

# Improving the Quality of Physical Fitness of Elementary School Students by Using Physical Fitness Control Book

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**Abstract.** The quality of physical fitness is very important for elementary school students in order to keep fit to study and socialize the society, and develop motor, affective, and cognitive aspects. The research aimed to find out, control, and improve the elementary school students' physical fitness. The research design is Research and Development applied "cross-sectional" by using a qualitative and quantitative method. The phases of the research involve: (1) measuring elementary school students' physical fitness, involving 204 male and 212 female by using purposive sampling technique. (2) Developing the physical fitness control book for elementary school students. (3) Trying out the implementation of physical fitness control book to the 5th grade of elementary school students involving 28 male and 34 female. The instrument of the research is Indonesian Physical Test. The result of the research shows that most of the students' physical fitness inadequate and poor category while a few of them is in a good, very good, and very poor category. Through limited try out of the control book, it is found that the male students' mean scores increased into 1,036 and the female students' score increased into 0,764. There is an improvement physical fitness.

## 1. Introduction

The quality of physical fitness is very important for elementary school students in order to keep fit to study and socialize the society. This quality will be the first step to achieving further physical fitness and develop motor, affective, and cognitive aspects. The people needed to pay attention toward the elementary school students' growing and the development of their physical, mental, and cognitive aspects. One of the ways is by improving their physical fitness.

One's physical fitness quality, especially elementary school student, is determined by several factors including physical exercises, life style and dietary habit involving nutrition intake, rest, and the environment. Those factors are connected and supported each other in order to achieve physical fitness. The elementary school students' physique should be trained through physical exercises so that they will be excited in doing school's chores without feeling exhausting and lazy. The physical exercises in elementary school are implemented through physical education, physical and health, physical extracurricular, gymnastic, and others.

In fact, most of the elementary school students in Padang have adequate physical fitness, feel exhausting during the learning process, and tend to pass out during the ceremony. Based on the survey done by Physical Fitness Center of National Education [1], it is found that generally, the learning outcome of PJOK at school affects the physical fitness for less than 15% from all of the students' population. The quality of the students' physical fitness at all education extent in Indonesia is low. It is found that for about 45.97% students are categorized into a poor category; 10.71% students are



categorized into very poor; 37.66% students are categorized into an adequate category, and 5.66% students are categorized into the good category.

The physical fitness quality of the elementary school students (10-12 years old) is: (1) in SD Inti, 10% of the students are in good category; 35% of the students are adequate category; 44% of the students are in poor category, and 11% of the students are in very poor category. (2) In SD Imbas, 1% of the students are in very good category; 14% of the students are in good category; 42% of the students are inadequate category; 36% of the students are in poor category; and 7% of the students are in a very poor category. In other words, 55% of the students in SD Inti and SD Imbas are categorized into poor category [2].

The poor quality of the students' physical fitness cannot be allowed since it will affect their health, motor, affective, and cognitive aspects. The improving of the students' physical fitness quality can be achieved through physical fitness control book. By using physical fitness control book, it will help in determining: (1) the students' physical fitness quality, (2) the good and bad physical fitness's components, and (3) the students' participation related to the physical activities in school or in the society.

## 2. Research Methodology

The research design is Research and Development applied "cross-sectional" by using the qualitative and quantitative method. The research is done in three phases involves; (1) measuring elementary school students' physical fitness, involving 204 male and 212 female by using purposive sampling technique. (2) Developing the physical fitness control book for elementary school students. (3) Trying out the implementation of physical fitness control book to the 5th grade of elementary school students involving 28 male and 34 female. The instrument of the research is Indonesian Physical Test for 10- 12 years old (reliability for male students is 0.911 and 0.942 for female students while the validity for the male is 0.884 and 0.897 for female). Then, the data was analyzed by using descriptive statistic.

## 3. The Result of the Research

### 3.1. Descriptive Analysis of the Physical Fitness Quality of the Elementary School Students

It is found that for male students, the highest score of physical fitness gotten by male students is 24; the lowest score is 7; the mean score is 14.294; the median is 14; mode is 13, and deviation standard is 3.964. On the other hand, for female students, it is found that the highest score gotten is 23; the lowest score is 7; the male score is 14.452, the median is 14, the mode is 14, and deviation standard is 2.945. Based on those data, the total and its percentage could be seen as the table below:

**Table 1.** Percentage of the Physical Fitness Level Category of Elementary School Students' in Padang

Physical Fitness of Level Category	Sex			
	Male		Female	
	Total	Percentage	Total	Percentage
Very Good (BS)	19	9	4	2
Good (B)	26	13	36	17
Adequate (S)	61	30	98	46
Poor (K)	77	38	61	29
Very Poor (KS)	21	10	13	6
<b>Total</b>	<b>204</b>	<b>100</b>	<b>212</b>	<b>100</b>

It is known from the table that most of the level category of physical fitness for male students is in poor category or for about 38%; 30% of the students are inadequate category; 13% of the students are in good category, 9% of the students are in very good category, and 10% of the students are in very poor

category. On the other hand, most of the level category of physical fitness for female students is inadequate category or for about 46%; 29% of the students are in poor category; 17% of the students are in good category, 2% of the students are in very good category, and 6% of the students are in very poor category.

The followings are the type of physical fitness test and the students mean score for each test, it can be seen that average scores of sprint (run 40 m) and sit up for male students are in the category of adequate (S), while hanging bend elbow, vertical jump, and run 600m are in the category of poor (K). In contrast, most of the female students' average scores for each type of test are in the category of poor (K) including sprint (run 40m), hanging bend elbow, vertical jump, and run 600 m.

### 3.2. Trying Out the Using of Physical Fitness Control Book

The Physical Fitness Control Book had been developed from Indonesian Physical Fitness Test in 2010. The content of Physical Fitness Control Book involves: (1) student's identity, address, school, class, semester, academic year, and student's photo, (2) the physique ability in joining physical fitness test, (3) the condition of student's physical fitness (4) the physical fitness test form, (5) the instruction of the assessment, and (6) the student's involvement in sportive activities. The physique ability of physical fitness test and its classification can be seen in the following table:

**Table 2.** Physique Ability and the Classification of Physical Fitness Test

Type of the test			Sprint (run 40m)	Hanging Bend Elbows	Sit up	Vertical Jump	Run 600m	*Fitness Classifica tion
Month	August	Ability	... sec	... sec	... times	... cm	... m... sec	
		Score						
		Total						
	September	Ability	... sec	... sec	... times	... cm	... m... sec	
		Score						
		Total						

\*BS= very good, B = good, S = adequate, K = poor, KS = very poor

The book's trying out was implemented for two months. The first test of physical fitness (Test I) was done in the first week of August 2016 meanwhile the second test of physical fitness was done in the first week of September 2016. It could be seen that the male students' score increased into 1.036 and the female students' score increased into 0.764. Furthermore, the students' frequency and percentage of the category are obtained as follow:

**Table 3.** The Percentage of Students Physical Fitness in Padang (Test I and Test II)

Level Category of Physical Fitness	Sex							
	Male				Female			
	Test I		Test II		Test I		Test II	
	Tot	%	Tot	%	Tot	%	Tot	%
Very Good (BS)	3	11	3	11	1	3	1	3
Good (B)	4	14	5	18	4	12	4	12
Adequate (S)	12	43	17	61	17	50	19	56
Poor (K)	8	29	3	11	10	29	10	29
Very Poor (KS)	1	4	0	0	2	6	0	0
<b>Total</b>	28	100	28	100	34	100	34	100

It can be seen that most of the students' physical fitness are an adequate and poor category while a few of students are in good, very good, and very poor. In addition, the students' mean score for each type of physical fitness test, most of the students' average score in the physical fitness test are in poor category involving bend elbow, vertical jumping, and few students are inadequate category involving sprints (40m), lying and sitting, and run (600 m).

## 4. Discussion

### 4.1. *The Quality of Physical Fitness of Elementary School Students in Padang*

According to the result of the research, it is found that most of elementary school students' physical fitness is in the poor and adequate category. However, many of them are also in the good and very good category and there are still a few of them who are in a very poor category. For the male students, it is found that 38% of them is in poor category; 30% is inadequate category; 13% is in good category; 9% is in very good category; and 20% of them is in a very poor category. On the other hand, the quality of physical fitness of female students mostly in the category of adequate or for about 46%; 29% of them is in poor category; 17% is in good category; 2 is in a very good category, and 6% of them is in a very poor category.

In physical fitness test, the students' ability in joining several types of tests can be determined. The male students' ability in the sprint (run 40m) and sit-up are categorized into adequate category while in the vertical jump and run 60m, their ability is in the poor category. In contrast, the female students' ability in sit-up is determined as adequate category whereas the rest types of the tests are categorized into poor category.

Considering that the findings of the research show that physical fitness of elementary school in Padang is adequate and poor, it cannot be allowed since it will affect their health. Also, it will affect their students' motoric development, learning capability, and the decrease of memories. The quality of physical fitness affects the human's functional health related to the anatomical functions, cardiovascular immune, muscles' power, and other organ's functions [3].

If someone's physical fitness decreased, he cannot do his daily activities well, feels exhausting, muscles are weaker, less of immunity, energy, and passion so that he cannot get achieve good achievements. "Healthy is meaningless if it is gotten whenever one's resting and sleeping..." Instead, someone is said as health if they can do their daily activities well which involves physical movements. People who are dynamically health can improve their physique and psychology movements [4].

Physical fitness is the ability to do daily activities easily without feeling exhausting and have extra energy to be used for other activities [5]. Physical fitness involves anatomical fitness, physiological fitness, and psychological fitness. Someone is said to having good physical fitness if he can do his daily activities well without feeling exhausting and recovering soon. Meanwhile, someone is said as having psychology fitness if he has a good stable emotion [6]. The most relevant students' social behavior obtained in this subject is the fair play that they are able to show respect to rival teams and officials, sincerely accepting the shellacking or winning [7].

Physical fitness is divided into two including (1) physical fitness (healthy) involves aerobic capability, muscles power, muscles durability, and flexibility. (2) Physical fitness (performance) involves muscles power, reaction time, coordination, balance, speed, and agility [8]. The physical fitness which related to the healthy is someone's ability to do physical activities that need power, durability, and flexibility. A good physical fitness can only be achieved by doing routine physical exercises. The people who have good physical fitness will have different working ability with the people who have not. The people with good physical fitness may work for 8 hours with 50% working ability. Meanwhile, the people who have low physical fitness only have 25% working ability. In other words, a good physical fitness will affect the quality of working passion [3].

The people who are fit and health will decrease the health care costs that have to be paid by the government, society, or even personal [9]. Also, physical fitness is integrated to the anatomical functions which have orientation in maximizing their capability [10]. The optimal physical fitness will determine someone's fitness. Fitness is a requirement for the people to do their daily productive activities. The reformation of physical education in several countries such as America and Australia was implemented because most of the people have low physical fitness. [11] Physical fitness related to one's physique, organic fitness, and motor fitness. Including in physique is proportional body, bones, fat, muscles, height, weight, and others. Meanwhile, the organic fitness involves the human's organ such as heart, lungs, kidney, and others. Also, motor fitness involves immunity, power, speed, agility, balance, flexibility, and coordination.

#### *4.2. Improving the Quality of Physical Fitness by Using Physical Fitness Control Book*

There are some benefits of using physical fitness control book involving: (1) finding out someone's physical fitness, (2) determining appropriate training program in order to maintain the physical fitness, (3) evaluating the successful of physique training program, (4) implementing physical fitness routinely, (5) repairing the physical fitness through physique's activities or other physique exercises.

Physical Fitness Control Book was developed from Indonesian Physical Fitness Test (TKJI) 2010. [1] TKJI is one of the instruments to measure the quality of physical fitness which involves Neuro-motor test such as sprint (run 40m), hanging bend elbow, and sit up for 30 seconds, vertical jump, and 600 m. All of those tests are related each other and cannot be separated in order to assess the quality of physical fitness.

The limited try out of physical fitness control book was implemented for two months with twice tests. The first test of physical fitness was done in the first week of August 2016 while the second test was done in the first week of September 2016. The sample of the research was the 5th grade of elementary school students including 28 male and 34 female students. Based on the data, the score improvement of male students is 1.036 and the female students' core improvement increased into 0.764. It is found that the level of the students' physical fitness is inadequate and poor category while a few of them is in good, very good, and very poor category. There is an improvement in the students' mean scores for each type of the test. The students' ability in the hanging bend elbow and vertical jump are categorized into a poor level. Meanwhile, for the other tests, the students are the inadequate category.

The successful of physical fitness education in elementary school students will have a good impact toward the society such as the improvement of learning outcomes. Through physical and health education subject (PJOK) in elementary school, the student's physical activities and psychology will be good since it is the medium for the students to do physical activities [12]. Therefore, effective interventions that promote and foster physical activity in children are necessary, especially in females. However, a more objective physical activity guideline for preschoolers is necessary; measurement of activity needs to become more unified to compare and track activity more effectively [13]. PJOK is also said as fundamental human right, an essential factor in human development, a great investment, best school of life, the instrument for development and peace, and instrument for national resilience [9].

The development of physical fitness of elementary school students can be implemented in many physical activities. One of them is through playing the game. Playing game is the part of children's life and it is their basic needs. Education experts say that the children cannot be separated from the game. The playing game will increase the children's happiness, agility, relaxation, harmonization, and passion. The passion will increase their inspirations so that they will do their activities without any forces [14]. Systematic sports exercise activity is based on students' choice selected pursuant to students' own awareness and knowledge related to core values of Sports education that it promotes behavior and attitude change of the students [15].

The good quality of the physical fitness of the students is the result of active participation and routine physique activities. The association of quality physical education teaching (QPET) involves task design, task presentation, class management, and instructional guidance has its unique and critical teaching

components [16]. Each essential teaching dimensions is intertwined and immersed in teaching practices. The four essential teaching dimensions are all significantly contributed to students' health- enhancing physical fitness. The quality of the students' physical fitness will increase if the organs are functioned effectively and efficiently so that the students have good immunity, muscles power, speed, agility, coordination, and balance which are measured through TKJI by using physical fitness control book. Physical fitness is an excellent indicator of the health of children and adolescents and is a predictor of health in later life. Furthermore, measuring, assessing and monitoring of physical fitness should be considered a public health priority [17].

## 5. Conclusion

The quality of physical fitness of elementary school students mostly is inadequate and poor category while a few of them is in the good, very good, and very poor category. The benefits of using physical fitness control book are: (1) finding out someone's physical fitness, (2) determining appropriate training program in order to maintain the physical fitness, (3) evaluating the successful of physique training program, (4) implementing physical fitness routinely, (5) repairing the physical fitness through physique's activities or other physique exercises. Also, there is an improvement in the students' mean score during the tryout. The male students' score increased into 1,036, and the female students' score improved into 0,764.

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