

Increasing Student Physical Fitness Through Increased Choice of Fitness Activities and Student  
Designed Fitness Activities for Ninth Through Twelfth Graders in Physical Education Class

Margo A. Jacob

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## Abstract

This action research project report began when the teacher researcher determined that students exhibited physical fitness levels below that of the state and national norms, and also displayed negative attitudes about physical education. The purpose of this action research project was to increase physical fitness and fitness attitudes through choices of fitness activities and student designed fitness activities. Eleven students in high school grade levels 10 – 12 participated in this study from August 23, 2010 through December 15, 2010.

Students' low fitness levels and negative attitudes about physical education was determined by the increase in the sedentary lifestyles of high school students, disinterest in physical education fitness activities, lack of student input in their physical education classes, the curriculum focus on skill-related physical education over health-related physical education and the decline in the enrollment in physical education classes. The teacher researcher used a student survey to determine students' attitude toward and interest in physical fitness activities in their physical education class, a parent survey to identify the physical fitness interests of high school students as perceived by their parents, the American Red Cross Lifeguarding Fitness Test, and the Presidential Physical Fitness Test were used to determine the fitness level of high school students. Through the student survey the teacher researcher was able to determine that although the students did not have a great interest in their physical education fitness activities they did believe be fit was important. The parent survey allowed the teacher researcher to understand how important the parents believed fitness to be for their children and that the parents believed their children were physically fit. Through the American Red Cross Lifeguarding Fitness Test it was determined that the students met the requirements to become a certified Lifeguard. The Presidential Fitness Test provided the teacher researcher with evidence that while a few students were unable to meet the standards, a majority of the students were able to meet or exceed the standards.

The first intervention that the teacher researcher used was to give the students choices of fitness activities during their physical education fitness days. The choices that were given to the students ranged in levels of low impact, moderate impact, and high impact. The final intervention was allowing students to develop their own fitness activities in the areas of aquatics, cardiovascular endurance, strength training, calisthenics, and sports and games that would be administered during their physical education fitness days.

There was not a notable change in the students' attitude toward physical fitness which could be due to the fact that this group of students believed in the importance in physical fitness from the beginning. What was notable to the teacher researcher was the increase in the participation in the fitness day activities as well as the increase in the variety of fitness activities that the students became interested in.

## **Chapter 1**

### **Problem Statement and Context**

#### **General Statement of the Problem**

This action research project was conducted by one teacher researcher from a high school located in a northwestern suburb of a major Midwestern city. The students targeted in this research were physical education students in grades 10 – 12. The students exhibited physical fitness levels below that of the state and national norms, and also displayed negative attitudes about physical fitness. Evidence for the existence of the problem included data collected from a parent and a student survey to determine the fitness activity interests of high school students grades 10 – 12. Fitness assessments such as the American Red Cross Fitness Test check list and the Presidential Fitness Test were used to indicate the level of fitness performance of the targeted students.

#### **Immediate Context of the Problem**

The school was located in a northwest suburb of a major Midwestern city. The school was a brand new construction that opened its doors in the fall of 2008 with enrollment of ninth and tenth-graders, and by the 2010 -2011 school year it will house ninth through twelfth-grade. All information, unless otherwise noted, was retrieved from the 2009 Interactive Illinois Report Card.

The school had an enrollment of 673 students from grades nine through eleven during the academic year of 2009 – 2010. The school was made up of 334 (50.4%) males and 339 (49.6%) females. The school had majority (71.5%) Caucasian students, which was notably higher than the state average of 53.3%. The African-American population at the school was 2.1% which was dramatically lower than that of the state which was 19.1%. The Hispanic

population at the school of 23.2% was comparable to the state average of 20.8%. Please refer to Table 1: *Racial/Ethnic Background by Percentage*.

Table 1

*Racial/Ethnic Background by Percentage*

	Caucasian	African-American	Hispanic	Asian/Pacific Islander	Native-American	Multi-racial/Ethnic
School	71.5	2.1	23.2	1.7	0.4	1.1
State	53.3	19.1	20.8	4.1	0.2	2.5

The low-income rate for the school was 22.3%. The school had an 8.9% mobility rate. The school had a chronic truancy rate of 7.7%.

In the school, there were 46 certified teachers, of which 94.7% were Caucasian, 3.8% Hispanic, 1.2% Asian, and .3% African American. The average years of teaching experience was 11 which was comparable to the state average of 13 years. The percentage of teachers holding a masters degree or above was 60.3 which was significantly higher than the state average of 50.6%. Average teacher salary for the school was \$58,012, which was slightly less than the state average of \$61,402. The average administrator salary for the school was \$107,485 which was comparable to the state average of \$106,217. The school had an average class size of 17, which was comparable to the state average of 19.2.

The academic program consisted of core subjects including language arts, mathematics, social studies, and science. Other subjects taught were art, business, family consumer sciences, industrial technology, physical education, drivers' education, health, special education and world languages.

The school's athletic, scholastic, and co-curricular teams competed at the conference and regional levels, and hoped to compete at the state level as enrollment grew. Music and theater programs received top acknowledgement and will also see growth in the years to follow.

The school's ninth grade students took the ACT EXPLORE Test, while tenth grade students took the ACT PLAN Test. The ninth-grade scores were slightly higher than the national norm in all areas (School Data Book, 2009-2010). Please refer to Table 2: *Ninth-Grade Explore Scores 2008-2009*.

Table 2

*Ninth-Grade Explore Scores 2008-2009.*

	English	Mathematics	Reading	Science	Composite
School Ninth-Grade	15.9	16.4	15.7	17.4	16.5
National Ninth-Grade	15.5	16.3	15.3	16.9	16.1

The tenth-grade scores were also slightly higher than the national norm (School Data Book, 2009-2010). Please refer to Table 3: *Tenth-Grade Plan Scores 2008-2009*.

Table 3

*Tenth-Grade Plan Scores 2008-2009*

	English	Mathematics	Reading	Science	Composite
School Tenth-Grade	18.3	18.5	18.5	19.9	18.9
National Tenth-Grade	17.4	17.8	17.2	18.3	17.8

The building consisted of 68 classrooms, an auditorium, cafeteria, band room, chorus room, art room, career center, guidance offices, learning resource center, drafting and design, graphics and photography, computer laboratory, two gymnasiums, one eight-lane 25-yard pool, and locker room facilities for males and females. There were also outdoor facilities that included soccer fields, tennis courts, baseball fields, softball fields and football fields for practice as well as game field. The Culinary Arts program facilities included one classroom, a home kitchen, and a commercial kitchen.

### **Local Context of the Problem**

The community was a far northwestern suburb of a major Midwestern city. All information, unless otherwise noted, was retrieved from U.S. Census Bureau website. The total population of the community was 23,215 with a population growth rate of 13%. The majority of the citizens were Caucasian (85.2%), with 21.5% Hispanic members, and 9.8% Other ethnicities as seen in Table 4: *Ethnicity of Community by Percentage*.

Table 4

#### *Ethnicity of Community by Percentage*

Caucasian	African American	Asian	Hispanic	Other
85.2	1.9	1.2	21.5	9.8

The median age of the citizens of the community, 33.4, was slightly lower than the national average of 36.7. A small percentage of the population, 7.8, of the community was under the age of five, while 74.3% of the people were between the ages of 18 and 65. The community population above the age of 65 was 10.6%.

Families that fell below the poverty level in this community was 7.5% which was slightly less than the national average of 9.6%. Individuals in the community that fell below poverty level were at 10%, which was significantly higher than the family average yet lower than the national average of 13.2%. The median household income was \$55,830 for the community which was comparable to the state average.

The educational attainment of the community was 44.6% with a high school diploma or less, 27.7% with some college or an Associates degree, and 27.7% with a Bachelors or graduate degree as seen in Table 5: *Educational Attainment of Community by Percentage*.

Table 5

*Educational Attainment of Community by Percentage*

School Diploma or Less High	Some College or Associates Degree	Bachelors or Graduate Degree
44.6	27.7	27.7

The average household size in the community was 2.66. The unemployment rate of the community was 9.2% which was greater than the national rate of 8.5% (bestplaces.net). The four largest occupational categories were: management, professional, and related occupations at 30.9%, sales and office occupations at 26.5%, production, transportation, and material moving occupation at 19.3%, and service occupations at 15%.

The community was a charming, historic town with a solid, progressive future. Its demonstrated philosophy of responsible planning and growth management was evident throughout with two bustling commercial districts, a solid commercial base, and its surrounding rural environment. With a vibrant, historic square made of brick streets at the center of the

community and a Victorian charm, this community had a wide variety of activities which included the arts and recreation.

The community had been growing with new housing projects and a new high school, as well as the support of the community for the building of a new library rather than renovating the existing 15-year-old building. Outdoor activities including public summer concerts, a farmer's market, and seasonal special events generated widespread attention. With 15 park facilities owned by the city, the recreation department provided a variety of programs for all ages and disabilities including sports, art, fitness, and aquatics.

### **National Context of the Problem**

A decrease in the fitness levels of students in the secondary grades is a national concern. Research has shown that 30% of high school students are not regularly involved in vigorous physical activity (Rikard & Banville, 2006). The President's Council on Physical Fitness and Sports recommended that high school students have at least 60 minutes of physical activity at least five days a week (Reed, Brittenham, Phillips, & Carlisle, 2007). According to the National Association for Sport and Physical Education (2006), only 6% of secondary school meets the recommendations for physical education instructional time (as cited in Mears, 2008, The).

Since the implementation of the No Child Left Behind Act of 2001, it has been shown that some schools across the country place more emphasis on academic courses by limiting the opportunity for students to participate in physical activities (Mears, 2008, The). The emphasis for students and teachers is testing and the results of standardized testing which diminishes the importance of physical activity for students. The National Association for Sport and Physical Education (2006) states that these testing demands and the omission of physical education as a "core" subject by the No Child Left Behind Act of 2001 sacrifices physical activity opportunities

for students (as cited in Mears, 2008,The). According to Grissom (2005) and Sallis, McKenzie, Kolody, Lewis, Marshall, and Rosengard (1999), there is a positive link between students academic success and the amount of physical activity they are involved in daily (as cited in Mears, 2008). This is not always taken into account when schools are approaching standardized test scores; the emphasis is placed on how well they perform academically.

Research has shown that there are negative health risks that relate to low levels of fitness, such as, childhood obesity, risk of early death due to coronary heart disease, and increase cost of health care in our nation (Hill, Randle, & Mullen, 1992). Many of these conditions are preventable through the application of a regular fitness program. The Canadian Pediatric Society (2002) notes that the fitness habits that are established in our younger years can affect fitness attitudes and habits in our adult years (as cited in Wright & Karp, 2006). The American College of Sports Medicine (2005) states that attitudes established about fitness and health during childhood may have an important influence on lifetime fitness patterns (as cited in Bryan, Solmon, Johnson, & Lee, 2008). The reduction in physical activity during childhood and adolescence represents a significant risk factor for cardiovascular disease in adulthood (Beets & Pitetti, 2005).

### **Reflection**

The teacher researcher believes that how the students feel about physical fitness is in relation to the activities available to them in school. The stress of the school to make AYP has become so important that students are taken out of their scheduled physical education class to gain extra help in subject areas in which they test low. I believe if the school itself does not model the importance of physical activity; it can be very hard for students to feel positive about the need for physical education.

## Chapter 2

### Problem Documentation

#### Evidence of the Problem

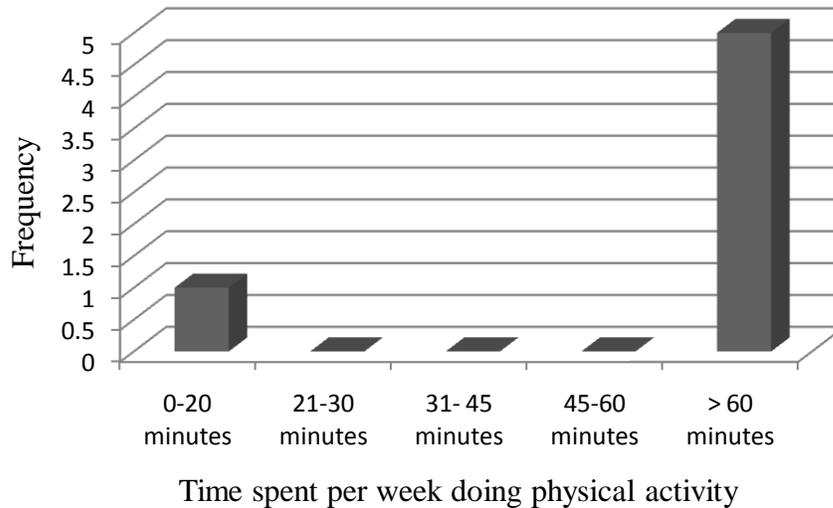
The purpose of this action research project was to increase student physical fitness levels and improve attitudes of fitness through choices of fitness activities and student designed fitness activities. Eleven students in high school grade levels 10 – 12 participated in this study. Four tools were used to document evidence: a student survey, a parent survey, American Red Cross Lifeguarding Fitness Test, and the Presidential Physical Fitness Test. Documentation of the problem occurred August 24– 25, 2010 using the student and parent survey. The American Red Cross Lifeguarding Fitness Test was used August 30 – 31, 2010 and the Presidential Physical Fitness Test was used September 1 – 3, 2010.

#### Student survey.

The first tool the teacher researcher use was the student survey (Appendix A). The purpose of the survey was to determine students' attitude toward and interest in physical fitness activities in their physical education class. Included on the survey were six questions. In the pre-documentation period, the students (n=11) were asked to complete a student survey that they were given on August 24, 2010 and returned it to a manila envelope located in the back of the classroom. Out of the 11 distributed 6 were returned, 55%. One question was a frequency scale, four questions were on a 4-Point Likerts Scale, and one question was a check list of fitness activities they enjoy.

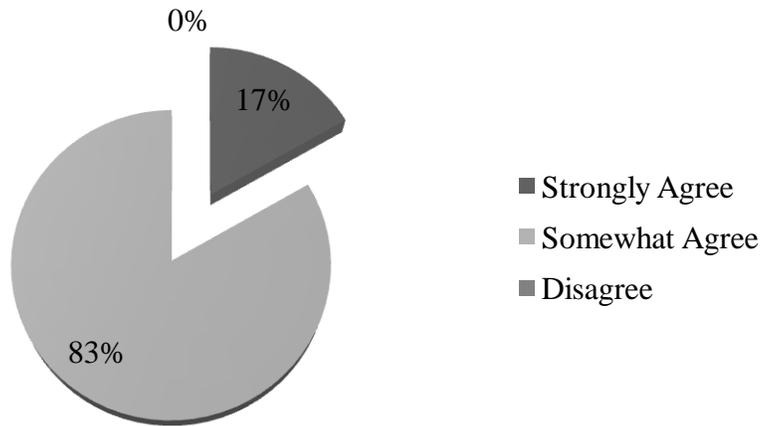
The first question asked the students how much time per week they spent doing physical activity. The answers given ranged from *0 – 20 minutes* to *greater than 60 minutes* increasing by

10 minute span. The results showed that a majority of students ( $n = 5$ , 83%) said that they spend greater than 60 minutes a week doing physical activity (Figure 1).



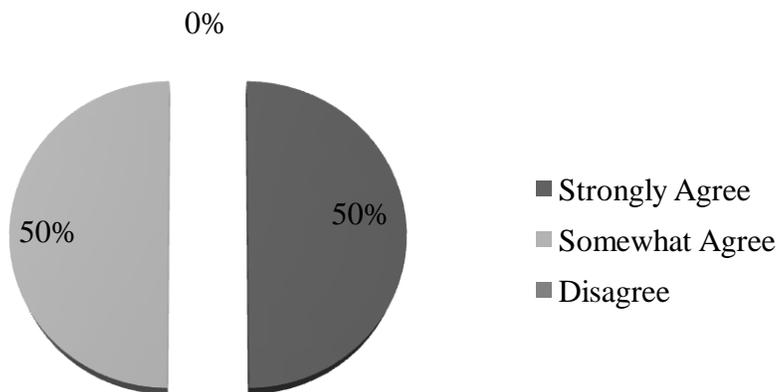
*Figure 1: Average Time Per Week Spent on Physical Activity (n = 6)*

With the next four questions, the students were asked to indicate how much they agreed or disagreed with four statements, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The first statement, the students were to indicate how much they agreed with the belief that being physically fit is important. The result shows that 83% of the students ( $n = 5$ , 45%) strongly agree that physical fitness is important (Figure 2).



*Figure 2: Physical Fitness Importance (n = 6)*

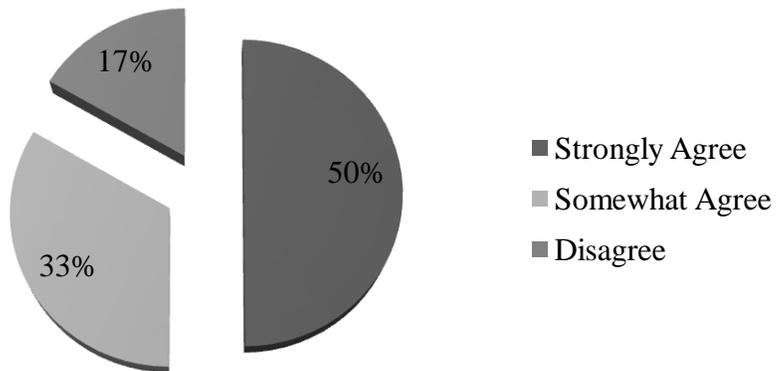
The next statement asked the students if they believed that they were physically fit, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The results of this statement were split between somewhat agree (n = 3) and strongly agree (n = 3) that they are physically fit (Figure 3).



*Figure 3: Student Belief in Their Fitness (n = 6)*

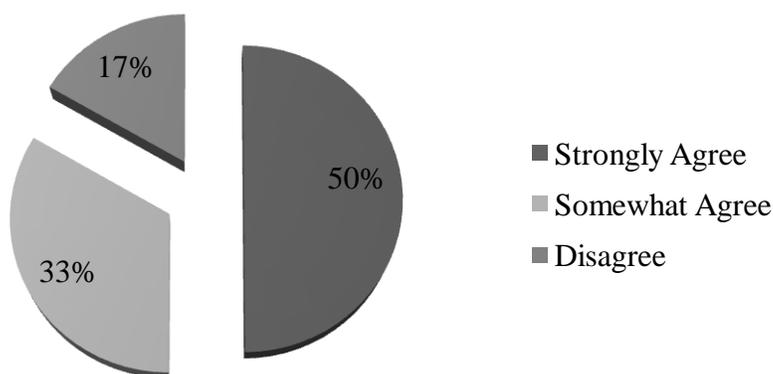
The students were then asked if they enjoyed participating in fitness activities in PE class, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The results show that 50% of

the students ( $n = 3$ ) enjoyed participating in PE class fitness activities while 17% ( $n = 1$ ) did not enjoy their PE class fitness activity (Figure 4).



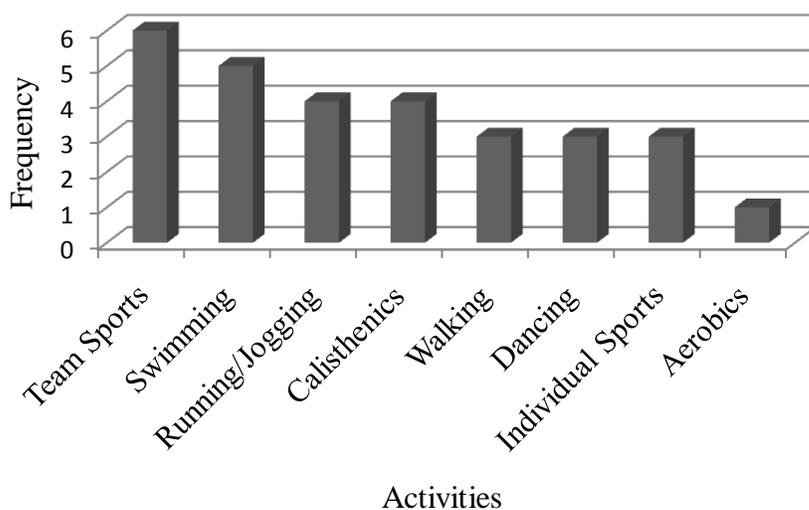
*Figure 4: Enjoyment in PE Physical Fitness ( $n = 6$ )*

The last statement in this survey asked the students their agreement with the statement of how much they enjoyed participating in fitness activities outside of school, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The results of this question were identical to the previous questions. A majority of students ( $n = 3$ ) strongly agree to enjoying outside of school fitness activities while 17% ( $n = 1$ ) does not enjoy outside of school fitness activities (Figure 5).



*Figure 5: Enjoyment in Outside of School Fitness Activities*

The last section of this survey was a check list of fitness activities that the students were to check if they enjoyed participating in them. Team sports ( $n = 6$ ; 18%) ranked the highest among the students, running/jogging and calisthenics ( $n = 4$ ; 12%) ranked in the middle, with aerobics ( $n = 1$ ; 3%) being the lowest ranked activities. While team sports do offer a level of fitness, they may not be considered as a fitness type activity in most physical education curriculums (Figure 6).



*Figure 6: Fitness Activities (n = 33)*

### Parent survey.

The second tool used by the teacher researcher was the parent survey (Appendix B). The purpose of the survey was to identify the physical fitness interests of high school students as perceived by their parents. In the pre-documentation period, the students ( $n = 11$ ) were asked to take home a parent survey that was distributed on August 24, 2010 and to be returned in a manilla envelope and dropped in a homework bin by August 27, 2010. Out of the 11 distributed 9 were returned, 81%. Included on the survey were 6 questions. One question was a frequency scale response, four questions were on a 4-point Likert Scale, and one question was a check list of fitness activities in which their child participates.

The first question asked the parents how much time per week that their child spent doing physical activity. The answers given ranged from *0 – 20 minutes* to *greater than 60 minutes* increasing by 10-minute span. The results showed that a majority of parents ( $n = 8$ ) said that their child spent greater than 60 minutes doing physical activity (Figure 7).

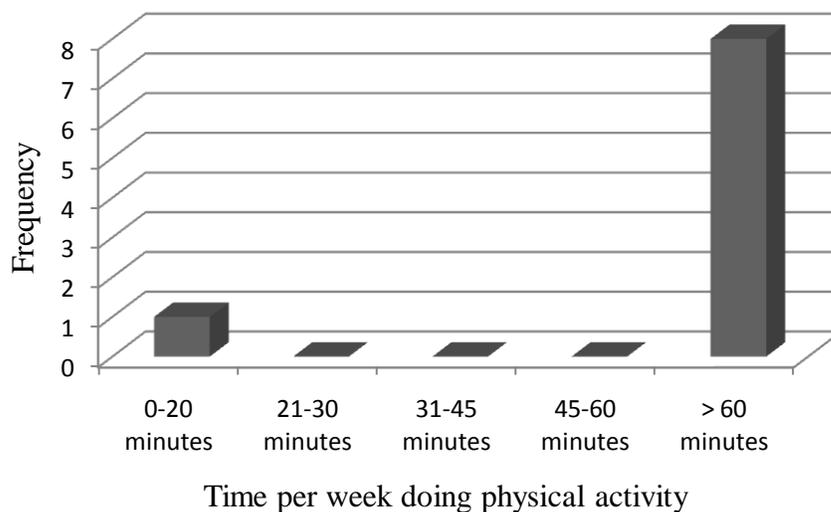


Figure 7: Average Time Per Week Doing Physical Activity

With the next four questions, the parents were asked to indicate how much they agreed or disagreed with four statements, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The first statement the parents were to indicate how much agreed with the importance of their child being physically fit. The result shows that 75% of the parents (n = 6) strongly agree that their child being physically fit is important (Figure 8).

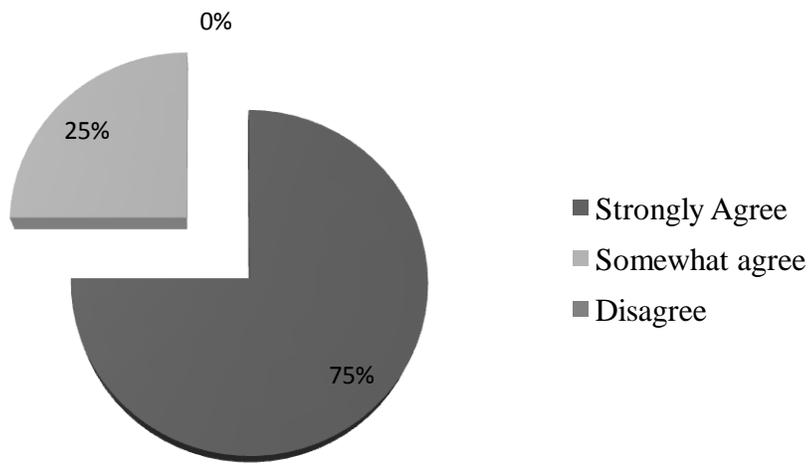
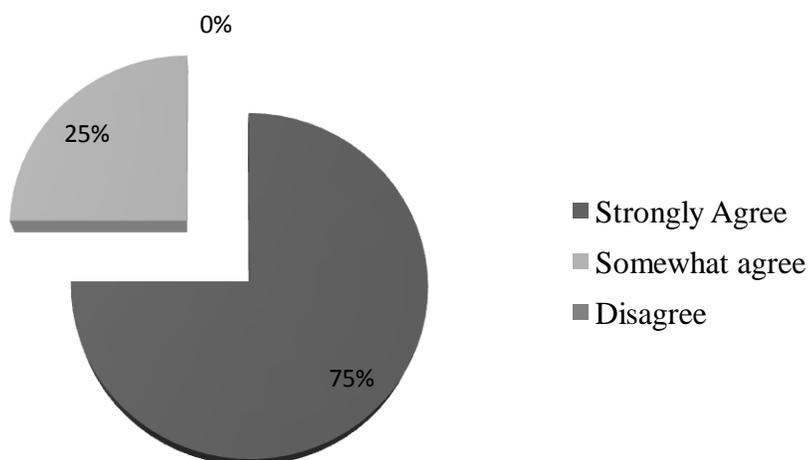


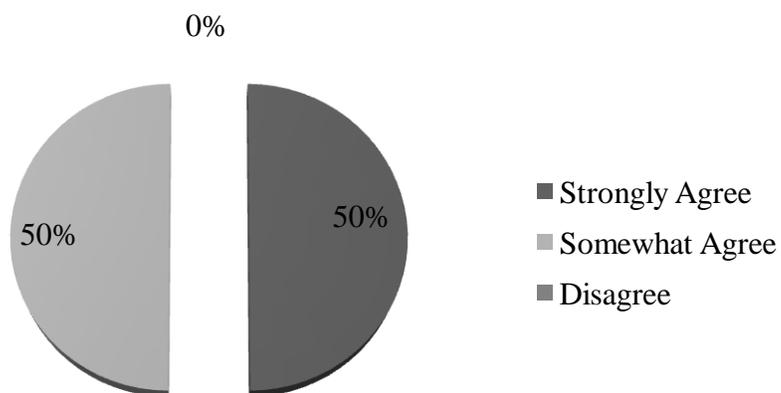
Figure 8: Importance of Physical Activity (n = 8)

The next statement asked the parents if they believed that their child was physically fit, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The majority of parents, 75% (n = 6), strongly agreed that their child was physically fit while the other 25% somewhat agreed (n = 2) (Figure 9).



*Figure 9: Parent Belief in Their Child's Fitness (n = 8)*

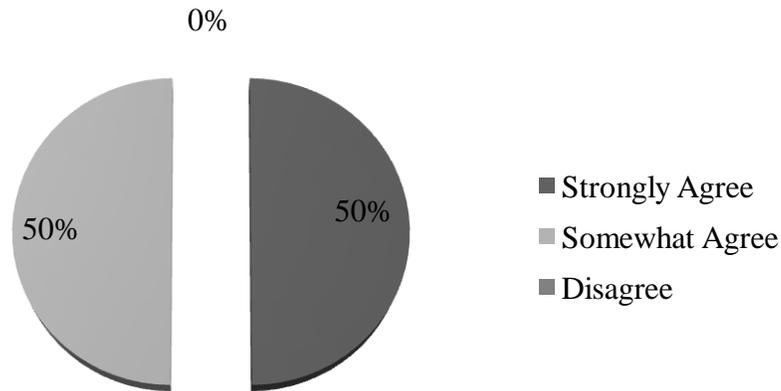
The parents were then asked if they believed that their child enjoyed participation in fitness activities in PE class, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The results tell us that 50% of the parents (n = 4) strongly agreed to the belief that their child enjoyed participating in PE class fitness activities (Figure 10).



*Figure 10: Enjoyment in PE Class Physical Fitness*

The last statement in this survey asked the parents their agreement with the statement of how much their child enjoyed participating in fitness activities outside of school, 1 equaling

*strongly disagree* to 4 equaling *strongly agree*. The result of this question were identical to the previous question. The results show that 50% of the partents (n = 4) strongly agree that their child enjoys participating in fitness activities outside of school (Figure 11).



*Figure 11: Enjoyment in Outside of School Activities*

The last section of this survey was a check list of fitness activities that the parents were to check which activities their child participated in. Swimming (n = 8) ranked the highest at 25%, weight lifting and calisthenics (n = 3) ranked in the middle, with dancing and aerobics (n = 1) ranked the lowest among the activities (Figure 12).

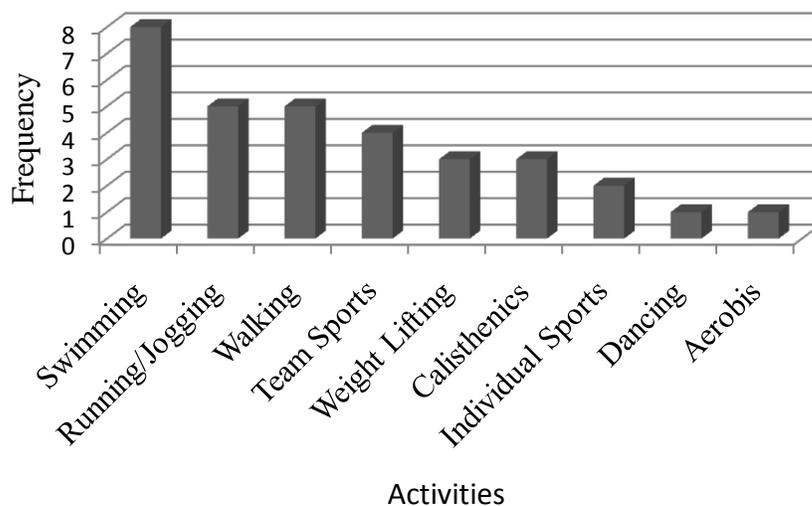


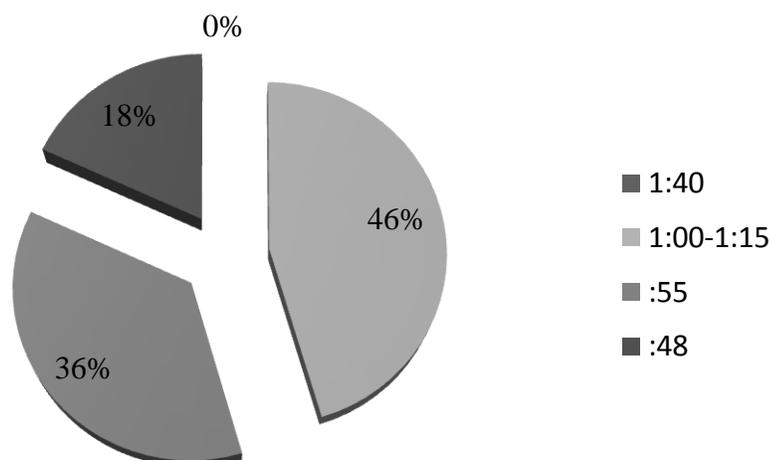
Figure 12: Fitness Activities (n = 33)

### **American Red Cross Lifeguarding Fitness Test.**

Another tool used by the teacher researcher was the American Red Cross Lifeguarding Fitness Test (Appendix C). In the pre-documentation period, the students (n = 11) were administered the American Red Cross Lifeguarding Fitness Test over a two-day period August 30 -31, 2010. The purpose of this test is to determine if the students can demonstrate the pre-requisite standards that are required by the American Red Cross to qualify as a lifeguard. This test consisted of a 300 yard continuous swim with specific requirements of swim strokes that are used. The second part of this test required the students (n =11) to swim 20 yards, surface dive 7 – 10 feet, retrieve a 10-pound object, return to the surface, swim 20 yards back to the starting point with the object and exit the water without using a ladder or steps, within 1 minute, 40 seconds.

The results of this test were unanimous, all the students (n = 11) had no trouble finishing the 300 yard swim without stopping. There were also no problems finishing the timed swim with the weighted object. All students (n = 11) finished under the time allowed of 1:40. The

final times could be divided up in three groups. One group (n = 5; 46%) finished the timed swim between 1:00-1:15, while 36% (n = 4) finished with a time of :55, and the fastest group (n = 2; 18%) finished with a time of :48 (Figure 13).



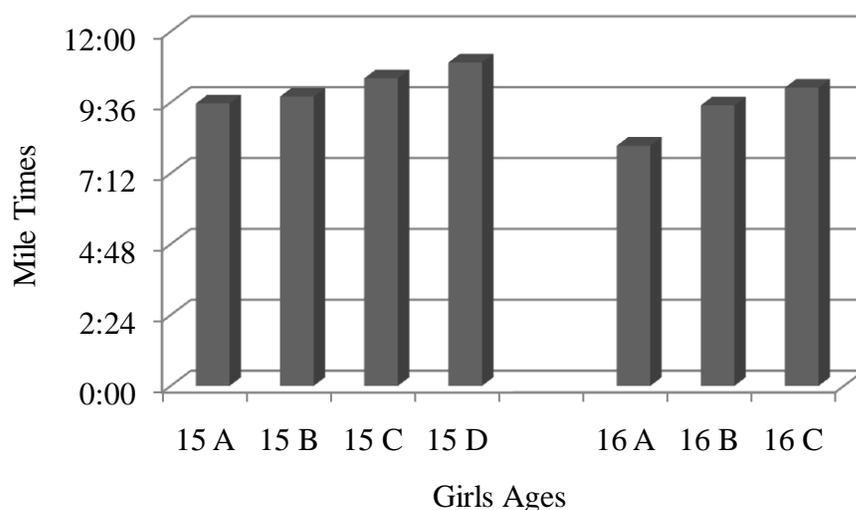
*Figure 13: Swim With Weighted Object Times*

### **Presidential Physical Fitness Test.**

The last tool used by the teacher researcher was the Presidential Physical Fitness Test (Appendix D). In the pre-documentation period, the students (n = 11) were administered the Presidential Physical Fitness Test during the week of September 1 – 3, 2010. The purpose of this test was to see where the students rank in the areas of strength, endurance, and flexibility. The results of this tool was used to measure improvement after the intervention process. The test consists of a one-mile run, number of sit-ups in a minute, sit and reach measurement, and pull-ups for males and females. Due to the lack of the availability of a sit and reach box at the school where the research was being done there is no data for the sit and reach measurement.

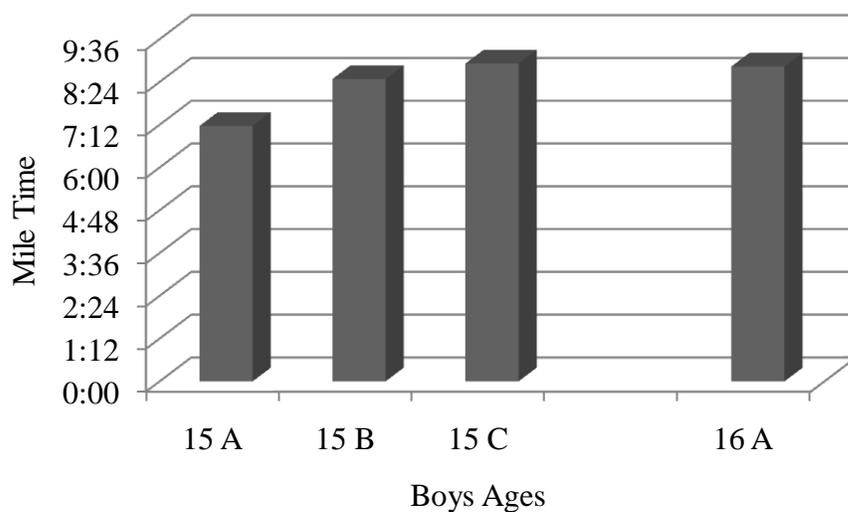
The test began with the one-mile run. The Qualifying Standard for the Presidential Fitness award for the one-mile run for boys age 15 is a time of 7:30, boys age 16 is 7:10, for girls

age 15 the time is 9:58, and for girls age 16 the time is 10:31. Within the research group of students ( $n = 11$ ) four girls and three boys were 15 years of age, and three girls and one boy were 16 years of age. Half of the 15-year-old girls ( $n = 2$ ; 50%) finished their mile under the Qualifying Standard of 9:58; while all the 16-year-old girls ( $n = 3$ ) finished well under the 10:31 Qualifying Standard (Figure 14).



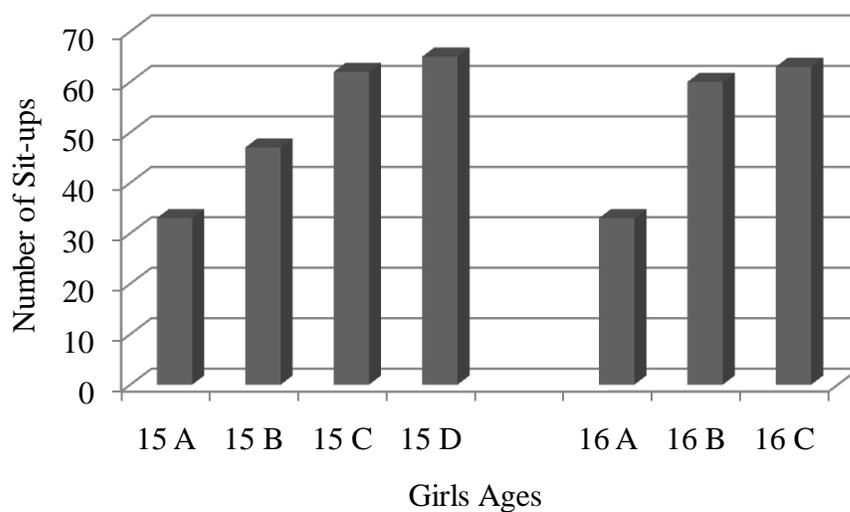
*Figure 14: Mile Times for Girls Ages 15 and 16 ( $n = 7$ )*

The 15-year-old boys had one student ( $n = 1$ ; 33%) finish under the Qualifying Standard of 7:30; while the one 16-year-old boy in the research study did not finish under the Qualifying Standard time of 7:10 (Figure 15).



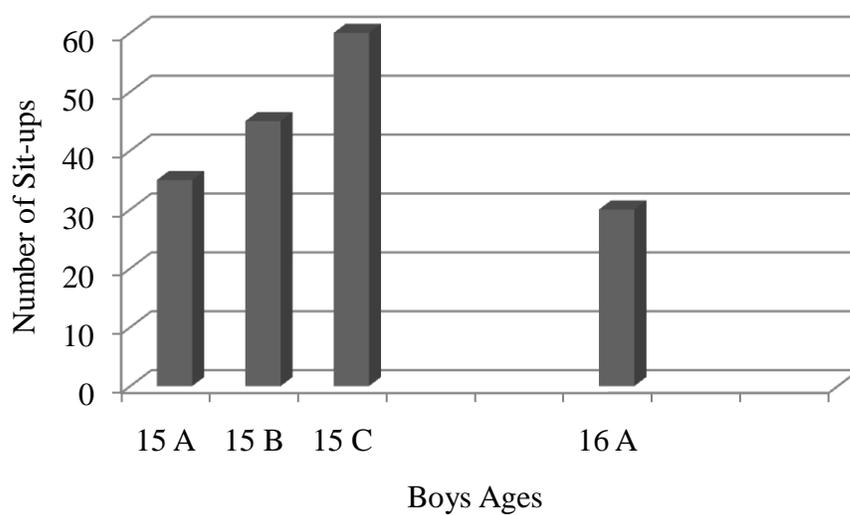
*Figure 15: Mile Times for Boys Ages 15 and 16 (n = 4)*

The next part of the test was the number of sit-ups that the student (n = 11) were able to perform in one minutes. The Qualifying Standard for girls age 15 was 36 sit-ups within one minute, 16-year-old girls was 35 and the Qualifying Standard for 15- and 16-year-old boys was 45 sit-ups within one minute. A majority of the 15-year-old girls (n = 3; 67%) and 16-year-old girls (n = 2; 75%) were able to finish more sit-ups within a minute than the Qualifying Standard (Figure16).



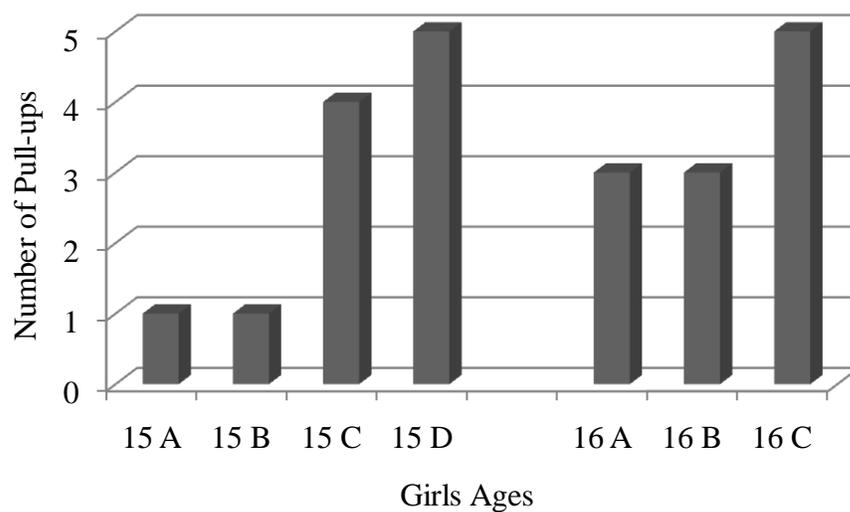
*Figure 16: Amount of Sit-Ups Within One Minute for Girls Ages 15 and 16*

A majority of the 15-year-old boys ( $n = 2$ ; 67%) were able to complete more than the Qualifying Standard. The only 16 year old boy was under the 45 sit-up Qualifying Standard (Figure 17).



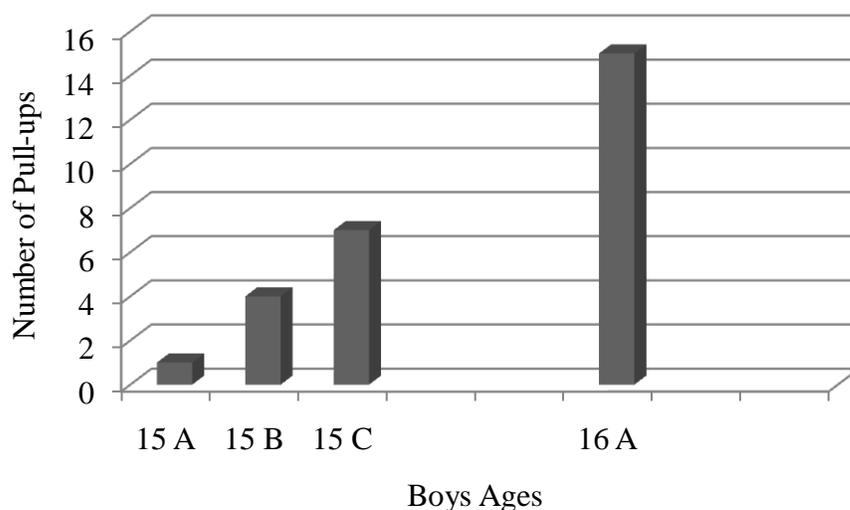
*Figure 17: Amount of Sit-Ups Within One Minute for Boys Ages 15 and 16*

The last part of the Presidential Fitness Test that was administered, the students ( $n = 11$ ) were to perform as many pull-ups on a pull-up bar that they were capable of finishing. The Qualifying Standards for girls age 15 was six pull-ups, girls age 16 was seven pull-ups, and for the boys age 15 the standard was 12 pull-ups and the standard for age 16 was 15 pull-ups. All of the 15-year-old girls were not able to reach the Qualifying Standard of six pull-ups; the highest number of pull-ups completed by a 15-year-old girl ( $n = 1$ ; 25%) was five. The 16-year-old girls were also unable to complete enough pull-ups to reach the Qualifying Standards; the highest number of pull-ups completed by a 16-year-old girl ( $n = 1$ ; 33%) was five (Figure 18).



*Figure 18:* Amount of Pull-Ups Completed by Girls Ages 15 and 16 ( $n = 11$ )

All of the 15-year-old boys were not able to reach the Qualifying Standard of 12 pull-ups; the highest number pull-ups completed by a 15-year-old boy ( $n = 1$ ; 33%) was seven. The one 16-year-old boy was able to reach the Qualifying Standard of 15 pull-ups (Figure 19).



*Figure 19: Amount of Pull-Ups Completed by Boys Ages 15 and 16 (n = 4)*

### **Summary**

The data shows that these high school students involved in this research project are firm believers that physical fitness is important. This is apparent in the answer to the direct question to the importance as well as the amount of time that students say they spend per week outside of school doing physical activities (*Figure 1*). The fact that their parents feel that physical fitness is also important is also key (*Figure 8*). Seeing that the amount of time that parents say their children are spending out of school (*Figure 7*) correlates to the answers that were given by the students (*Figure 1*) leads one to believe that the students truly are spending the time outside of school taking care of their physical fitness. From the results of the data it can seem unclear as to where the students enjoy participating in physical fitness, school or outside of school since the results are the same (*Figure 10 & Figure 11*).

Students seemed to be more interested in team sports as opposed to more exercise-based fitness activity (*Figure 12*). While team sports do offer a level of fitness, they may not be considered as a fitness type activity in most physical education curriculms. This may lead us to

believe that students feel that physical fitness should be fun and is more team orientated than individual orientated.

### **Reflection**

The data collected from the two fitness tests can lead to one conclusion, there was better participation and stronger effort put into the American Red Cross (ARC) Fitness Test because there was something at stake, the possibility of becoming a lifeguard. While students participated in the Presidential Fitness Test they did what they had to do for the sake of completing what was asked of them for the purpose of the research. The idea of receiving something tangible can motivate the student more than just seeing how well they measure up to the standards that are set by an average of students from around the country in their age bracket. The motivation was completing the tasks for the ARC Fitness Test was to gain the lifeguarding certificate.

Motivation of high school students during a physical education can be difficult. Motivating high school students to participate in fitness activities in a physical education class can be harder yet. The data tells me that even though my students believe that physical fitness is important, they are not in tune with what type of activities provides the fitness challenge that they need. Students like the fun and games of team sports but do not realize that if not everyone is at the same level of skill in a particular sport, some students may not get a fitness benefit or may even lead to more resentment toward participating in fitness activities. This research project may give all students the opportunity to try activities that they never have before and see the value in other types of fitness besides playing games. The hope is that they can develop a lifetime benefit to fitness, not just the grade. Maybe if the students stop thinking about what I need to do in physical education to get a good grade and think more about what they learn in physical education classes and are able to apply it to their life and take ownership in the

development of their physical fitness, these attitudes and the sedentary lifestyle that plagues the youth today can change.

### **Probable Causes**

There are a number of reasons for this decline in the fitness levels of high school students, and this is a national concern. Examples of the decline in fitness levels could be due to the sedentary lifestyle of high school students, the negative attitude high school students have toward physical fitness, the lack of student input into what fitness activities are offered, the teaching of skill-related activities as opposed to health-related activities, and the overall limiting of physical education classes in high school.

#### **Sedentary lifestyle of high school students.**

Students have become increasingly inactive and unhealthy due to the increased levels of sedentary behaviors (Rikard & Banville, 2006). The influx of sedentary activities like video games and computers influence youth away from more healthy activities (Wright & Karp, 2006) and are behaviors that can lead to an unhealthy lifestyle. Children are developing habits that lead to unhealthy lifestyles such as watching television, less exercise, and aids in the increase in children being overweight (Johnson & Deshpande, 2000). It is recommended that students participate in at least 60 minutes of physical activity at least 5 days a week to achieve a healthy base (President's Council on Physical Fitness and Sports, 2002, as cited in Reed, et al, 2007). Only 38% of young adults engage in physical activity that meets the recommended guidelines (Center of Disease Control, 1997, as cited in Mears, 2008, Curriculum).

#### **Negative attitude toward physical fitness.**

Some high school students have negative attitudes toward physical education, saying physical education did not fill a need in their lives and they did not find it valuable, and they did

not want to get sweaty (Bibik, Goodwin, & Omega-Smith, 2007). Teaching methods that are common in physical education programs are not considered enjoyable, meaningful or beneficial to students (Graham, 1995, as cited in Wright & Karp, 2006). The use of the Presidential Fitness Test is incorporated in to some schools physical education curriculum. Students may be driven away from physical fitness because of the counterproductive use of fitness tests (Pangrazi, 2004, as cited in Keating, Guan, Ferguson, Chen, & Bridges, 2008). Comparisons to other students' scores and national averages can be intimidating. Fitness testing can be embarrassing to students who could not do well which can affect the student attitude towards physical fitness (Silverman, Keating, & Phillips, 2008). Some components of the fitness test such as chin-ups may be too challenging for a student that is sedentary and overweight thus making them feel self-conscious and maybe even disinterested in any type of physical fitness (Faigenbaum & Mediate, 2006). Some students may also feel the competitiveness with students that are athletes. Students are under the perception that athletes receive preferential treatment, which also leaves them with a negative attitude toward physical education (Bibik et al., 2007). Attitudes and perceptions established during childhood may have an important influence on lifetime fitness patterns (American College of Sports Medicine, 2005, as cited in Bryan et al.,2008).

#### **Lack of student input.**

Some physical education programs are not creative, they tend to follow an age long tradition of militaristic calisthenics and large group sports no matter the individual students' ability (Lambert, 2000) or interest level in these activities. Too many times the fitness activities are based off the knowledge or interests of the physical education instructor. Lack of student input in what activities they wanted to take part in made the students feel powerless and eventually bored with the activities (Bibik,et al., 2007). De-emphasizing or omitting certain

activities from physical education courses limits the student exposure to activities that may be better suited for them (Dodds, 1985, as cited in Mears, 2008, Curriculum).

### **Teaching skill-related versus health-related physical education.**

A curriculum that focuses on skill-related physical education over health-related physical education limits the students to learn activities that they could carry over into their adult life (Sallis & McKenzie, 1991 as cited in Mears, 2008, Curriculum). Team sports dominate physical education in high school so the idea of continuing these activities later in life tends to diminish (Mears, 2008). Most schools have minimal curriculum time to teach students how to lead healthy lives, despite the fact that a recent survey of adults indicated that health was more important for students to learn than some of their core classes (Marzano & Kendall, 1998, as cited in Lambert, 2000). Current physical education programs appear to not be promoting lifetime fitness activities since there seems to be a greater increase in body fat of youth today than that of youth 20 years ago (Ross & Gilbert, 1987, as cited in Hill et al., 1992). There is limited encouragement from physical educators to teach students how to be fit for a lifetime (McSwegin, 1989, & Petray, Leeds, & McSwegin, 1989, as cited in Hill et al., 1992).

### **Decline in physical education class.**

Enrollment in physical education class declines with increasing age, seeing the greatest reduction between eighth and 11<sup>th</sup> grade (DeMarco & Sidney, 1989, as cited in Beets & Pitetti, 2005). Forty percent of high school students are not enrolled in physical education classes of any kind (McCallum, 2000). A possible source of conflict comes from the fact that physical education, in many school districts, does not have any impact on overall grade point average. Much of what students achieve is grade-based. Greater pressure has been placed on schools to increase student performance in “core” subjects as a result of NCLB, sacrificing physical

activities opportunities for children (National Association for Sport and Physical Education, 2006, as cited in Mears, 2008, The). Students enrolled in daily physical education in the past twelve years have declined to provide programs that meet recommendations for instructional time (National Association for Sport and Physical Education, 2006, as cited in Mears, 2008, The). In the meantime, half of American youth are not involved in vigorous activity on a regular basis and there is a decline in physical activity between ages 6 to 18 (Sallis, 1995, as cited in Bryan, et al., 2008). The federal government needs to make an effort to move our nation forward and encourage physical activity as a part of a well rounded curriculum (Johnson & Deshpande, 2000).

### **Summary**

The decline in the fitness levels of today's high school students continues to be a national problem. The causes are never just one reason but instead a combination of these five causes mentioned. Physical educators must do their best to be able to promote a healthy lifestyle in today's high school students. There must be accountability in the fitness programs that are being offered at the high school level to ensure the overall health of high school students as well as teaching them the skills to be able to use these fitness skills for the future.

## Chapter 3

### The Solution Strategy

#### Review of the Literature

The importance of being physically health is on the decline. The truth to this is the fact that the severity of this problem is beginning at a young age. It has been determined that high school students today are less active and have very little interest in changing that. There are ways to change this path to unhealthiness. Offering a curriculum that focused on fitness, giving students ownership in their fitness activities, make fitness testing relevant, and giving students a variety of choices for fitness activities are possible solutions to this epidemic.

#### **Fitness focused curriculum.**

Offering high school students a more diverse curriculum can lead to a higher level of physical activity (Mears, 2008, Curriculum). High school and middle school curriculum should be geared more toward lifetime activities that are individual or dual activities such as golf or tennis, recreational or outdoor adventure activities, and fitness activities such as walking or inline skating (Lambert, 2000). Aside from the encouragement to participate in aerobic activities such as jogging or swimming, students need to participate in a resistance training or otherwise known as strength training (Faigenbaum & Mediate, 2006). Physical education teachers should add a fitness element to team sport whenever possible and/or change the rules to promote more movement (Gilliam, McKenzie, Cicero, & Ray, 1988, as cited in Hill et al., 1992). Teachers need to be aware of the most current fitness trends to develop programs that combine skill and fitness concept learning while maximizing the activity level for all students (Lambert, 2000). Research tells us that with the use of mind maps, cooperative-learning activities, and problem solving allow the students the ability to study the concepts of aerobic fitness while actually participating

in skill activities (Lambert, 2000). Along with a fitness component and fitness instruction, it would be beneficial to include a textbook to the physical education curriculum (Hill et al., 1992). A textbook will not only aid in class instruction but can be used so the students have the opportunity to use them at home (Hill et al., 1992). The use of the textbook can extend the Physical Education curriculum to include topics such as fitness analysis, personal fitness programs, nutrition, and weight control, effect of exercise on the systems of the body, stress reduction, and exercise and sport injuries (Stokes, Moore, & Moore, 1988 as cited in Hill et al., 1992).

### **Student ownership.**

Improvement for physical education programs can begin by listening to students input and collaboration with them, within the state standards, can help students become healthy and more active (Bibik et al., 2007). When student suggestions are implemented by their teachers, collaboration occurs and this contributes to improvement of student attitudes toward physical fitness and their motivation to continue to participate (Rikard & Banville, 2006). This may keep them involved because they have the opportunity to give their own input based on their interests in fitness. Many students are involved in outside of school activities and the most frequent tends to be sports. Students given the opportunity to share fitness skills that they learn out of physical education class give the student more personal meaning and ownership (Rikard & Banville, 2006). Physical Education teachers that consider students' opinions for physical fitness activities in the physical education curriculum see an increase in student participation and motivation (Rikard & Banville, 2006).

**Make fitness testing relevant.**

Physical educators should perform regular fitness tests and report the results to the student and their parents (Hill et al., 1992), this gives the student the opportunity to see growth and improvement. Parents need to be involved as partners in promoting fitness by providing the parents with the tools they need to incorporate into their lives. This can be done by providing parents with information regarding school-based family fitness nights, extra-credit to student by parents keeping track of fitness activities (Hill et al., 1992). Physical Education teachers can increase fitness levels by simply relating each physical activity to a component of fitness (Silverman, et al., 2008) thus allowing the students to understand the relevance of fitness testing. The results of the fitness testing can be related to extracurricular sports, so by extending fitness test results to students out of school activities can be a good way to integrate health-related fitness and fitness testing into physical education class (Silverman,et al., 2008).

**Variety of fitness activities.**

Students that are offered a choice of physical activities are more likely to participate in class and not feel uncomfortable about being able to perform among their peers (Rheingold, 2010). Providing students with a variety of fitness activities in the physical education curriculum can lead to a more meaningful learning outcome (Lambert, 2000) with more students participating in activities that they choose instead of the teacher choosing for them. There should be a sufficient number of elective physical education courses offered to students especially in aerobic exercise (Hill et al., 1992). Schools should consider an increased number of elective physical education courses for high school students, especially juniors and seniors that give them opportunity to choose sport or game type activities or a fitness option (Bibik et al., 2007). Students should be allowed the opportunity for success by providing activities that are

developmentally appropriate (Bryan, et al., 2008). The possibility of a weight training course or Red Cross Lifeguarding can be something that upperclassmen can look forward to as a physical education class. Improvement can be seen in high school students that participate in physical-fitness activities that are both enjoyable and challenging (Wright & Karp, 2006).

### **Summary**

The importance of physical health is something that should be part of any physical education curriculum. In order for students, especially high school students, to thoroughly understand the importance there needs to be some way for them to correlate what they are learning to their own life. With more choices in the physical education curriculum, students can comfortably participate in a fitness activity that suits their own needs. Listening to the students, hearing what it is that they want as part of their fitness plan can only lead to positive participation in physical education and positive attitudes about the importance of physical health in their own life.

### **Project Objective and Processing Statements**

As a result of offering choices in physical-fitness activities and student-designed physical-fitness activities during the period of Monday, September 6, 2010 through Friday, December 3, 2010, the students of teacher researcher's Physical Education/Lifeguarding class will increase their physical fitness levels.

Prior to implementing these interventions, the teacher researcher needed to accomplish the following tasks:

- Develop fitness activities that will allow for student choice.
- Develop guidelines and expectations for the student-designed fitness activities.
- Planning time for students to develop their own fitness activities.

## **Project Action Plan**

The following action research plan outlines the data collection procedures and interventions that were necessary to complete the proposed action research project. It lists the necessary tasks to be completed each week.

### **Preparation**

- Copy student and parent surveys, letters, and consent forms
- Copy American Red Cross Fitness Test check list
- Create a data results list for the Presidential Physical Fitness Test
- Plan physical-fitness activities in the following categories:
  - Swimming/Aquatic
  - Cardiovascular Endurance
  - Strength Training
  - Calisthenics
  - Sport/Game
- Construct guidelines/expectations for student-designed physical-fitness activities
- Send home parent and student consent forms

### **Week 1: Pre-Documentation: August 23 – 27, 2010**

- Distribute parent surveys on August 24, 2010.
- Distribute, administer and collect student surveys on August 25, 2010.
- Gather data from all surveys

### **Week 2: Pre-Documentation: August 30 – September 3, 2010**

- Administer the American Red Cross Lifeguarding Fitness Test August 30 – 31, 2010

- Administer the Presidential Physical Fitness Test September 1 – 3, 2010
- Gather data from all tests

Week 3: Intervention: September 6 – 10, 2010

- Provide students with choices of physical-fitness activities in relation to swimming/aquatics
- Student discussion of fitness activities choices

Week 4: Intervention: September 13 – 17, 2010

- Provide students with choices of physical-fitness activities in relation to cardiovascular endurance
- Student discussion of fitness activities choices

Week 5: Intervention: September 20 – 24, 2010

- Provide students with choices of physical-fitness activities in relation to strength training
- Student discussion of fitness activities choices

Week 6: Intervention: September 27 – October 1, 2010

- Provide students with choices of physical-fitness activities in relation to calisthenics
- Student discussion of fitness activities choices

Week 7: Intervention: October 4 – 8, 2010

- Provide students with choices of physical-fitness activities in relation to sports and games
- Student discussion of fitness activities choices

Week 8 – 9: Intervention: October 11 – 22, 2010

- Introduce guideline/expectations of the student-designed physical-fitness activities plan
- Develop student groups and assign fitness activity category
- Work on student-designed physical-fitness activity

Week 10: Intervention: October 25 – 29, 2010

- Student Group 1 implements fitness activities for swimming/aquatics
- Student discussion of fitness activities

Week 11: Intervention: November 1 – 5, 2010

- Student Group 2 implements fitness activities for cardiovascular endurance
- Student discussion of fitness activities

Week 12: Intervention: November 8 – 12, 2010

- Student Group 3 implements fitness activities for strength training
- Student discussion of fitness activities

Week 13: Intervention: November 15 – 19, 2010

- Student Group 4 implements fitness activities for calisthenics
- Student discussion of fitness activities

Week 14: Intervention: November 22 – 26, 2010

- Student Group 5 implements fitness activities for sports and games
- Student discussion of fitness activities

Week 15: Intervention: November 29 – December 3, 2010

- Complete any unfinished student-designed fitness activities
- Student discussion of all student –designed fitness activities

Week 16: Post-Documentation: December 6 – 10, 2010

- Distribute, administer and collect student surveys on December 6, 2010
- Administer the American Red Cross Lifeguarding Fitness Test December 7 – 8, 2010
- Gather data from survey and test

Week 17: Post-Documentation: December 13 – 15, 2010

- Administer the Presidential Physical Fitness Test on December 13 – 15, 2010
- Continue to gather data from survey and both tests

### **Methods of Assessment**

The purpose of the student survey was to determine the attitudes of high school students toward physical fitness. During the week of December 6, 2010, the teacher researcher administered the student survey to 11 students. The results of the post-documentation student survey were compared to the pre-documentation student survey, which was administered during the week of August 23, 2010 to note any changes concerning the student attitudes toward physical fitness (Appendix A).

The purpose of the American Red Cross Lifeguarding Fitness Test was to determine the fitness levels of high school students. During the week of December 6, 2010, the teacher researcher administered the American Red Cross Lifeguard Fitness Test to 11 students. The results of the post-documentation American Red Cross Lifeguarding Fitness Test were compared to the pre-documentation American Red Cross Lifeguarding Fitness Test, which was

administered during the week of August 30, 2010 to note any changes concerning the students' fitness levels (Appendix C).

The purpose of the Presidential Physical Fitness Test was to determine the fitness levels of high school students. During the week of December 13, 2010, the teacher researcher administered the Presidential Physical Fitness Test to 11 students. The results of the post-documentation Presidential Physical Fitness Test were compared to the pre-documentation Presidential Physical Fitness Test, which was administered during the week of August 30, 2010 to note any changes concerning the students' fitness levels (Appendix D).

## **Chapter 4**

### **Project Results**

The purpose of this action research project was to increase physical fitness levels and improve attitudes of fitness activities. Fitness interests of the students were documented based on information obtained from student surveys and parent surveys. The fitness levels of the students were based on information that was obtained from the ARC Lifeguarding Fitness Test and the Presidential Physical Fitness Test. The interventions implemented to increase the fitness levels and improve attitudes included offering choices in fitness activities and student designed fitness activities. The interventions were implemented for 11 students ranging from 10<sup>th</sup> grade through 12<sup>th</sup> grade. The research was carried out from August 23, 2010, through December 15, 2010.

#### **Historical Description of the Intervention**

In the first week of pre-documentation, August 23<sup>rd</sup> – 27<sup>th</sup> 2010, very few of the parent and student consent forms were turned in, only 11 out of 24 students. It was very frustrating and made me a bit nervous about how I would be able to get measureable results from so few numbers. The parent surveys were distributed early in the week with a majority of the parent surveys returned. The student surveys were distributed as well with a lower number of the surveys returned. It was disappointing that a few of the students were not concerned with doing the survey or why I had asked them to complete them for me.

In the second week of pre-documentation, August 30<sup>th</sup> – September 3<sup>rd</sup>, 2010, I first administered the American Red Cross Lifeguarding (ARC) Fitness Test. This test is also used as a prerequisite to determine whether or not the students would be able to become certified as an ARC Lifeguard. A majority of the students were well prepared and did very well; however,

there were a few students that had trouble with the swimming skills. I also began administrating the Presidential Physical Fitness Test during this pre-documentation week. The weather worked in my favor and I was able to get the students outside to run the mile. I was only able to test three components of the Presidential Fitness test, mile run, sit ups, and bent arm hang/pull ups, due to two factors; the week schedule was different because of the celebration of Homecoming and the lack of the proper equipment to test the sit and reach. However, the three components, I believe were sufficient in measuring fitness levels.

In the first week of intervention, September 6<sup>th</sup> – 10<sup>th</sup>, 2010, the students were given choices of physical fitness activities related to swimming/aquatics. There were three choices given that were equally challenging depending on the swimming skill level of the student. Each group had the same 200 yard warm-up and 100 yard cool down. The main set distance for each group was 1000 yard and the choices that the student had were as follows: group one's workout 500 yard swim (non-stop) and a 500 yard kick with a kick board, no fins. Group two's workout was alternating a 200 yard swim and a 200 yard kick with a kick board, no fins equaling 1000 yards. Group three's workout also totaled 1000 yards but they were to alternate 100 yard swim and a 100 yard kick with a kick board using fins. Each fitness activity allowed the student to work at a pace that they were comfortable with and there was no comparison to others. The students were also able to use a variety of aquatic equipment like the kick board and fins as part of the fitness activity. The students seemed to like the idea of being able to determine for themselves which workout they felt they would be able to successfully complete. Discussion of the experience gave the students a chance to reflect on the choice that they had made and shared that this would also give them the opportunity to challenge themselves more the next time when given choice.

In the second week of intervention, September 13<sup>th</sup> – 17<sup>th</sup>, 2010, the students were given choices of physical fitness activities related to cardiovascular endurance. During this activity the students were given workout choices that were completed on the outdoor track. Everyone in the class did the same warm-up/stretching and cool down/relaxation but the bulk of their workout again was based on three choices. The time to complete the workout and distance were the same for all three choices, only the approach to finishing them were different. Each group was to complete two miles (the equivalent to eight laps around the track) yet at their own pace. Group one's option was to run the complete two miles, group two was to alternate running two laps and walking two laps, and group three was to alternate run one lap and walk one lap. During class discussion students thought that the fact that the distance of each workout was the same was perfect this way, again, there would be no comparing what one person does as better than the other. Students shared that there can be a variety of factors that can affect the choices that they would make for a workout; such as the weather, if it was too hot some may not want to complete the more challenging workout. Another factor that was discussed was just how they might feel on any given day; on a day that they are more energized they may feel like pushing themselves a bit more. Some of the students that were also athletes discussed the fact that on competition days having the choice to do a lower keyed workout would be a benefit for them. The only negative that came out of this was the fact that some students thought that there should be a "no workout" choice as well.

In week three of the intervention, September 20<sup>th</sup> – 24<sup>th</sup>, 2010, the students were given choices of physical fitness activities related to strength training. Students were easily able to stay focused on this workout because they liked working out in the fitness center. This week the students were given two choices, one that worked on muscular endurance and the other

concentrated on muscular strength. It was no surprise to me how the class chose their workouts, the girls focused on the muscular endurance (lighter weight with higher number of repetitions) and the most of the boys targeted their muscular strength (higher weight and lower number of repetitions). The only problem was that the students were not able to complete the tasks in the given time because the students had to take the time to change the amount of weight on a machine as well as some of the seat adjustments. The students enjoyed the challenges and discussed the importance of having a strength component as part of their fitness routine.

In the fourth week of intervention, September 27<sup>th</sup> – October 1<sup>st</sup>, 2010, the students were given choices of physical fitness activities related to calisthenics. This had to be by far the least enjoyable, for me to administer, as well as for the students to participate in. I had to spend a large part of the class period disciplining a group of students because this was just not something that they liked. This workout was set up more along the lines of stations instead of choices of different workouts. The station activities consisted of fitness exercises such as push-ups, sit-ups, planks, mountain climbers, up/downs, lunges, and jump roping. Each student was to go through the stations routines once and then they were able to choose, out of the exercises that they liked the best, and rotate to those stations. First time through the rotation worked but when students choose the stations they liked the best there was quite a bit of unbalance in the design. Some students just choose to go where their friends went or they just had a difficult time following directions. During the class discussion there was a wide consensus that as of so far this was not one of their favorites.

In week five, October 4<sup>th</sup> – 8<sup>th</sup>, 2010, the students were given choices of physical fitness activities related to sports and games. This was a perfect week for this; it was a short week due to parent-teacher conferences. Students were given three choices of games to play; however,

because of the small size of the class we only had two of the game choices played, basketball and badminton. The students liked being able to set up their own teams and determine the rules by which they were going to play. Another point mentioned in discussion was the fact that it felt like a perfect stress release to just play a game and not have to be thinking about fitness, however, a rebuttal comment was to the fact that was the hardest workout so far.

In week six and seven, October 11<sup>th</sup> – 22<sup>nd</sup>, 2010, the students were to begin the development of their own fitness activities. Because the students were planning the activities that were to be implemented in class they were given a two week time span to plan. The students were able to choose the people they worked with but what activity they planned for was at random by picking their choice from a hat. On the positive side of this, students asked a lot of questions, looked for guidance to head them in the right direction; also some of the students had previous knowledge in their fitness area and were excited to make up a workout routine. On the negative side, there were students that would not take the task seriously, they felt the random drawing was unfair, and some students tried to intimidate other students to trade fitness activities with them.

In the eighth week, October 25<sup>th</sup> – 29<sup>th</sup>, 2010, the first group of students implemented their fitness activity for swimming/aquatics. The students did come up with some original ideas but were not sure how to facilitate the activities so the behaviors of some of the students made it hard for the student facilitators to control the class. This had me wondering if I should have had the students come up with the workout but I would facilitate the activity. At this point I did not want to change who facilitates as it would be unfair to this group that had to struggle with the behaviors of their classmates. The students were in agreement not to change the format and would try to be better behaved for the remaining group implementations.

In week nine, November 1<sup>st</sup> – 5<sup>th</sup>, 2010, the second group of students implemented their fitness activity for cardiovascular fitness. We were lucky to have good weather so the students were able to use the outdoor track for their fitness activity. I was a bit disappointed because the students followed the same activities that I had them do earlier in the research. I would have liked them to be more creative but they shared that they enjoyed the activity the first time we did it and it kept the whole class moving so they thought sticking with the same format would be easier to implement.

The week of November 8<sup>th</sup> – 12<sup>th</sup>, 2010, was a short week due to there being no school on Friday November 12<sup>th</sup>. I also had scheduled a written test for the lifeguarding course that had to be taken. I had scheduled time in my project action plan should I run into a week that did not allow me to follow the original timeline so the strength training group will implement their activity next week and the other two will follow in the order assigned.

In week 10, November 15<sup>th</sup> – 19<sup>th</sup>, 2010, the third group of students implemented their fitness activities for strength training. This group did a good job trying to use all the equipment in the weight room and the rest of the class stayed focused and on task. This group ran into the same problem that I had earlier with not having the time to finish all that was planned. The only thing that this group did not think about was having different levels for the class to work at. They responded in a way that I did not think about at first, they made the point that not all students would not be setting the amount of weight the same, they would lift the weight that best fit them. This group had a great plan and the rest of the class agreed that it could be utilized any time that they were in the weight room.

During week 11, November 22<sup>nd</sup> – 26<sup>th</sup>, 2010, the student group that was to implement the calisthenics fitness activity was to present. Although this group had a wide variety of

exercises in their activity, they did not offer the opportunity for the students to work at their own level or pace. This group performed more of a follow the leader type of activity, although effective, it did not allow the different levels for all the students to be successful at their own level. During the discussion most of the students agreed that they did like the variety of exercises but when an exercise was too difficult they just sat it out until they could join in on an exercise that they could perform.

In week 12, November 29<sup>th</sup> – December 3<sup>rd</sup>, 2010, the final group of student-designed fitness activities implemented fitness activities that related to sport and/or games. The idea of playing games was something the class always enjoys. This group did this a little different than the way I had implemented it in the beginning of the research. They chose to play only one game but split the class into competitive and noncompetitive allowing the students the choice of how intensely they wanted to play. This worked although the split of the class was very apparent. I was not so sure that the teams were separated so much into the competitiveness as it was groups of friends. However, the class stayed active and everyone participated in the groups that they choose.

During the first week of post-documentation, December 6<sup>th</sup> – 10<sup>th</sup>, 2010, I administered the student survey and the American Red Cross Lifeguarding Test. The surveys were administered in class and returned the same day so more were turned in than during pre-documentation. While the students did not mind swimming the 300-yard distance swim again all but one opted out of swimming with the weighted brick; the reason was that the students thought it was hard enough the first time and were fearful that if they did not swim it in the time allowed they would not receive their Lifeguard certificate. Even though I assured them that was not the reason for the post test, they were not willing to give it another try.

The second week of post-documentation, December, 13<sup>th</sup> – 15<sup>th</sup>, 2010, I was to administer the Presidential Physical Fitness Test to the students. Due to the weather, we were unable to go to the outside track and run the mile and with the end of the semester upon me and the scenario testing that had to be done for the Lifeguarding class, there was no time for me to administer the Presidential Physical Fitness Test as a whole and without some of the main components missing it would be hard to measure the change in the students fitness levels so it was not used.

### **Interventions.**

In order to improve my students' fitness levels and their attitudes toward fitness, I provided my students with choices of fitness workouts throughout this research process. Students that are offered a choice of physical activities are more likely to participate in class and not feel uncomfortable about being able to perform among their peers (Rheingold, 2010). The reason for offering the choices to my students was due to the fact that so many times the fitness activity of the day never seemed to be engaging to all my students. It seemed as though some students were not being challenged while others were unsuccessful because the activity was beyond their fitness level. The physical education curriculum has always had a fitness component allowing the individual teacher to decide what activities in which the students participated.

Students in my classes are always willing to give me ideas of what fitness activity we should be doing instead of what I have planned for them. The intervention of the student designed fitness activities was going to give the students the chance to follow through with those ideas and have ownership in their physical education class. Improvement for physical education programs can begin by listening to the students and collaborating with them (Bibik et al., 2007) when it comes to planning for fitness activities. In order for this to be done there had to be

planned classroom time that we do not normally plan for as a part of our physical education curriculum. In order for this intervention to be successful I had to plan classroom time for the students to meet with group members and plan fitness activities that follows our state standards.

### **Reflection.**

This research project has taught me a several things. I have learned that sometimes as a teacher of Physical Education I tend to stick with fitness activities that I am comfortable with or that I have been doing for a long time because they are easier for me to implement. I need to look at the levels or the needs of my students more when designing a fitness activity. Because of realizing this I want to learn other activities that the students may enjoy even if this means taking a class or relying on my colleagues to teach me new fitness programs that are out there. I think I stick with what I know because it makes planning easier for me but I have to step outside the box the same way I expect my student to. Before using these interventions, my fitness days in physical education class were very generic and I had the same expectations for all the students. Using these interventions has changed the way I plan for fitness days in my physical education classes. I need to take the time to develop fitness activities that challenge all of my students at a fitness level that they can be successful and can enjoy. I also think I expect every class to run as smoothly as the last and I have learned, especially with this class, that this is not true. I think this research has helped me learn how to set my expectations of the class early so that they have an understanding of the commitment of the class and how serious the information in the class will be for them. My hope is to become a stronger teacher and have better student participation. I think this research has helped me move in that direction. It has helped me focus on what is working in my classes and what is not and to have the strength to change.

## **Presentation and Analysis of Results**

The purpose of this action research project was to increase physical fitness levels and attitudes of physical fitness activities. Fitness interests of the students were documented based on information obtained from student surveys. The fitness levels of the students were based on information that was obtained from the ARC Lifeguarding Fitness Test. The interventions implemented to increase the fitness levels and improve attitudes included offering choices in fitness activities and student designed fitness activities. The interventions were implemented for 11 students ranging from 10<sup>th</sup> grade through 12<sup>th</sup> grade. The post-documentation data collection was carried out from December 6, 2010, through December 15, 2010.

### **Student Survey.**

During post-documentation the teacher researcher administered the Student Survey (Appendix A). The purpose of the survey was to determine students' attitude toward and interest in physical fitness activities in their physical education class. Included on the survey were six questions. In the post-documentation period, the students (n=11) were given a student survey on December 6, 2010 and asked to complete it in class and place it in a manila folder on the back table at the back of the room. On the day of the survey 3 of the 11 students were not present so the results are based on 72% return (n = 8). One question was a frequency scale, four questions were on a 4-Point Likerts Scale, and one question was a check list of fitness activities they enjoy.

The first question asked the students how much time per week they spent doing physical activity. The answers given ranged from *0 – 20 minutes* to *greater than 60 minutes* increasing by 10 minute span. The results showed that a majority of students (n = 6, 75%) said that they spend greater than 60 minutes a week doing physical activity (Figure 20).

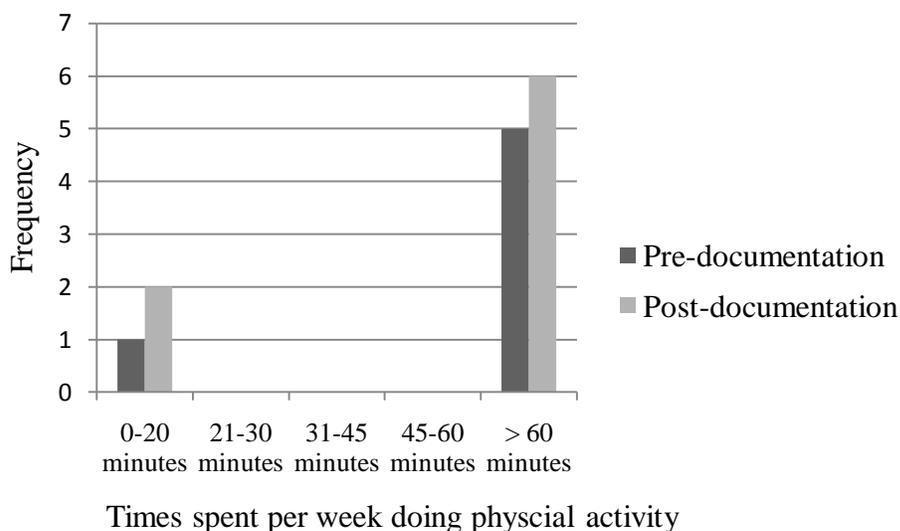


Figure 20: Average Time Per Week Spent on Physical Activity (n = 14)

There were similar results in this question from pre-documentation (83%) to post documentation (75%) regarding >60 minutes. Two more students participated in the questions but the results were similar.

With the next four questions, the students were asked to indicate how much they agreed or disagreed with four statements, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. For the first statement, the students were to indicate how much they agreed with the belief that being physically fit is important. Results showed that 88% (n = 7) of the students strongly agree that physical fitness is important (Figure 21).

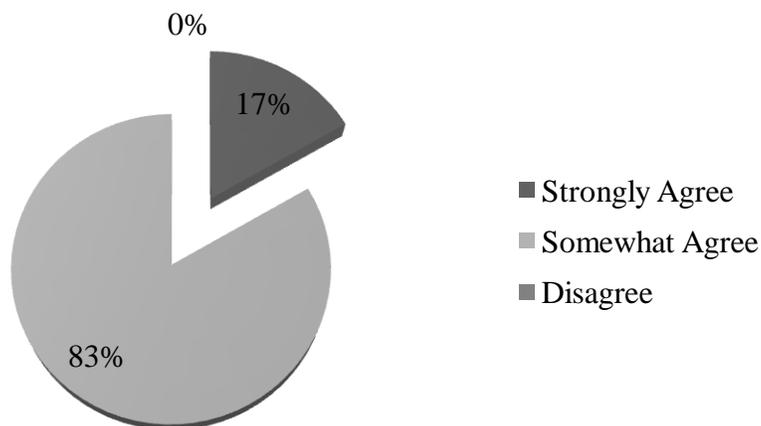


Figure 2: Pre-Documentation Physical Fitness Importance (n = 6)

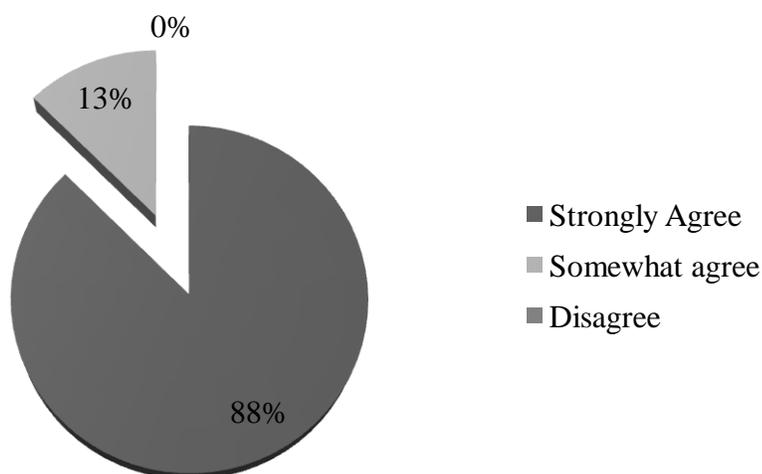
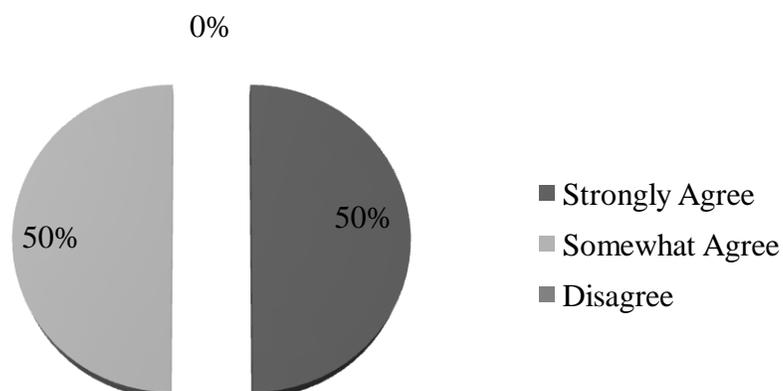


Figure 21: Post-Documentation Physical Fitness Importance (n = 8)

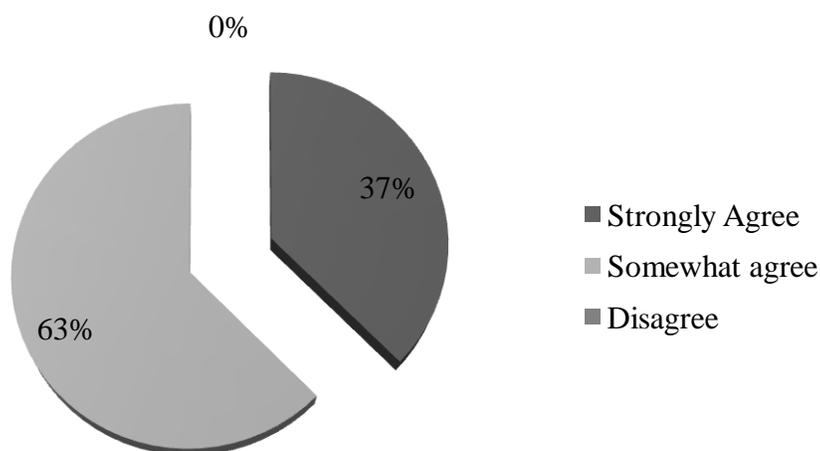
The results are comparatively the same as can be seen in Figures 21 and 22. The numbers seem high in the post documentation but that is based on the number of students completing the survey pre-documentation (n = 6) which is lower than the number completing the survey post documentaion (n = 8).

The next statement asked the students if they believed that they were physically fit, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. Results showed that 63% (n = 5)

somewhat agreed to being physically fit with the remaining 37% (n = 3) strongly agreeing to be physically fit (*Figure 22*).



*Figure 3: Pre-Documentation Student Belief in Their Fitness (n = 6)*



*Figure 22: Post-Documentation Student Belief in Their Fitness (n = 8)*

During the pre-documentation, the responses from the students (n = 6) were split between somewhat agree (n = 3) and strongly agree (n = 3) as to whether the students thought they were physically fit. While in the post documentation results, 63% (n = 5) somewhat agreed that they were physically fit with the remaining 37% (n = 3) strongly agreeing to this statement.

The students were then asked if they enjoyed participating in fitness activities in PE class, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. The results show that 50% (n = 5) of the students strongly agree to enjoying the physical fitness activities in their PE class while 25% (n = 2) of the students do not enjoy PE physical fitness activities (*Figure 23*).

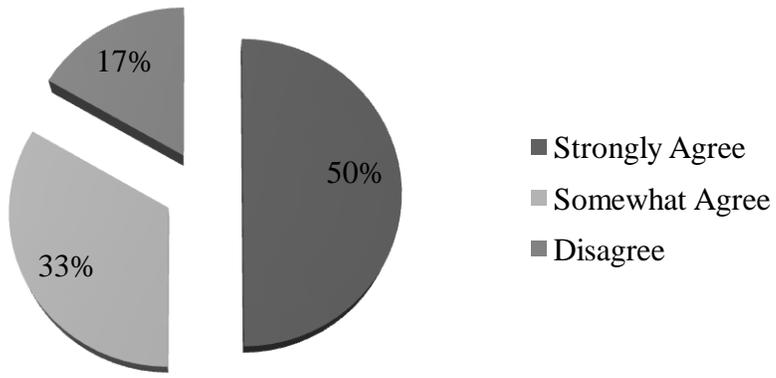


Figure 4: Pre-Documentation Enjoyment in PE Physical Fitness (n = 6)

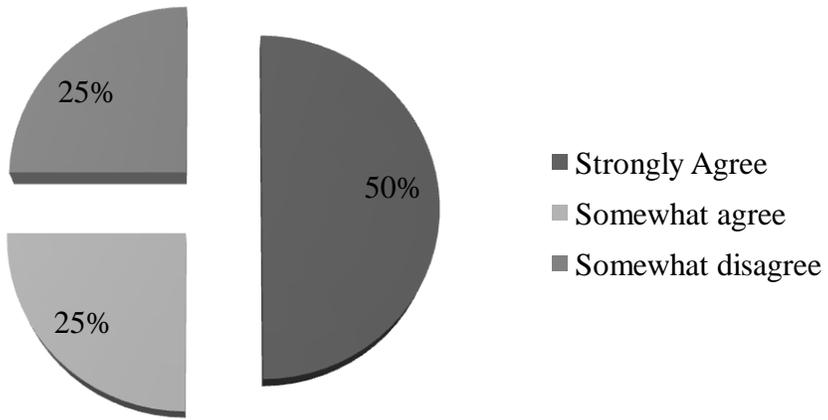
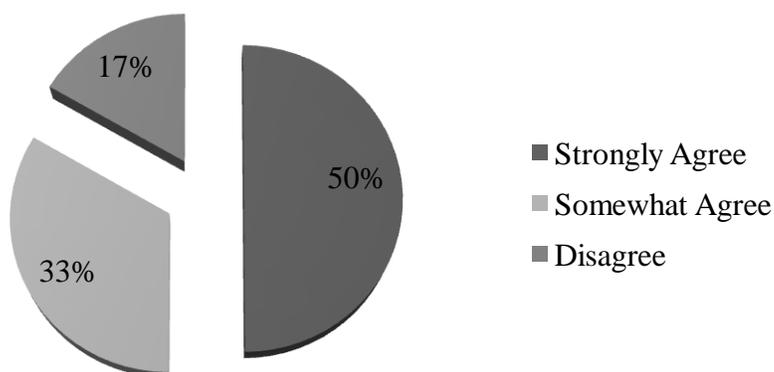


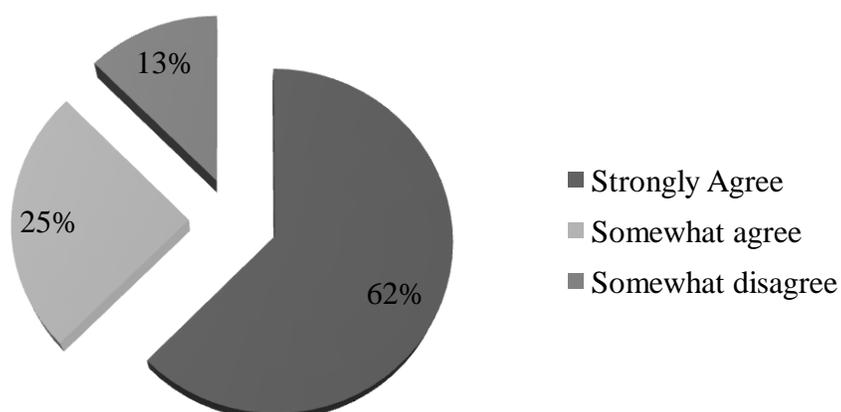
Figure 23: Post-Documentation Enjoyment in PE Physical Fitness (n = 8)

While it seems as though more students do not like their PE class physical fitness activities in post-documentation (25%,  $n = 2$ ) the number of completed surveys during post-documentation ( $n = 8$ ) could have contributed to the increases.

The last statement in this survey asked the students their agreement with the statement of how much they enjoyed participating in fitness activities outside of school, 1 equaling *strongly disagree* to 4 equaling *strongly agree*. A majority of student (62%,  $n = 5$ ) strongly agree to enjoying outside of school fitness activities while 13% ( $n = 1$ ) does not enjoy outside of school activities (*Figure 24*).



*Figure 5: Pre-documentation Enjoyment in Outside of School Fitness Activities (n = 6)*



*Figure 24: Post-Documentation Enjoyment in Outside of School Fitness Activities (n = 8)*

The data from pre-documentation to post documentation for this question on the survey seems very similar in the results.

The last section of this survey was a check list of fitness activities that the students were to check if they enjoyed participating in them. The total number of student responses in post documentation was 45. Team sports (n = 8; 18%) ranked the highest among the student responses. Lowest ranked was aerobics and individual sports (n= 3; 7%).

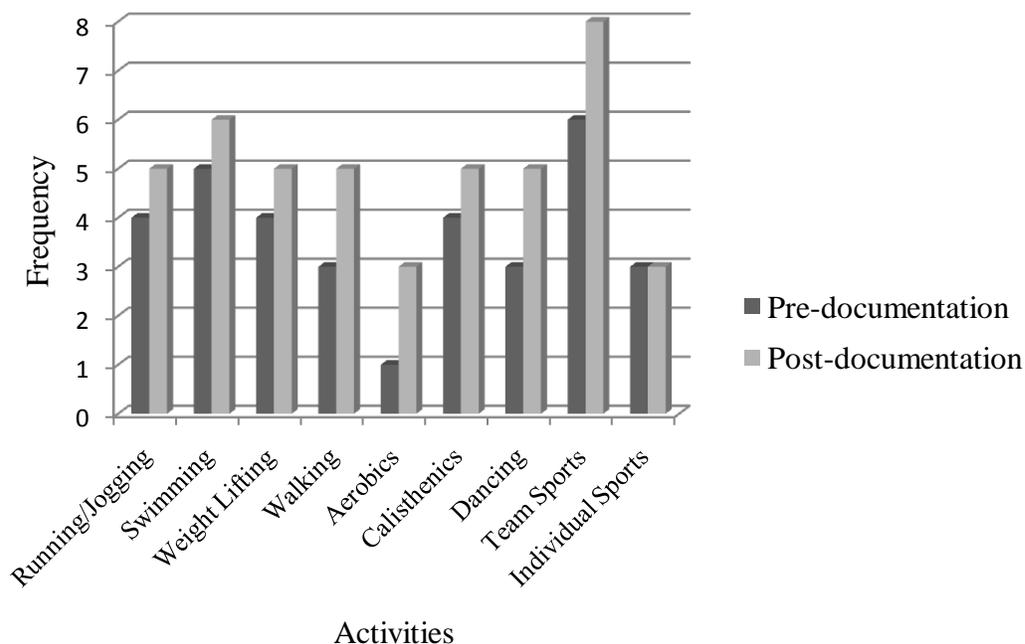


Figure 25: Fitness Activities (pre-documentation n = 33 & post-documentation n = 45)

The choice of Team Sports remained the leader in both pre-documentation (n = 6, 18%) and post documentation (n = 8, 17%). There was a 3% increase in the number of students that enjoyed aerobics from pre-documentation to post-documentation. The interest in individual sports remained the same (n = 3).

#### **American Red Cross Lifeguarding Fitness Test.**

The second tool used by the teacher researcher was the American Red Cross Lifeguarding Fitness Test (Appendix C). In the post documentation period, the students (n = 11) were administered the American Red Cross Lifeguarding Fitness Test over a two-day period December 7 -8, 2010. The purpose of this test was to determine if the students would demonstrate the pre-requisite standards that are required by the American Red Cross to qualify as a lifeguard. This test consisted of a 300-yard continuous swim with specific requirements of swim strokes that are used. The second part of this test required the students (n =11) to swim 20

yards, surface dive 7 – 10 feet, retrieve a 10-pound object, return to the surface, swim 20 yards back to the starting point with the object and exit the water without using a ladder or steps, within 1 minute, 40 seconds. During post documentation the students (n = 11) completed the 300-yard swim as they did in pre-documentation. The students were very hisitant to complete the brick swim again, explaining that it was hard enough to finish the first time and because it was not required that they perform the brick swim a second time in order to receive the Lifeguard certification, the students refused to purform that skill again in post documentation.

### **Summary**

The post-documentation data continues to reaffirm the idea that the high school students in this research project are aware of the importance of being physcally active (*Figure 2 & Figure 21*). Due to the fact that the pre-documentaion and post-documentation data is similar. The concern that comes from the data is the fact that there was really no change in the student response when asked about their enjoyment in fitness activities in their PE classes (*Figure 4 & Figure 19*). The students still choose team sports as the activity they were interested in doing however, the interest in some of the other activities show an increase compaired to the pre-documentation data (*Figure 21*).

### **Conclusion and Recommendations**

#### **Conclusions.**

Looking back at the pre- and post analysis of the data there was no real difference in the students attitudes toward their physical fitness. The fact that the students in this research project had believed that being physically fit was important from the beginning of the study made it difficult to see any change in their attitudes. I think that offering the students other fitness choices did increase their knowledge in other areas of fitness that they may not have had an

interest in before this study, that can be seen in the post-documentation of the fitness activities that the students enjoy (*Figure 25*). I think that if this study could have been done in a general Physical Education class instead of a Lifeguarding/Physical Education class, there may have been more time to use the post-documentation data to measure the students' fitness levels. A general Physical Education class would have allowed me more time to complete the fitness testing which was difficult to do in a Lifeguarding class because of the class design to complete the standards set by the American Red Cross for the students to become a certified Lifeguard.

Although there was no data evidence that the fitness levels and the attitudes about fitness activities changed, during the interventions I observed more student participation with the fitness activities and I was more aware of the different levels of fitness of my students and could plan accordingly to those different levels. Therefore, I concluded that giving the students choices in fitness activities in physical education classes and allowing the students to design their own fitness activities can increase the level of participation in those fitness day instruction.

### **Recommendations.**

After the completion of this study, the interventions that I was using will continue to be a part of my planning for future Physical Education classes. The interventions did work in class and I enjoyed planning them as well as did the students. I think this is a topic that is definitely worth more research, however, as mentioned before a general Physical Education class may make a better research study group. I believe that students want to be a part of their fitness choices, so we as physical education teachers should give them those choices in our classes as well as having students be a part of what is taught in their physical education classes.

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## **Appendices**

Appendix A  
**Parent Survey**

1. On average, how much time per week does your child spend doing physical activities outside of school? (for example: walking/jogging, sports activities, Wii Fit/Active, yard/household chores)

0-20 min      21-30 min      31-45 min      45-60 min      >60 min

**Please indicate your level of agreement or disagreement with each of the following statements**

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
2. It is important for my child to be physically fit.	1	2	3	4
3. My child is physically fit.	1	2	3	4
4. My child enjoys participating in fitness activities in PE class.	1	2	3	4
5. My child enjoys participating in fitness activities outside of school.	1	2	3	4

6. In which of the following activities does your child participate? *(please check all that apply)*

Running/Jogging

Swimming

Weight Lifting

Walking

Aerobics (example: Jazzercise, Step Aerobics, Wii Fit/Active, etc.)

Calisthenics (example: sit-ups, push-ups, jumping jacks, etc.)

Dancing

Team Sports (example: basketball, volleyball, soccer, etc.)

Individual Sports (example: tennis, golf)

Other *(please list)* \_\_\_\_\_

Appendix B  
**Student Survey**

1. On average, how much time per week do you spend doing physical activities outside of school? (for example: walking/jogging, sports activities, Wii Fit/Active, yard/household chores)

0-20 min      21-30 min      31-45 min      45-60 min      >60 min

**Please indicate how much you agree or disagree with each of the following statement**

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
2. I believe being physically fit is important.	1	2	3	4
3. I believe I am physically fit.	1	2	3	4
4. I enjoy participating in fitness activities in PE class.	1	2	3	4
5. I enjoy participating in fitness activities outside of school.	1	2	3	4

6. What types of fitness activities do you enjoy? *(please check all that apply)*

Running/Jogging

Swimming

Weight Lifting

Walking

Aerobics (example: Jazzercise, Step Aerobics, Wii Fit/Active, etc.)

Calisthenics (example: sit-ups, push-ups, jumping jacks, etc.)

Dancing

Team Sports (example: basketball, volleyball, soccer, etc.)

Individual Sports (example: tennis, golf)

Other *(please list)* \_\_\_\_\_

## Appendix C

**Presidential Physical Fitness Award Qualifying Standards****National Physical Fitness Award Qualifying Standards**

<b>Sex</b>	<b>Age</b>	<b>Curl-ups</b>	<b>Mile Run</b>	<b>Pull-ups</b>
F	15	16	9:58	6
F	16	35	10:31	7
M	15	45	7:30	12
M	16	45	7:10	15

Appendix D

### Lifeguarding Precourse Skills Checklist

	Names of Participants									
Swim 300 yards continuously, using these strokes in the following order: <ul style="list-style-type: none"><li>• 100 yards of front crawl using rhythmic breathing and a stabilizing, propellant kick. Rhythmic breathing can be performed either by breathing to the side or to the front.</li><li>• 100 yards of breaststroke using a pull, breathe, kick and glide sequence.</li><li>• 100 yards of either the front crawl or breaststroke. The 100 yards may be a combination of the front crawl and breaststroke.</li></ul>										
Starting in the water, swim 20 yards using the front crawl or breaststroke, surface dive 7-10 feet, retrieve a 10-pound object, return to the surface, swim 20 yards back to the starting point with the object and exit the water without using a ladder or steps, within 1 minute, 40 seconds.										

American Red Cross Lifeguarding Instructor's