need to make a
consistent effort to consider how effectively their grading program is reaching their desired aims and objectives (Darst & Pangrazi 1985).

Intramural, athletics, and sport clubs should be included in every middle school program. Each area offers unique benefits to students so that everyone has the opportunity to participate in a sport. The program should be of equal opportunity to all students and organized so that the educational experience is easily available (Dauer & Pangrazi 1989).

Liability is a teacher’s responsibility to perform a duty to a particular group. Teachers must develop a safe environment for students while they are participating in organized activities. Careful planning and well organized instruction make the teacher less vulnerable to a suit. Equipment and facilities should be checked regularly, repaired, or replaced to prevent accidents. Safety involves removing possible dangerous situations and preventing accidents before they occur (Dauer & Pangrazi 1989).

No school curriculum can stand by itself. Public relations are important if teachers expect parents and the community to support the physical education program. Teachers must become involved in improving the image of physical education and in preparing instructional and promotional material. How teachers dress, talk, and interact creates an image of the typical physical education teacher. Public relations demands hard work and a concern for the future of the profession. Physical education needs to be taught to students daily and should be a high quality program. In order to promote a lifetime of health and physical fitness, students need to participate in a quality physical education every day.
The Dynamic Physical Education Curriculum at Centennial Middle School

The physical education program at Centennial is appropriately entitled "The Dynamic Physical Education for Middle School Students." The researcher believes the program is dynamic because it allows all students to participate and succeed at their own level, including students with physical and mental disabilities.

The skills are taught in order, from simple to complex, in an environment removed of pressure and/or a fear of failure. This environment allows each student to experience success and progress at his or her own rate.

Physical education students at Centennial receive 45 minutes of class time daily. Briefly, the four instructional parts of the lesson and major purposes of each are as follows:

1. Introductory Activity: occupies 2 or 3 minutes for the purpose of physically preparing students and ensuring that they immediately become involved in an activity when entering the gym or activity area.

2. Fitness Development Activity: this part of the lesson takes 7 to 9 minutes. The purpose of this section is to develop physical fitness. The activities are demanding, progressive in nature, and exercise all parts of the body.

3. Lesson Focus Activity: the purpose of the lesson focus is to help students attain major program objectives such as hand-eye coordination, body management, and basic and specialized skills. The lesson focus uses 15-20 minutes of the daily lesson.
4. Game Activity: this part of the lesson takes place at the closing of the lesson, using the last 5-6 minutes of the period. The game is the culminating activity for practicing skills, with enjoyment the overriding consideration.

As a physical education teacher at Centennial, the goal is to establish the following attitudes and climate in my class. The students will:

1. incorporate physical activity into their lifestyle.
2. display a positive attitude toward physical activity.
3. maintain an appropriate level of health-related physical fitness.
4. develop their physical skill level.
5. acquire knowledge about sports, games, dance, exercise, and fitness.
6. develop social skills that will enable them to be responsible citizens.
7. feel good about their physical self.
8. develop an understanding that everyone is a winner, everyone counts, everyone is important.
9. develop an understanding that class activity and games are not designed to produce a group of winners and a group of losers.
10. feel that winning is always related to doing one’s best, acquiring and improving skills, and enjoying oneself during physical activity.
11. understand that fitness can be exciting, not everyone can be a gymnast or run the fastest, but everyone can be physically fit through hard work
12. feel that P.E. is fun!
Goals number 1, 3, 4, and 11, are established in the fitness development activity. Goals number 2, 5, and 10, are established in the lesson focus activity. Goals number 6, 7, 8, 9, and 12, are established in the game activity.

Centennial Middle School offers a flexible program to its middle school physical education students. Each instructor will teach three two week units with the students being allowed to pick which sport they want to participate in. This means that the students are allowed to select the classes that they are interested in. These classes are three (2 week) units that comprise a six week time frame. After the six week period has expired, each student again is able to pick the classes that he/she desires. This year the researcher taught the following units for the first six weeks of 1995.

First two weeks       Basketball
Second two weeks     Hockey
Third two weeks      Softball

The students at Centennial Middle School are the only students in the Kyrene School District who are able to choose the activities in which they desire to participate. Giving students choices and allowing them to make decisions, teaches the young adults about responsibility and at the same time provides a challenging and fun experience for the students (Bacon 1990).

Students are making choices and are also learning to be more responsible individuals as a result of this. Students feel that by deciding what class they want to take,
they are making decisions and are allowed to use their own minds in the process of deciding.

The weekly format at Centennial Middle School consist of the following components:

- **Monday and Wednesdays**: introduction, fitness and lesson focus.
- **Tuesdays and Thursdays**: introduction, fitness and games
- **Fridays**: fitness day

**Summary**

A quality physical education program is of primary importance to educators, students, and parents. There is a great concern among professionals in physical education about the need to enhance the effectiveness of instruction. An understanding of requisite knowledge for effective teaching needs to be combined with a wealth of motor skills and movement activities. In addition, greater emphasis is needed to be placed on identifying and guiding each child’s developmental progress. Only then will maximum learning occur.
CHAPTER 3

METHODOLOGY

Introduction

The purpose of this study was to assess the effectiveness of the Dynamic Physical Education Curriculum at Centennial Middle School in the Kyrene School District. The research question addressed in this study was the following: is the Dynamic Physical Education Curriculum model is an effective way to teach physical education to middle school students?

Research Design

This study used the casual/comparative form of the is descriptive research design. "In descriptive research, the researcher does not manipulate variables or control the environment in which the study takes place" (Merriam & Simpson 1995, 61). Casual/comparative research is a form of descriptive research in which, "...the investigator attempts to explain phenomena that already have taken place" (Merriman & Simpson 1995, 61). The characteristics of descriptive design are relevant to the existing data and "may include (1) collection of facts that describe existing phenomena; (2) identification of problems or justification of current conditions and practice; (3) project or product evaluation; or (4) comparison of experience between groups with similar problems to assist in future planning and decision making" (Merriman & Simpson 1995, 61).
To determine the effectiveness of the Dynamic Physical Education Curriculum at Centennial Middle School, a multiple choice pretest and posttest, fitness pretest and posttest, and an attitude survey were used. The tests that were administered consisted of questions that addressed the Dynamic Physical Education Curriculum at Centennial Middle School. The data generated from the tests were analyzed and student progress examined.

Population and Sample

The population consisted of sixth, seventh, and eight grade co-educational students in the Dynamic Physical Education Program at Centennial Middle School. The sample size in this study was 111 for the multiple choice test, 50 for the fitness test, and 109 for the attitude survey. The researcher recorded that over 93% of all students completed the tests. The participants chosen in this study were students in the researcher’s physical education classes at Centennial Middle School.

Assumptions

The study consisted of sixth, seventh, and eighth grade students attending Centennial Middle School placed in the Dynamic Physical Education Program. This study was accomplished by gathering results and compiling statistics of the test data collected from students. Even though all students did not choose to complete the tests, it is assumed that the data collected is representative of all students in the Dynamic Physical Education Program, since 93% responded. In addition, student responses to the evaluations are assumed to be honest responses.
Limitations

A limitation of this study is that many available testing techniques and tests are impractical to use in the typical physical education class setting. Another limitation of this study is that many students identify assessment solely for the purpose of determining a grade. Assessment should be seen as the enhancement of learning, rather than the documentation of learning. In addition, the researcher in this study is a middle school physical education instructor and team leader at Centennial Middle School in the Kyrene School District.

Procedure

The tests were administered to students in the Dynamic Physical Education Program's classes according to the following schedule:

- Cognitive Pretest 2-22-96
- Cognitive Posttest 3-21-96
- Fitness Pretest 2-1-96, and 2-2-96
- Fitness Posttest 3-7-96, and 3-8-96
- Affective Pretest 2-24-96
- Affective Posttest 3-22-96

The approximate time for each class was 45 minutes. The days of the week for each class used in the study were Monday through Friday. The approximate duration of the study was for a six week period during the school year 1995 to 1996.
Students were administered a pretest at the beginning of the six week period and the posttest at the end of the six week period. Students were instructed to circle the answer they felt was correct, and that there may be more than one correct answer to each question. All of the questions are based upon their knowledge of the work they did in class for the four week testing period. Test completion was a requirement of the class and accounted for one third of students grade.

**Instrumentation**

Three measures were used to evaluate the effectiveness of the Dynamic Physical Education model.

1. A researcher designed multiple choice pretest and posttest to measure the cognitive domain. This test measures the ability of the student to use cognitive information to understand and enhance physical fitness acquisition and performance. Knowledge of the importance and practice of physical fitness enhances the likelihood of independent learning and therefore more regular and effective participation in physical activity.

2. The Prudential Fitnessgram to measure the psychomotor domain. This test is a comprehensive fitness program for school aged children and youth. It consists of a health related fitness assessment, a behavioral oriented recognition system, and educational materials for teachers to use in accomplishing the primary objective of youth fitness programs, which is to assist students in establishing daily physical activity as part of their daily lives.
The Prudential Fitnessgram assessment measures three components of physical fitness which have been identified as being important because of their relationship to overall health and optimal function. The three components are aerobic capacity, body composition, and muscular strength, endurance, and flexibility. The performance objective for all students is to achieve a passing score of their fitness level that will place them within or above the Healthy Fitness Zone on all test items.

The Fitnessgram Test is designed to evaluate and educate students about the status of their physical fitness. Generally, there are two primary objectives for administering physical fitness assessments. One of the primary objectives of fitness testing is to provide the student, teacher, and parents with personal information regarding the student’s current level of fitness. A second objective of fitness testing may be to determine if the program is achieving its stated goals. If the program or curriculum is effective, the students should be achieving institutional goals. A common approach is to establish a percentage of students that achieve the Healthy Fitness zone or above. Briefly, the administration of the test items and major objective of each are as follows:

a. One Mile Walk/Run: The objective is to walk and/or run a one mile distance at the fastest pace possible. If a student cannot run the total distance, walking is permitted. The one mile walk/run is scored in minutes and seconds. As the students cross the finish line elapsed time is called to the participants.

b. The PACER (Progressive Aerobic Cardiovascular Endurance Run): The objective is to run as long as possible back and forth across a 20 meter distance at
a specified pace. The recorded score is the total number of laps completed by the student. The test tape contains 21 levels (21 minutes). The test tape allows nine seconds to run the distance during the first minute. Each minute the pace increases approximately one half second.

c. Curl Up: The objective is to complete as many curl ups as possible, up to a maximum of 50, at a specified pace. The score is the number of correctly performed curl ups.

d. Push Ups: The objective is to complete as many push ups as possible, at a rhythmic pace. The students are paired. One student performs the test while the other counts push ups and watches to see that the student being tested bends the elbow to 90 degrees, with the upper arm parallel to the floor. The score is the number of push ups completed successfully.

e. Trunk Lift: The objective is to lift the upper body 12 inches off the floor using the back muscles, and hold this position to allow for the tester to place a ruler on the floor in front of the student. The distance of the student’s chin from the floor is recorded to the nearest inch.

f. Sit and Reach: The objective is to be able to reach the specified distance on the right and left sides of the body. The student removes his/her shoes and sits down at the test apparatus box. One leg is fully extended with the foot flat against the end of the apparatus box. The other knee is bent with the sole of the foot flat on the floor and 2-3 inches to the side of the straight knee. The arms are extended forward over the box with
the hands placed on top of the each other. The score is recorded on each side to the last whole inch reached.

g. Shoulder Stretch: The objective is to be able to touch the fingertips together behind the back by reaching over the near shoulder with one hand and behind the back with the opposite hand. The test is scored pass/fail for the right side and the left side.

3. A survey to measure the affective domain: The survey consisted of 10 Likert scale questions that concerned the Dynamic Physical Education Program at Centennial Middle School. Each student was instructed to circle the answer which corresponded to the intensity of their level of agreement or disagreement which each item according to the following scale:

SD = Strongly Disagree
D  = Disagree
N  = No Opinion
A  = Agree
SA = Strongly Agree

The affective domain deals with feeling, attitudes, and values. How students are treated by teachers and the feelings they develop toward physical education can be more important to students than the knowledge and skill they develop. In physical education programs, the affective domain is an important learning domain.
Method of Analysis

Comparisons were made among the boys in class, among the girls in class, and collectively between boys and girls. Comparisons were made and tallying recorded as follows:

1. Frequency and % of gender of students for the cognitive test.

2. t test comparisons of differences of the means using a 0.05 level of significance.

3. Frequency and % of girls passing shoulder stretch.

4. Frequency and % of boys passing shoulder stretch.

5. Frequency and % comparisons boys and girls passing shoulder stretch.

6. Psychomotor fitness for pacer, mile run, curl ups, push ups, and trunk lifts for both boys and girls.

7. Standard deviation comparisons for Fitnessgram Test for boys, girls, and for boys and girls.

8. Mean and standard deviation results.

9. The Fitnessgram uses criterion referenced standards to evaluate performance, which is classified as a Healthy Fitness Zone

Tables to illustrate the results were made from the collected data. The information and data collected have yielded the statistics in the following chapter.
CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

This chapter will focus on the findings and results from the student responses to the three assessment tools used in this study.

The number of students participating in the pretest and posttest assessments was as follows:

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive multiple choice test</td>
<td>111</td>
</tr>
<tr>
<td>2. Psychomotor Fitnessgram test</td>
<td>50</td>
</tr>
<tr>
<td>3. Affective survey</td>
<td>109</td>
</tr>
</tbody>
</table>

Data for boys and girls are analyzed separately for the Fitnessgram test because variations in body size will influence performance on fitness tests. Boys show a clear growth spurt in muscle mass, strength, power, and endurance, and a decrease in fat on the arms and legs. Girls show considerably smaller growth spurts in strength, power, and endurance, and tend to accumulate body fat compared to boys.

Cognitive Multiple Choice Results

Table 1 depicts the frequency and percent of the gender of the students participating in the cognitive multiple choice test.
Table 1

Gender Distribution for Cognitive Test

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Boys</td>
<td>84</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2 illustrates the results of the cognitive multiple choice pretest and posttest. A $t$ test was conducted on the difference of the means between the pretest and posttest. There was a statistically significant difference at .05 level of significance. The results show that there was a favorable increase in the posttest score.

Table 2

Data Responses for Cognitive Test

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>49.7</td>
<td>16.3</td>
<td>111</td>
</tr>
<tr>
<td>Posttest</td>
<td>83.7</td>
<td>21.0</td>
<td>111</td>
</tr>
</tbody>
</table>

Psychomotor Fitnessgram Test Results

Table 3 depicts the frequency and percent of girls who passed the shoulder stretch of the psychomotor test pretest and posttest for the right and left shoulder. The results indicate that there was an favorable increase in the posttest scores however, a $z$ test of the
increase in the proportion of girls and boys who passed the shoulder stretch indicated that these increases were not statistically significant.

Table 3
Data Responses for Fitnessgram Shoulder Stretch for Girls

<table>
<thead>
<tr>
<th>Side</th>
<th>N</th>
<th>Pretest Percent Passed</th>
<th>Posttest Percent Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>10</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Right</td>
<td>10</td>
<td>80</td>
<td>90</td>
</tr>
</tbody>
</table>

Table 4 shows the frequency and percent of boys who passed the shoulder stretch of the psychomotor test pretest and posttest for the right and left shoulder. The results indicate a slight increase in the posttest scores. However, this increase was not statistically significant when tested at the .05 level of significance.

Table 4
Fitnessgram Shoulder Stretch Results for Boys

<table>
<thead>
<tr>
<th>Side</th>
<th>Frequency</th>
<th>Pretest Percent Passed</th>
<th>Posttest Percent Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>40</td>
<td>82.5</td>
<td>87.5</td>
</tr>
<tr>
<td>Right</td>
<td>40</td>
<td>90</td>
<td>95</td>
</tr>
</tbody>
</table>

Table 5 depicts the frequency and percent of all students who passed the shoulder stretch of the psychomotor test pretest and posttest for the right and left shoulder. The results of the scores indicate that there was an increase in the percentage of students who passed the test even though the increase was not statistically significant.
Table 5

Fitnessgram Shoulder Stretch Results for Girls and Boys

<table>
<thead>
<tr>
<th>Side</th>
<th>Frequency</th>
<th>Pretest Percent Passed</th>
<th>Posttest Percent Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>50</td>
<td>76</td>
<td>82</td>
</tr>
<tr>
<td>Right</td>
<td>50</td>
<td>88</td>
<td>94</td>
</tr>
</tbody>
</table>

Table 6 contains the psychomotor fitness pretest and posttest results for girls. The fitness test scores reported are for the pacer, mile run, curl ups, push ups and trunk lift. The results indicate that all the mean posttest scores improved with the exception of the mile run.

Table 6

Fitnessgram Test Results for Girls

<table>
<thead>
<tr>
<th>Test</th>
<th>Pretest Mean</th>
<th>Pretest Std. Dev.</th>
<th>Posttest Mean</th>
<th>Posttest Std. Dev</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacer (laps)</td>
<td>50.8</td>
<td>35.7</td>
<td>69</td>
<td>39.2</td>
<td>10</td>
</tr>
<tr>
<td>Mile (min.)</td>
<td>11.62</td>
<td>1.6</td>
<td>10.9</td>
<td>1.5</td>
<td>10</td>
</tr>
<tr>
<td>Curl ups (no.)</td>
<td>42.2</td>
<td>15.6</td>
<td>50</td>
<td>0.0</td>
<td>10</td>
</tr>
<tr>
<td>Push ups (no.)</td>
<td>25.7</td>
<td>11.9</td>
<td>31.8</td>
<td>12.1</td>
<td>10</td>
</tr>
<tr>
<td>Trunk Lift (in.)</td>
<td>12.4</td>
<td>1.0</td>
<td>12.6</td>
<td>1.3</td>
<td>10</td>
</tr>
<tr>
<td>Sit&amp;Reach (in.)</td>
<td>13.4</td>
<td>2.0</td>
<td>14.1</td>
<td>2.2</td>
<td>10</td>
</tr>
</tbody>
</table>
Table 7 contains the psychomotor fitness pretest and posttest results for boys. The fitness test scores reported are the pacer, mile run, curl ups, push ups and trunk lift. The results indicate that all the posttest scores improved with the exception of the mile run.

Table 7

Fitnessgram Test Results for Boys

<table>
<thead>
<tr>
<th>Test</th>
<th>Pretest</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Mean</td>
<td>Std Dev</td>
</tr>
<tr>
<td>Pacer (laps)</td>
<td>53.2</td>
<td>33.0</td>
<td>62.4</td>
<td>46.1</td>
</tr>
<tr>
<td>Mile (min.)</td>
<td>9.9</td>
<td>2.1</td>
<td>11.1</td>
<td>8.2</td>
</tr>
<tr>
<td>Curl ups (no.)</td>
<td>43.6</td>
<td>12.6</td>
<td>44.4</td>
<td>8.8</td>
</tr>
<tr>
<td>Push ups (no.)</td>
<td>24.7</td>
<td>11.2</td>
<td>29.2</td>
<td>12.5</td>
</tr>
<tr>
<td>Trunk Lift (in.)</td>
<td>11.7</td>
<td>2.5</td>
<td>12.0</td>
<td>0.3</td>
</tr>
<tr>
<td>Sit&amp;Reach (in.)</td>
<td>11.4</td>
<td>2.5</td>
<td>12.1</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Table 8 contains the psychomotor fitness pretest and posttest results for girls and boys. The fitness test scores reported are the pacer, mile run, curl ups, push ups and trunk lift. The results indicate that all the posttest scores improved with the exception of the mile run.
Table 8

Fitnessgram Test Results for Girls and Boys

<table>
<thead>
<tr>
<th>Test</th>
<th>Pretest Mean</th>
<th>Pretest Std. Dev.</th>
<th>Posttest Mean</th>
<th>Posttest Std Dev</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacer (laps)</td>
<td>52.7</td>
<td>33.2</td>
<td>63.7</td>
<td>44.5</td>
<td>50</td>
</tr>
<tr>
<td>Mile (min.)</td>
<td>10.3</td>
<td>2.1</td>
<td>11.0</td>
<td>7.3</td>
<td>50</td>
</tr>
<tr>
<td>Curl ups (no.)</td>
<td>43.3</td>
<td>12.9</td>
<td>45.4</td>
<td>8.2</td>
<td>50</td>
</tr>
<tr>
<td>Push ups (no.)</td>
<td>24.9</td>
<td>11.3</td>
<td>29.7</td>
<td>12.4</td>
<td>50</td>
</tr>
<tr>
<td>Trunk Lift (in.)</td>
<td>11.8</td>
<td>1.3</td>
<td>12.1</td>
<td>0.7</td>
<td>50</td>
</tr>
<tr>
<td>Sit&amp;Reach (in.)</td>
<td>11.4</td>
<td>2.5</td>
<td>12.1</td>
<td>2.6</td>
<td>50</td>
</tr>
</tbody>
</table>

The results of the Psychomotor Fitnessgram $t$ tests for girls and boys indicated that the differences between the pretest and posttest mean scores on the different components of the Fitnessgram test were not statistically significant at .05 level of significance. However, the results do indicate that there was a positive increase in all the posttest results excluding the mile run. The data also shows that the scores of both the pretest and posttest for girls and boys are in the Healthy Fitness Zone.

Affective Survey Results

Table 9 presents the mean and standard deviation pretest and posttest results for the affective survey for boys and girls combined. The questions were based on a five point Likert scale, with response choices ranging from Strongly Agree (5) to Strongly Disagree.
(1). While there was a slight decrease in the posttest score, this difference was not statistically significant when tested at the .05 level of significance.

Table 9

Affective Survey Results for Pretest and Posttest

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>36.84</td>
<td>6.06</td>
</tr>
<tr>
<td>Posttest</td>
<td>36.80</td>
<td>5.80</td>
</tr>
</tbody>
</table>

Table 10 presents the mean and standard deviation pretest and posttest results for the individual items on the affective survey.

Table 10

Affective Survey Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Pretest</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Posttest</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4.2</td>
<td>.97</td>
<td>4.2</td>
<td>.8</td>
<td>109</td>
</tr>
<tr>
<td>2</td>
<td>3.67</td>
<td>1.0</td>
<td>3.68</td>
<td>1.0</td>
<td>109</td>
</tr>
<tr>
<td>3</td>
<td>3.35</td>
<td>1.0</td>
<td>3.22</td>
<td>1.0</td>
<td>109</td>
</tr>
<tr>
<td>4</td>
<td>3.29</td>
<td>1.2</td>
<td>3.23</td>
<td>1.2</td>
<td>109</td>
</tr>
<tr>
<td>5</td>
<td>3.34</td>
<td>1.1</td>
<td>3.17</td>
<td>1.1</td>
<td>109</td>
</tr>
<tr>
<td>6</td>
<td>3.92</td>
<td>.98</td>
<td>3.89</td>
<td>.99</td>
<td>109</td>
</tr>
<tr>
<td>7</td>
<td>3.60</td>
<td>1.07</td>
<td>3.72</td>
<td>1.09</td>
<td>109</td>
</tr>
<tr>
<td>8</td>
<td>3.92</td>
<td>.98</td>
<td>3.97</td>
<td>.85</td>
<td>109</td>
</tr>
<tr>
<td>9</td>
<td>3.65</td>
<td>1.0</td>
<td>3.50</td>
<td>1.0</td>
<td>109</td>
</tr>
<tr>
<td>10</td>
<td>3.93</td>
<td>1.15</td>
<td>4.14</td>
<td>1.05</td>
<td>109</td>
</tr>
</tbody>
</table>
The results of the affective survey indicate that there was not a significant difference between the pretest and posttest scores. However, the responses were positive overall with pretest mean responses on individual items ranging from 3.29 to 4.2, and on the posttest from 3.17 to 4.2. A mean of 4.2 was reported in response to the statement, “teamwork is necessary for success in physical education” in the pretest and posttest. A mean of 3.9 on the pretest and 4.1 on the posttest was reported in the response to the statement “rules are needed in all sports in order to protect the participants.”
CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this project was to examine the effectiveness of the Dynamic Physical Education Curriculum at Centennial Middle School in the Kyrene School District.

The research question addressed in this study was, is the Dynamic Physical Education Model an effective way to teach physical education to middle school students? The researcher measured effectiveness by administering a cognitive multiple choice pretest and a posttest, a fitness pretest and posttest, and a pre and post attitude survey to the students in the Dynamic Physical Education Program at Centennial Middle School.

Topics that were discussed in the literature review were, the role of physical education in the secondary school, current practices and directions, curriculum theory and practical factors, innovative program models, developing a quality instructional program, and the Dynamic Physical Education Curriculum at Centennial Middle School.

The physical activity knowledge, attitudes, and behaviors of people are strongly influenced by the type of physical education program they experience. In developing an effective physical education program educators must start with a clear understanding of what physical education is and what it should be doing in schools.

The Dynamic Physical Education Curriculum at Centennial Middle School is effective. This program provides evidence of its effectiveness through the assessment of
outcomes through the use of appropriate, valid and reliable measurements that were presented in chapter 4. Students in the Dynamic Physical Education Curriculum become physically educated since they:

1. learned skills necessary to perform a variety of physical activities.
2. demonstrated physical fitness.
3. participated regularly in physical activity.
4. knew the implications of and the benefits from involvement in physical activity.
5. valued physical activity and its contributions to a healthful lifestyle.

Conclusions

The researcher has concluded that the Dynamic Physical Education at Centennial Middle School is effective and should be implemented district wide. The results of the cognitive multiple choice test indicated that there was a favorable increase in the test score of the posttest. The pretest mean score of 49.7 increased to a mean score of 83.7 in the posttest.

The results of the Psychomotor Fitnessgram test indicated that all the posttest scores improved with the exception of the mile run. The results also indicated that the mean scores of students tested all achieved a score that places them in or above the Healthy Fitness Zone, including the mile run.

Overall, the results of the affective survey indicated that Centennial physical education students feel that their experiences in the Dynamic Physical Education Curriculum are positive.
The results of this study support the effectiveness of the Dynamic Physical Education Curriculum at Centennial Middle school as follows:

- it provides evidence of its effectiveness through the assessment of outcomes that have been achieved by students.
- fosters an understanding of why, when and how physical activity is incorporated into a daily lifestyle.
- promotes the development of movement skills for participation beyond the K-12 grade levels
- accommodates developmental levels of all students, regardless of physical and mental abilities.
- teaches students how to apply the concepts of proper exercise in their daily lives.

This study supports the concept that the benefits of physical education are not natural by-products of random participation. Physical education programs must be designed specifically to reach selected objectives. Students in the Dynamic Physical Education Curriculum at Centennial Middle School develop the knowledge, skills, practices, and values that will serve them well as they incorporate physical activity into a healthy lifestyle.

**Recommendations**

The Dynamic Physical Education Curriculum is an effective model to use at Centennial Middle School. Since this study will be presented to the other middle school sites in the Kyrene School District, the following recommendations are offered:
1. Physical education programs need to meet students daily and be of high quality. In order to promote a lifetime of health and physical fitness, students need to participate in a quality physical education program every day.

2. Middle school students should receive 45 minutes of daily physical education.

3. A effective physical education program should be taught by a certified physical education teacher and takes students through an ordered sequence of planned objectives.

4. The program should help students develop and improve their motor skills, develop and maintain fitness, provide a basic understanding of their bodies and help them better appreciate the benefits of physical activity.

5. A effective program should allow all students to participate and succeed at their own level, including students with physical and mental disabilities.

6. The physical education curriculum should include a balance of skills, concepts, game activities, rhythms, and dance experiences designed to enhance the cognitive, psychomotor, and affective development of every student.

7. The curriculum should provide experiences that encourage students to question, integrate, analyze, communicate, apply cognitive concepts, and make decisions by offering them choice.

8. Teachers should teach activities that allow students the opportunity to work together to improve their emerging social and cooperation skills.

9. Ongoing fitness assessment should be used as part of the ongoing process of helping students understand, enjoy, improve, and maintain their physical health and well-being.
10. Grades should be based on the ongoing individual assessments of students as they participate in physical education class activities, and not on the basis of a single test score.

11. Physical education class should be designed so that all students are involved in activities that allow them to remain continuously active.
REFERENCE LIST


APPENDIX A

COGNITIVE MULTIPLE CHOICE TEST
Circle the correct answer for each question.

1. Which of the following are the five components of physical fitness?
   a. running, jumping, hopping, swimming, and passing
   b. body composition, aerobic capacity, muscular strength, endurance and flexibility
   c. body composition, aerobic capacity, endurance, flexibility, and skinfold
   d. fitness testing, mile-walk, run, push-ups, and weight conditioning

2. Two examples of exercises that increase flexibility are:
   a. push-ups and tricep curls
   b. partner resistance and weight conditioning
   c. hurdler stretch and body twist
   d. pacing and wind sprints

3. To measure body composition you would use:
   a. tape measurer
   b. ruler and string
   c. skin fold caliper
   d. none of the above

4. The following is an example of an exercise that benefits endurance:
   a. pacer
   b. mile walk-run
   c. A and B
   d. none of the above

5. Physical fitness is best described as:
   a. participate in more than one physical activity daily
   b. the ability to perform exercises correctly
   c. the ability to work and play with energy to spare
   d. participates in fitness enhancing activities outside of school
6. An example of a physical fitness lesson component at Centennial Middle School is:

a. 8-10 minutes of circuit training
b. 12-15 minutes fitness during game
c. 2-3 minutes of warm-up
d. skill work at stations during lesson focus

7. To calculate heartbeat range that should be maintained to achieve training effect you would use which of the following formulas?

a. \[ 110 - \text{age} = x \]
   60% of \(x\) and 85% of \(x\)

b. 60% of age = \(x\)
   85% of age = \(y\)

c. \[ 220 + \text{age} = x \]
   60% of \(x\) and 85% of \(x\)

d. \[ 220 - \text{age} = x \]
   60% of \(x\) and 85% of \(x\)

8. To find your heartbeat per minute you would:

a. count pulse rate for 6 seconds and multiply by 10
b. count pulse rate for 6 seconds and multiple by 6
c. count pulse rate for 10 seconds
d. all of the above

9. An example of a team sport and an individual sport is:

a. flag football and softball
b. tennis and badminton
c. a fitness routine and swimming
d. golf and soccer

10. To achieve and maintain a health enhancing level of physical fitness you should always:

a. meet the health-related standards as defined by the fitnessgram
b. make 7 out of 10 free-throws in basketball
c. catch a softball with both hands
d. perform all exercises as quickly as possible
APPENDIX B

PSYCHOMOTOR FITNESSGRAM TEST
### My Personal Fitness Record (Fitnessgram Test Items)

**Name**

**Age**

**School**

**Grade**

**Room**

<table>
<thead>
<tr>
<th></th>
<th><strong>Trial 1</strong></th>
<th><strong>Acceptable</strong></th>
<th><strong>Trial 2</strong></th>
<th><strong>Score</strong></th>
<th><strong>Acceptable</strong></th>
</tr>
</thead>
<tbody>
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<td><strong>Body Composition</strong></td>
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<td>Calf (leg) Skinfold</td>
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<tr>
<td>Triceps (arm) Skinfold</td>
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<tr>
<td>Total (leg + arm)</td>
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<td><strong>Cardiovascular Endurance</strong></td>
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<td>PACER</td>
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<tr>
<td>Mile Run/Walk</td>
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<tr>
<td><strong>Abdominal Strength</strong></td>
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<td></td>
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</tr>
<tr>
<td>Curl-ups</td>
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</tr>
<tr>
<td><strong>Upper Body Strength</strong></td>
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<tr>
<td>Push-ups</td>
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</table>

The following items are pass-fail only.

| **Back Strength** |           |                |             |           |                |
| Trunk Lift        |             |                |             |           |                |
| **Lower Back Flexibility** |       |                |             |           |                |
| Sit & Reach       |             |                |             |           |                |
| **Upper Body Flexibility** |     |                |             |           |                |
| Shoulder Stretch  |             |                |             |           |                |

**Note:** Acceptable indicates that you have scored above the minimum criterion referenced health standard. This means that you have passed the minimum fitness standard required for good health and minimal health risk. Even though you may have passed all the tests, you may not be active enough. Try to be active for at least 30 minutes everyday.
APPENDIX C

STANDARDS FOR HEALTHY FITNESS ZONE
Table 2. The Prudential FITNESSGRAM Standards for Healthy Fitness Zone*

BOYS

<table>
<thead>
<tr>
<th>One Mile</th>
<th>PACER</th>
<th>( \dot{V}O_{2\text{max}} )</th>
<th>Percent Fat</th>
<th>Body Mass Index</th>
<th>Curl-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>min:sec</td>
<td># laps</td>
<td>ml/kg/min</td>
<td></td>
<td></td>
<td># completed</td>
</tr>
<tr>
<td>5</td>
<td>Completion of distance. Time standards not recommended.</td>
<td>Participate in run. Lap count standards not recommended.</td>
<td>25</td>
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<td>7:00</td>
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<td>94</td>
<td>42</td>
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<table>
<thead>
<tr>
<th>Trunk Lift</th>
<th>Push-up</th>
<th>Modified Pull-up</th>
<th>Pull-up</th>
<th>Flexed Arm Hang</th>
<th>Back Saver Sit &amp; Reach**</th>
<th>Shoulder Stretch</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td># completed</td>
<td># completed</td>
<td># completed</td>
<td>seconds</td>
<td>inches</td>
<td></td>
</tr>
<tr>
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<td>6 12</td>
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<td>2 7</td>
<td>1 2</td>
<td>2 8</td>
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<td>17+</td>
<td>9 12</td>
<td>18 35</td>
<td>14 30</td>
<td>5 8</td>
<td>15 20</td>
<td>8</td>
</tr>
</tbody>
</table>

*Number on left is lower end of HFZ; number on right is upper end of HFZ

**Test scored Pass/Fail; must reach this distance to pass.
### Table 3. The Prudential FITNESSGRAM Standards for Healthy Fitness Zone*

**GIRLS**

<table>
<thead>
<tr>
<th>One Mile</th>
<th>PACER</th>
<th>VO₂max</th>
<th>Percent Fat</th>
<th>Body Mass Index</th>
<th>Curl-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>min. sec</td>
<td># laps</td>
<td>mℓ/kg/min</td>
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<td></td>
<td># completed</td>
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<td>Completion of distance. Time</td>
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<td>standards not recommended.</td>
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<td>32</td>
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<table>
<thead>
<tr>
<th>Trunk Lift</th>
<th>Push-up</th>
<th>Modified Pull-up</th>
<th>Pull-up</th>
<th>Flexed Arm Hang</th>
<th>Back Saver Sit &amp; Reach**</th>
<th>Shoulder Stretch</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td># completed</td>
<td># completed</td>
<td># completed</td>
<td>seconds</td>
<td>inches</td>
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<td>17+</td>
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<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>

*Number on left is lower end of HFZ; number on right is upper end of HFZ

**Test scored Pass/Fail; must reach this distance to pass.
APPENDIX D

AFFECTIVE SURVEY
Circle the response that corresponds to your level of agreement or disagreement with each statement.

SD = Strongly Disagree  
D = Disagree  
N = Neutral  
A = Agree  
SA = Strongly Agree

1. Teamwork is necessary for success in physical education.

SD   D   N   A   SA

2. Cooperation needs to be learned before I can compete with others.

SD   D   N   A   SA

3. P.E. helps me learn to appreciate individual differences in other students.

SD   D   N   A   SA

4. Physically fit people are rewarded by society.

SD   D   N   A   SA

5. Physical Education provides learning experiences that help me get along better with my friends.

SD   D   N   A   SA

6. Self responsibility is an important part of many game activities.

SD   D   N   A   SA

7. Physical activities only work when a student motivates himself/herself to move with intensity.

SD   D   N   A   SA

8. Self improvement motivates me to continue the effort.

SD   D   N   A   SA
9. Activities that involve both leading and following in physical education class teach me that both are necessary in our society.

SD       D       N       A       SA

10. Rules are needed in all sports in order to protect the participants.

SD       D       N       A       SA