

Effects of Block Scheduling on the Fitness of  
Middle School Physical Education Students

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A Special Project

Presented to

Dr. Jack McPherson, Ph. D.

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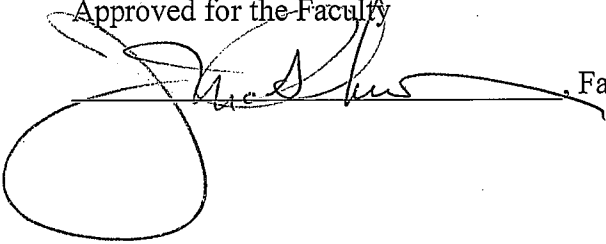
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**FACULTY APPROVAL**

Effects of Block Scheduling on the Fitness of  
Middle School Physical Education Students

Approved for the Faculty



Faculty Advisor

## ABSTRACT

The purpose of this causal-comparative study was to determine whether students enrolled in a block schedule P.E. class would realize greater fitness benefits compared to students enrolled in a traditional P.E. class schedule. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusion and recommendations were formulated. Through pre and post testing, comparison of block and traditional scheduling data, this purpose was achieved. The traditional class schedule in Physical Education produced better results in the one-mile run, whereas students in the block schedule performed better on the sit-up repetitions.

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## CHAPTER 1

### Introduction

#### Background for the Project

In an attempt to increase student achievement through contact time, some school districts have begun restructuring the school day. Many districts have implemented block scheduling. This schedule replaced the traditional 40 to 50 minute class period with an increased block of time ranging from 80 to 90 minutes. With the block schedule, students generally enrolled in four classes in a semester rather than six or seven classes that occurred in the traditional schedule. Although not a completely new concept, the interest for block scheduling was reintroduced in 1994 when the National Education Commission on Time and Learning published a report concerning the use of class time. The challenge by the Commission prompted educators to respond with a renewed interest in block scheduling (Lawrence & McPherson, 2000).

Block scheduling occurred in two distinct variations (Flinders & Veal, 2001). In the alternate-day schedule, or A/B, students enrolled in eight classes for the entire school year. The students attended the eight classes on alternating days so on any given day students only attended four classes. The second type of block scheduling was the semester block plan, also known as 4 X 4 plan. In this type of schedule, students took four classes for one semester but were able to complete a year's worth of curriculum due to increased instructional time. During the second semester, students completed another set of four classes (Viadero, 2001).

As expected, educational researchers have discovered both advantages and disadvantages to block scheduling. Since students took fewer classes for longer periods of time, the quality and quantity of student-teacher interactions and relationships increased (Bukowski & Stinson, 2000). Longer blocks of instructional time provided teachers with the opportunity to vary instructional practices to include activities requiring more time to complete than a traditional 40 to 50 minutes. In physical education classes specifically, instructors were able to incorporate activities that took more time to teach such as biking, canoeing, and cross-country skiing (Bukowski & Stinson, 2000).

Along with the advantage of more class time to complete activities, teachers that advocated for block scheduling acknowledged a great advantage in the area of preparation time. Through educational research, Bukowski and Stinson established that teachers had more uninterrupted time to plan large projects than with the traditional schedule. These authors discovered that teachers who did not currently work in a block schedule believed planning time was rushed whereas teachers working in the block schedule believed there was more time for planning curriculum.

Educators who did not favor block scheduling identified disadvantages to this method of instructional practice. Students who missed a class in the block schedule missed far more material due to the increased instructional time. In many cases, teachers believed missing one day of class in a block schedule was like missing two days of class in the traditional schedule. Student migration could be difficult when students transferred from a school of traditional scheduling to a school with block scheduling and vice versa.

The biggest concern shared by educators who opposed block scheduling was that of student retention. With semester block scheduling there was an issue of continuity with sequential courses. For example, a student might enroll in Algebra in the fall, but not take Geometry until the fall of the following year. There was a concern among educators whether students would be able to retain information for extended periods of time (Lindsay, 2000).

#### Statement of the Problem

A study of current student demographics in the Pasco School District (PSD) revealed a distinct lack of physical fitness among middle school aged students. To address this issue, the focus of the present study may be stated as follows: To what extent did students enrolled in block schedule Physical Education (P.E.) class realize greater fitness benefits compared to students enrolled in a traditional P.E. class schedule?

#### Purpose of the Study

The purpose of this causal-comparative study was to determine whether students enrolled in a block schedule P.E. class would realize greater fitness benefits compared to students enrolled in a traditional P.E. class schedule. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusion and recommendations were formulated.

#### Delimitations

This present study examined the physical fitness of two classes of seventh grade students enrolled at a middle school in the Pasco School District in Eastern

Washington with an enrollment of 1200 students during the 2006-2007 school year. The school is located in a rural area rich in farming that is slowly becoming more urban. One of the seventh grade classes followed the traditional schedule (control group) while the second group of students followed the block schedule (treatment group). The demographics of the school were 54.7% Caucasians, 37.9% Hispanics, 3.6% African Americans, 2.8% Asians, and 0.7% Native Americans. (OSPI, 2006)

### Assumptions

The researcher (Vicente Guajardo) assumed all data collected represented students' best effort at all times. The researcher further assumed there would not be a significant difference in the physical fitness of students enrolled in block scheduling when compared to students enrolled in a traditional schedule.

### Hypothesis

Changing the Physical Education class schedule from block scheduling (i.e. 80 minutes every other day) to a traditional Physical Education class schedule (i.e. 40 minutes five days per week) will have a significant effect on the physical fitness of participating middle school students as evaluated by pre and posttests conducted throughout the school year.

### Significance of the Project

Throughout the 2006-2007 school year, administrators and teachers in the Pasco School District (PSD) engaged in an in-depth investigation of block scheduling versus traditional class scheduling. This investigation sought to compare the advantages and/or disadvantages of the two types of schedules. Those favoring moving to a block schedule with 80 to 90 minutes classes believed student

achievement would increase through extended contact time. Those supporting a traditional class schedule of 40 to 50 minute periods believed improved student retention would result and instruction would be more concentrated and efficient. Accordingly, it was believed the present study would produce information and data that would provide PSD planning personnel with information and data needed for class schedule decision-making.

### Procedure

During the first semester of the 2006-2007 school year, seventh grade students enrolled in both traditional and block schedule classes. The block schedule classes included a physical education class and a health class that met during an alternating block schedule that ran for 80 minutes every other day. The traditional schedule class was a physical education class that ran for 45 minutes for each class period. In a pre-test, data was collected to evaluate the degree of physical fitness of the seventh grade students involved in the study. Such evaluations involved number of sit-ups and push-ups a student could complete with a given time constraint. Students were also timed to determine how much time was needed to complete a one-mile run. Heart rate after physical activity was also measured for each student during the pre-test.

Second semester of the 2006-2007 school year, the physical education and health classes began a modified block schedule. Students had 80 minutes of one class every other day. Data were collected from the students consistent with the same evaluation from first semester. A comparison of the results of the physical fitness evaluations was made in order to determine whether there were any distinct benefits or drawbacks to the block scheduling of physical education and health classes.

### Definition of Terms

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

block schedule. A long period of time, 80 to 100 minutes, in which a class met every other day.

causal-comparative research. Research that attempts to determine the cause, or reason, for existing differences in the behavior or status of groups.

traditional schedule. A period of time, 40 to 50 minutes, in which a class period met each day.

### Acronyms

NASPE. National Association for Sport and Physical Education

OSPI. Office of Superintendent of Public Instruction

P.E. physical education class

PSD. Pasco School District

## CHAPTER 2

### Review of Literature

#### Introduction

The review of literature and research summarized in Chapter 2 has been organized to address the following topics:

- Impact of Physical Education on Academic Achievement and Fitness
- Advantages of Block Scheduling
- Disadvantages of Block Scheduling
- Block Scheduling vs. Traditional Scheduling
- Summary

Data primarily within the last 10 years was identified through an on-line computerized literature research using the Internet and a hand-search of related, supplemental materials was also conducted.

#### Impact of Physical Education on Achievement and Fitness

A survey conducted by the National Association for Sport and Physical Education followed middle and high school students enrolled in physical education classes. The results of the survey provided compelling statistical data that there existed a distinct relationship between academic achievement and physical fitness (NASPE, 2002). The physical fitness of students had a direct impact on students' academic achievements.

A NASPE study of physical education in the state of California indicated that students that were physically fit performed well academically when examining student records. According to the study, students achieved best when physically fit

(NASPE). In a study of 353,000 fifth graders, 322,000 seventh graders and 279,000 ninth graders, students who were physically fit had better test scores in reading and mathematics. Key findings of the study were:

1. Higher achievement was associated with higher levels of fitness at each of the three grade levels measured.
2. The relationship between academic achievement and fitness was greater in mathematics than in reading, particularly at higher fitness levels.
3. Students who met minimum fitness levels in three or more physical fitness areas showed the greatest gains in academic achievement at all three grade levels.
4. Females demonstrated higher achievement than males, particularly at higher fitness levels (NASPE).

When researching the required student contact time in physical education classes, NASPE discovered that while most states required that students enroll in physical education classes, most states did not mandate a specific number of minutes of physical education class per week. Only the state of Montana met the requirement of 225 minutes of physical education activity for middle school students. There existed a distinct deficit in the amount of contact time for most physical education instruction in the schools. Many schools, however, made efforts to increase the number of minutes of participation in the physical education classes by transitioning to block scheduling (NASPE).

In 1999, Titusville Middle School in Pennsylvania introduced a revolutionary inclusion philosophy called PE4LIFE in an effort to heighten awareness of the



benefits of good health and physical activity. In an attempt to equalize the performance of physical education students, this concept was put in place for students who were always picked last and placed in less desired positions that more athletic students did not want. This idea of PE4LIFE eliminated the jock culture of identifying the strongest, fastest, and most athletic students. The PE4LIFE program brought more joy to students always at a disadvantage because each student had an equal chance to reach fitness goals. The new method required that each student used certain equipment like a heart monitor, a stopwatch, an elastic strap, and a transmitter in order to keep track of each individual student's performance with the emphasis being on individual improvement or progress rather than sports skills. Students enrolled in a traditional schedule often did not have the opportunity to use such elaborate equipment due to time restrictions (McCord & Wagonseller, 2006).

One issue facing public school districts was the lack of physical activity for the students. Even though the schools have increased the minutes to meet the standard range of 220 minutes, students were not performing to potential. The dilemma that the schools encountered was students were losing interest in the class activity due to the increased number of minutes of physical education classes which resulted in many students standing around and visiting instead of participating in the activity. This lack of participation resulted in a decrease in student performance and forced instructors to develop new strategies in order to keep the interest of the students so desired performance could be reached (McCord & Wagonseller).

In 2001, the California Standard Testing and Reporting Program developed a statewide assessment to evaluate the physical fitness of students in grades five, seven,

and nine. In the study, students were introduced to six physical fitness tests with results mandated by the fitness test "Fitnessgram". Fitnessgram was developed by the Cooper Institute for Aerobic Research. The six areas of fitness included aerobic capacity, body composition, which was the percentage of body fat, abdominal strength and endurance, trunk and upper body strength, endurance, and overall flexibility. A student with a score of six indicated that the student met standard in all six areas (California Department of Education, News Release, 2002).

Physical education programs were important components of the educational system because students were provided with increased physical competence, health-related fitness, self-responsibility and the enjoyment of physical activity so that students were physically fit for life. According to NASPE, physical education classes were a vital component of a student's education. NASPE maintained that physical education programs provided benefits to students only if well-planned and well-implemented. The benefits of physical education included:

1. Improved physical fitness by improving muscular strength, flexibility and cardiovascular endurance.
2. Development of motor skills which allowed a safe foundation for successful participation in physical education.
3. Support of other subject areas by reinforcing knowledge learned across the curriculum and also served as a lab for application of content in science, math, and social studies.
4. Improved self-discipline by developing student responsibility for health and fitness.

5. Strengthened peer relationships as physical education could be a major force in helping children socialize with peers successfully
6. Developed a sense of goal setting (NASPE).

There was little disagreement among educators and researchers that there were numerous benefits to physical activity and engaging the cardiovascular system. The benefits of cardiovascular exercise were very rewarding. According to research conducted by *USA Today*, the benefits of exercise included:

1. increase in heart rate.
2. greater blood flow.
3. rise in arterial blood pressure.
4. burn more fat.
5. increased endurance.
6. improved joints.
7. strengthened muscles.
8. improved lung capacity.
9. preparation to get in shape (NASPE, 2002).

While educators and researchers agreed on the benefits of cardiovascular activity, there were several differing opinions on the best implementation of physical education classes namely in the number of contact minutes with students each day (USA Today).

### Advantages of Block Scheduling

Block scheduling provided a new and more efficient method to organize the school day. Block scheduling provided students with more class time to concentrate more on subjects at hand since there were fewer classes in the school day (Hynes-Hunter, 2003). For example, in traditional scheduling there were 40 to 50 minute periods and six to eight classes in a day while in block scheduling there were four to five classes each lasting 80 to 90 minutes.

Many schools were adapting to a block schedule in lieu of the traditional schedule in an effort to provide more contact time for physical education classes. According to NASPE, there were several ways in which a school could implement a bell schedule that included a physical education class.

1. Two-class format. In this format physical education and health classes were paired together as an elective block in which students enrolled for ten weeks.
2. Three-class format. Students might meet for a block of PE/Health every other day alternating with a period split between exploratory and elective classes. Students received less time in each in class in comparison to the two-class format.
3. Four-class format. This included a 45-minute period for PE/Health scheduled every other day, alternating with other exploratory or elective classes (Rettig, 2004, p.1).

In order for block scheduling to be effective in physical education programs physical educators had to be provided with proper training. This training was required so teachers could learn to use the larger blocks of time to achieve all the stated

objectives, to learn how to organize and to teach and assess effectively in this large amount of time (Hynes-Hunter, 2003).

There were advantages and disadvantages in the block scheduling teaching method. The advantage of a block schedule was that students would have an opportunity to engage in more physical fitness activities. Students would have more time to learn the skills that were being taught. Advocates of block scheduling believed that block scheduling allowed teachers to increase the use of different strategies of teaching (Flinders & Veal, 2001). Block scheduling allowed teachers to have more time to focus on content, gave teachers a chance to vary instructional practices and try new activities that would require more time to teach. In addition students had more time to focus on subject matter and more opportunities to participate in class discussions, activities and labs (Hynes-Hunter).

#### Disadvantages of Block Scheduling

Some disadvantages associated with block scheduling were identified by Hynes-Hunter. Students experienced boredom during disliked activities, often losing interest if an activity was played over 40 minutes. Another disadvantage to block scheduling was absenteeism. Because class periods were longer than in traditional schedules, when a student missed a class, the absence was likened to missing two regular classes (Lawrence & McPherson). Another disadvantage to block scheduling was the direct impact on the teacher's planning of lessons. Teachers had to use more preparation time in order to fill the longer periods.

### Block Scheduling vs. Traditional Scheduling

Most physical education programs, whether in middle or high schools, were part of the traditional scheduling period which was 40 to 50 minutes in duration. In traditional periods most physical educators found there was not enough time to teach sport concepts, improve fitness and sport skills, develop a sense of fair play, and to develop a lifetime commitment to physical activity because students used time for dressing down and up and for stretching exercises (Hynes-Hunter, 2003). For the aforementioned reasons traditional scheduling was a disadvantage for physical education programs (Hynes-Hunter).

According to an article published in the fall issue of *Education Next*, increasing the number of required physical education courses in schools had no detectable effect on weight or the likelihood of obesity among students. The increase of time in physical education classes led to more exercises but decreased the level of physical activity. The findings of the study suggested that there was very little effect of increased contact time in physical education classes and the level of physical fitness of students studied (Cullen, 2006).

### Summary

The review of selected literature presented in Chapter 2 supported the following research themes:

1. Research authorities provided compelling statistical data confirming a distinct relationship between academic achievement and fitness.
2. Block scheduling provided students with more class time to concentrate more on subjects at hand since there were fewer classes in the school day.

3. Disadvantages associated with block scheduling included student boredom during disliked activities, increased absenteeism, and greater demands on teachers' lesson planning.
4. Traditional class scheduling may not provide enough time to improve fitness, whereas block scheduling may produce improved fitness results.

## CHAPTER 3

### Methodology and Treatment of Data

#### Introduction

The purpose of this causal-comparative study was to determine whether students enrolled in a block schedule P.E. class would realize greater fitness benefits compared to students enrolled in a traditional P.E. class schedule. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusion and recommendations were formulated.

Chapter 3 contains a description of the methodology used in the study.

Additionally, the researcher includes details concerning participants, instruments, design, procedure, treatment of data, and summary.

#### Methodology

The researcher utilized a causal-comparative research methodology to determine the extent to which fitness benefits of students enrolled in block schedule (P.E.) class compared to students enrolled in a traditional P.E. class schedule.

#### Participants

The present study examined the physical fitness of two classes of seventh grade students enrolled at a middle school in the Pasco School District in Eastern Washington with an enrollment of 1200 students during the 2006-2007 school year. One of the seventh grade classes followed the traditional schedule (control group) while the second group of students followed the block schedule (treatment group).



### Instruments

In September 2006, treatment and control groups for the present study were identified and pre-tested, using physical fitness evaluations. Treatment and control groups were post-tested in May 2007.

### Design

This research study utilized a causal-comparative design to determine whether the physical fitness of two data groups were significantly different. This involved pre and post testing two groups of students as follows:

**Treatment group:** A group of seventh grade students following the block schedule P.E. class.

**Control group:** A group of seventh grade students following the traditional class schedule.

### Procedure

Procedures employed in the present study evolved in several stages as detailed below:

1. During the first semester of the 2006-2007 school year, seventh grade students enrolled in both traditional and block schedule classes. The block schedule classes included a physical education class and a health class that met during an alternating block schedule that ran for 80 minutes every other day. The traditional schedule class was a physical education class that ran for 45 minutes for each class period.
2. In a pre-test, data was collected to evaluate the degree of physical fitness of the seventh grade students involved in the study. Such evaluations involved

number of sit-ups and push-ups a student could complete with a given time constraint.

3. Students were also timed to determine how much time was needed to complete a one-mile run. Heart rate after physical activity was also measured for each student during the pre-test.
4. Second semester of the 2006-2007 school year, the physical education and health classes began a modified block schedule. Students had 80 minutes of one class every other day. Data were collected from the students consistent with the same evaluation from first semester.
5. A comparison of the results of the physical fitness evaluations was made in order to determine whether there were any distinct benefits or drawbacks to the block scheduling of physical education and health classes.

#### Treatment of the Data

Using a modified causal-comparative design, 7<sup>th</sup> grade P.E. students were organized into two comparison groups. Both treatment and control groups were administered pre and posttests to measure participant's performance on (1) a one-mile run, and (2) number of sit-up repetitions recorded during a one-minute time period. Essential baseline data obtained from pre and posttests were tabulated to provide a basis for formulating related inferences, conclusions, and recommendations.

#### Summary

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

## CHAPTER 4

### Analysis of the Data

#### Introduction

A study of current demographics in the Pasco School District (PSD) revealed a distinct lack of physical fitness among middle school aged students. To address this problem, the present study sought to determine the extent to which 7<sup>th</sup> grade students rolled in block schedule Physical Education (P.E.) classes demonstrated greater fitness benefits compared to students enrolled in a treatment Physical Education (P.E.) class schedule.

#### Description of the Environment

This present study examined the physical fitness of two classes of seventh grade students enrolled at a middle school in the Pasco School District in Eastern Washington with an enrollment of 1200 students during the 2006-2007 school year. The school is located in a rural area rich in farming that is slowly becoming more urban. One of the seventh grade classes followed the traditional schedule (control group) while the second group of students followed the block schedule (treatment group). The demographics of the school were 54.7% Caucasians, 37.9% Hispanics, 3.6% African Americans, 2.8% Asians, and 0.7% Native Americans. (OSPI, 2006)

#### Hypothesis

Changing the Physical Education class schedule from block scheduling (i.e. 80 minutes every other day) to a traditional Physical Education class schedule (i.e. 40 minutes five days per week) will have a significant effect on the physical fitness of

participating middle school students as evaluated by pre and posttests conducted throughout the school year.

### Results of the Study

As shown in Table 1 (on page 21), 7 of 15 students (47%) in the control group reduced their one mile run time from pre to post test. The control group (80 minutes every other day) met every other day with 20 minutes of cardiovascular exercise and 30 minutes of physical education activity. By comparison, 12 of 15 students (80%) in the treatment group (40 minutes five days a week) reduced their one mile run time from pre to post test. The treatment group met five days a week with cardiovascular activity on Tuesdays and Thursdays.

As shown in Table 2 (on page 22), 14 of 15 (99%) of students in the control group increased their sit-up repetitions from pre to posttest. In contrast, 12 of 15 (80%) of the treatment group students increased their number of sit-up repetitions.

### Findings

Data presented in Table 1 provided significant support for the hypothesis. 80% of students in the treatment group improved their one-mile run time compared to 47% of students in the control group. Conversely, results shown in Table 2 rejected the hypothesis. 99% of students in the control group increased their number of sit-up repetitions compared to 80% in the treatment group.

### Discussion

As indicated above, the analysis of data produced mixed results in the present study. The traditional physical education class schedule (40 minutes five days a

**Table 1**

A Comparison of Pre- and Post-tests for 7<sup>th</sup> Grade Traditional and Block Students  
Fitness results for Timed mile run, February 2007 - May 2007.

**Control Group\***  
(80 min Block students)

Student	1 Mile Run		Increase/ Decrease
	Pre Test (Feb 2007)	Post Test (May 2007)	
1	13.7	14.1	0.4
2	11.3	9.2	-2.1
3	12.4	14.0	1.6
4	9.6	10.1	0.5
5	6.2	6.3	0.1
6	8.4	8.3	-0.1
7	12.5	13.3	0.8
8	9.4	7.4	-2.1
9	14.3	13.3	-1.0
10	8.2	8.1	-0.2
11	7.3	8.0	0.7
12	7.4	7.4	0.0
13	14.3	13.0	-1.3
14	11.2	12.2	1.0
15	15.3	13.0	-2.3
Percentages Increase/Decrease			+ 47%

\* The control group met every other day with 20 min of cardiovascular exercise and 30 min of activity.

**Treatment Group\***  
(40 min Traditional students)

Student	1 Mile Run		Increase/ Decrease
	Pre Test (Feb 2007)	Post Test (May 2007)	
1	11.7	12.2	0.5
2	18.0	17.4	-0.6
3	11.2	8.6	-2.6
4	8.4	7.1	-1.3
5	9.3	11.3	2.0
6	9.5	7.4	-2.1
7	10.0	9.5	-0.5
8	13.4	13.3	-0.2
9	13.4	10.6	-2.8
10	11.2	10.3	-0.8
11	10.4	11.1	0.7
12	7.4	6.4	-1.0
13	10.1	9.4	-0.7
14	12.1	11.3	-0.8
15	13.4	13.3	-0.2
Percentages Increase/Decrease			+ 80%

\* The treatment group met 5 days a week with cardiovascular exercise on Tuesday and Thursday.

**Table 2**

A Comparison of Pre- and Post-tests for 7<sup>th</sup> Grade Traditional and Block Students  
Fitness results for sit-up repetitions, February 2007 - May 2007.

**Control Group\***  
(80 min Block students)

Student	Sit-ups (1 min)		Increase/ Decrease
	Pre Test (Feb 2007)	Post Test (May 2007)	
1	27	34	7
2	28	32	4
3	40	42	2
4	10	11	1
5	40	44	4
6	23	33	10
7	31	36	5
8	35	34	-1
9	43	46	3
10	30	34	4
11	20	24	4
12	33	37	4
13	25	29	4
14	38	41	3
15	29	32	3
Percentages Increase/Decrease			+ 99%

\* The control group met every other day with 20 min of cardiovascular exercise and 30 min of activity.

**Treatment Group\***  
(40 min Traditional students)

Student	Sit-ups (1 min)		Increase/ Decrease
	Pre Test (Feb 2007)	Post Test (May 2007)	
1	22	24	2
2	17	19	2
3	31	30	-1
4	42	49	7
5	36	42	6
6	29	27	-2
7	35	40	5
8	52	56	4
9	44	46	2
10	54	55	1
11	37	43	6
12	8	11	3
13	36	33	-3
14	48	52	4
15	50	58	8
Percentages Increase/Decrease			+ 80%

\* The treatment group met 5 days a week with cardiovascular exercise on Tuesday and Thursday.

week) produced better results in the one mile run, whereas with the block schedule (80 minutes every other day) students performed better with the sit-up repetitions. This fact may be interpreted to mean that students who run consecutively for five days build up a greater distance running endurance, thereby resulting in an improved one-mile run time.

### Summary

Chapter 4 provided an overview of the environment, hypothesis, results of the study, findings and discussion. The traditional class schedule in Physical Education produced better results in the one-mile run, whereas students in the block schedule performed better on the sit-up repetitions.

## CHAPTER 5

### Summary, Conclusion and Recommendations

#### Summary

The purpose of this causal-comparative study was to determine whether students enrolled in a block schedule P.E. class would realize greater fitness benefits compared to students enrolled in a traditional P.E. class schedule. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusion and recommendations were formulated.

#### Conclusions

From the review of selected literature presented in chapter 2 and the analysis of data in Chapter 4, the following conclusions were reached:

1. Research authorities provided compelling statistical data confirming a distinct relationship between academic achievement and fitness.
2. Block scheduling provided students with more class time to concentrate more on subjects at hand since there were fewer classes in the school day.
3. Disadvantages associated with block scheduling included student boredom during disliked activities, increased absenteeism, and greater demands on teachers' lesson planning.
4. Traditional class scheduling may not provide enough time to improve fitness, whereas block scheduling may produce improved fitness results.



5. The traditional class schedule for Physical education classes at the middle school level (40 minutes five days per week) produced better results on the one-mile run times. Students enrolled in the block schedule (80 minutes every other day) produced better results on sit-up repetitions.

#### Recommendations

Based on the conclusions cited above, the following recommendation has been suggested:

1. To improve physical fitness at the middle school level, educators should be informed regarding benefits of a variety of class schedules for physical education.
2. To provide students with more class time for each content area, block scheduling has proven attractive.
3. Educational leaders should be informed of disadvantages associated with block scheduling, including students boredom, increased absenteeism and greater demands on teachers' planning time.
4. To improve physical fitness, traditional class scheduling may not provide enough time, whereas block scheduling may provide better fitness results.
5. School district personnel seeking information comparing traditional and block scheduling may wish to utilize information contained in this study or, they may wish to undertake further study more suited to their unique needs.

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