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PENGARUH GAME SIRKUIT TERHADAP KEBUGARAN FISIK PADA KELAS 5 SISWA SEKOLAH DASAR TAHUN 2015

THE EFFECT OF CIRCUIT GAMES TO PHYSICAL FITNESS ON 5TH GRADE STUDENTS OF ELEMENTARY SCHOOL IN YEAR 2015

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ABSTRAK

Perkembangan kebugaran fisik pada siswa sekolah dasar merupakan suatu hal yang penting. Hal ini juga yang akan menentukan apakah siswa tersebut akan tumbuh dan berkembang dengan optimal. Salah satu cara agar siswa dapat melatih kebugaran fisik adalah dengan game sirkuit. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh permainan sirkuit terhadap kebugaran fisik pada siswa sekolah dasar pada tahun 2015. Metode dalam penelitian ini adalah metode eksperimen yang menggunakan norma penilaian berlari cepat 40 meter, menggantung siku, berbaring (30 detik *sit-up*), melompat tegak, lari jarak jauh (600 meter). Artikel ini menemukan bahwa tingkat kebugaran fisik siswa kelas lima sekolah dasar mengalami peningkatan melalui game sirkuit. Hasil dari temuan artikel ini dapat digunakan sebagai acuan tambahan dalam peningkatan kondisi fisik siswa sekolah dasar yang bisa dipraktikkan pada saat pembelajaran pendidikan jasmani maupun ekstrakulikuler olahraga.

Kata kunci: game sirkuit; kebugaran fisik; siswa sekolah dasar

ABSTRAC

The development of physical fitness in elementary schools is an important matter. This will also determine whether these students will grow and develop optimally. One way that students can train physically with circuit games. The purpose of this study was to study circuit play on fitness in elementary schools in 2015. The method in this study was an experimental method that uses 40-meter Fast Tracking norms, calming elbows, lying down (sitting 30 seconds), jumping upright, running distance far (600 meters). This article discusses how to improve physical classes. The results of the findings of this article can be used as additional references in improving the ability of elementary school students which can be practiced during physical learning and sports extracurricular activities.

Keywords: *games sircuit; physical fitness; elementary student*

INTRODUCTION

The physical activity (physical conditioning) plays an important role in maintaining or increasing one's physical fitness level. Through regular and continuous physical activity training, a person will have a high level of physical fitness so that he will be able to do his daily tasks well. His physical work ability will be better, so his work will be more productive.

The development and growth of children is very important, because they are very valuable assets in the future development, they are candidates for the next generation. Their good and bad are the determinants of the good and bad of the nation in the future.

The responsibility of their coaching is one of the obligations of educator people as implied in the National Education goals "Educating the life of the nation and developing whole people", namely: (1) human who believe and fear God Almighty (2) noble character (3) have knowledge and skills (4) physically and mentally healthy (5) strong and independent personality and (6) social responsibility.

Good practice is needed in education, especially sports physical and health education, to improve the quality of the presentation of the field of study of physical sports and health in the school curriculum and influence in improving psychological aspects, namely emotional, social, and cognitive development. In addition, the field of study also promotes the development of human rights, fair play, concern and appreciation for the environment, and a set of possibilities for comprehensive development (Lutan Lutan et al., 2002).

In the improvement and development of sports, especially starting from the most basic level, which is in accordance with the circumstances of the writer who will serve as a teacher of physical education in sports and health in elementary school.

The implementation of sports and health physical education is one of the means of coaching the quality of Indonesia's human resources, the expected results that can be achieved requires a considerable amount of time. Therefore efforts of coaching community members and students through sports and health physical education requires patience, sincerity and a systematic and continuous program.

As an educational effort, we hope that physical sports and health education in formal educational institutions can develop more rapidly so that they can become the foundation for national sports development. The process of forming attitudes and motivational generation starts when someone is in the elementary school. Understanding this, the teachers especially in elementary schools must have the ability and understanding of how, coaching and improving one's ability to carry out movement and exercise, with adequate abilities and knowledges and skills expected to improve teacher competencies in teaching and training so that teachers can understand and comprehend where the ability of each individual will not always be the same.

One of the goals of exercising is to improve physical fitness, and this goal can be achieved if exercise is done correctly, that is in accordance with the principles of exercise. This will have a very good and big influence on a person's body, besides stimulating the growth of the body also increasing spiritual development. So that the work and function of organs and metabolism in the body will work efficiently, and also stimulate blood circulation, breathing and the nervous system.

The problem in this study was about the still low level of physical fitness of students at the Elementari School of 104268 Elementary School in Serdang Bedagai Distric. The researcher saw this symptom based on the observations of researchers at this school on May 10, 2015. The researchers saw that there were still many students who were less eager to participate in sports / physical activities. In doing sports movements it seems that most students were less serious. Based on this fact, sports activities need to be pursued through the form of games in order to improve students' physical

fitness.

Playing is a form of activity that aims to get a sense of joy or pleasure that is done without being forced but voluntarily. By carrying out the process of exercise training through a play approach, it is hoped that it will be able to provide a renewal in the learning process and allow students to be easier, faster, more meaningful, effective and enjoyable in learning the subject matter given by the teacher.

Sports activities can be carried out in the form of circuit games. The form of circuit play is: basic training that is carried out in succession from the first to the last movement. One type of circuit game carried out in elementary school is a 4 post series game.

Physical Education

In essence of education is a process of human interaction, efforts to prepare students, efforts to improve the quality of life, activities carried out for life, and efforts to always apply the principles of science and technology. The application of the intended interaction is the reciprocal relationship (two-way communication). According to Williams Physical Education Specialist (Arma and Manadji, 1994) argues that "Physical Education is all human activities that are chosen of their type and carried out in accordance with the goals achieved".

The function of physical education at the elementary scholl level are :

1. improve the physical growth and development in harmony, compatible and balance
2. improve the development of positive mental, social, and emotional attitudes that are harmonious, compatible andbalance
3. improve the understanding of the benefits of physical education and fulfilling the individual's need to actively move and socialize
4. stimulate the development and activity of the blood circulatory, digestive, respiratory and nerve systems
5. improve the ability and improve the physical fitness, movement skills, emotional and mental health endurance. (PJKR UNNES, 2015).

Physical Fitness

The physical fitness is the basis for doing activities, therefore physical fitness is absolutely necessary for humans, because to carry out daily activities humans need physical fitness levels so that all work can be carried out properly.

In defining the meaning of physical fitness, many experts argue among them Sudarno (1992) stated that "Physical Fitness is the body's ability to make adjustments to the physical load given without causing excessive fatigue. Furthermore, it is said that physical fitness is the ability of a person's body to perform daily work tasks without causing significant fatigue.

Physical fitness is the ability possessed by someone to do work efficiently without experiencing significant fatigue, and still be able to enjoy leisure time well. So physical fitness is to improve the function of the human body and physical fitness is part of total fitness (Hidayat, 2019).

According to Sumosardjuno (1989) that physical fitness is a component of the most important physical condition in carrying out work abilities or activities, namely (1) strength, (2) cardiovasikuler endurance, (3) muscular endurance & (4) flexibility.

Sudarno (1992) stated that physical fitness is a functional capacity that can improve the quality of life, without feeling exhausted, and still have the remaining reserves of energy to enjoy leisure time as well as sudden needs.

Marsudi, (1997): said in essence of physical fitness with regard to the physical ability of a person to carry out their daily tasks effectively and efficiently in a relatively long time without causing significant fatigue, and still have the backup energy to carry out other activities and can still enjoy his free time. Based on this understanding, so the physical fitness is an absolute thing for every living person who wants to live healthy and fit.

The Physical Fitness is a quantitative expression of one's physical condition. The Physical fitness can be defined as: a person's ability to perform a typical task that requires muscular work where the speed and endurance are the main criteria. Someone who has good physical fitness will be able to meet certain physical demands (Sudarno, 1992).

With improving the students physical fitness, they will have a body resistance to various diseases that will interfere with his learning activities. Immunity to disease is a very important factor. A student who is said to be in good physical condition, means that his immune system against attacks of hereditary diseases and diseases that come from the environment is getting better. The Physical fitness can be grouped as follows : ”(a) immunity to disease attacks; (b) muscle strength and endurance; (c) cardiorespiratory endurance; (d) muscular power; (e) flexibility; (f) speed; (g) agility; (h) coordination; (i) balance; (j) accuracy" (Ahady and Hairi 1982).

Game

The pleasure of getting in all kinds of games will be a strong drive to learn something. Further stated that "the game is an activity carried out in regulations made according to time and place, in accordance with the rules that are freely accepted but binding, have a purpose in themselves and accompanied by feelings of tension, joy and awareness that play is bound to life daily (Pasca UNS, 2015).

According to Sinulingga (2004) stated that the characteristics of 3rd and 4th grade children aged 9-10 years are seen from:

1. Physical aspect
   - Coordination improvement in motion skills.
   - Endurance develops.
   - Good eye and hand coordination.
   - Bad body attitude may be needed.
2. Psychological and Mind Aspecs
   - The ability to express opinions is growing.
   - Imagination still exists.
   - Happy to imitate as idolized.
   - Look forward to praise from adults.
3. Social Aspects
   - Being easily offended is also easily hurt by criticism.
   - One time bragging.

According to Sukrisno, et al., (2007): "Playing can be beneficial for development of physical, fine motor, social aspects, emotional aspects, and personality, cognition aspects, sharpening sensory acumen, developing sports and material skills, as media. Furthermore, it was stated that "play is an impulse in every individual, which for children is a job, while for adults it is more felt as a hobby". Play activities for children have to do with moving instincts, which are the nature of children.

Circuit Games

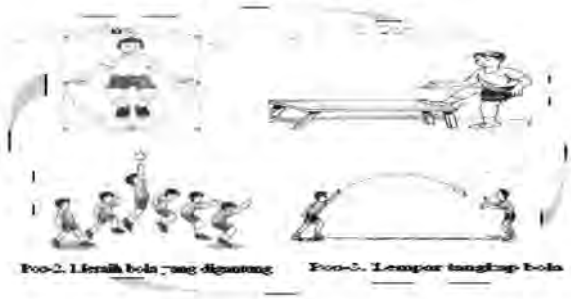
Forms of circuit games are: Basic movements in the form of games that are carried out in succession from the first movement to several posts (Santoso, 2007) Circuit games material that is carried out between one post and another is not the same but the time needed for each post is the same, so that the training can be completed with the same time.

Circuit games are a way of training where teams are grouped and each group performs a training method, at the time set by the groups change places. Whereas according to Harsono (1988) circuit training is a system of physical condition training that can simultaneously improve the overall fitness of the body, namely the components of power, endurance, speed, flexibility, mobility and other physical components.

Harsono (1988), That in the implementation of game forms a teacher of Physical Education can determine various kinds of variations as follows:

1. must be done so many times b. must do as many tests as possible within a specified time for example 15 seconds
2. likewise it may be determined whether after some form of exercise there is a rest period (say 15 seconds) or not.

Picture 1: Circuit Pos Games



Motion Development Characteristics of Elementary School Students

Matukaan (1993), stated that the motion development in humans starts from imperfect motion, basic motion which includes locomotor motion, non- locomotor motion, manipulative motion and special motion.

Blanc Lowy in Sukintaka (1992) expressed that the relationship between general development, the stage of mastery of deeds and characteristics, which can be seen in the following table.

Table 1. Motion Development Stage *(Motor Behavior)*

Terminal	Stage	Examples of behavior characteristics
Childhood (0-2 years)	Motion is not perfect	Roll over, sit, crawl, crawl, stand, walk and hold.
Early childhood (2–7 years)	Basic motion (and understanding efficiency)	Locomotor, non-motorized, manipulation and awareness of motion
Middle childhood of final part (8-12 tahun)	Special (typical)	Smoothing motion ability and motion awareness, using basic movements in certain dance, games or sports,

		gymnastics, and water sports activities.
Adolescence and adulthood (12 - adults)	Specialization	Recreational

Sources: Blanc and Lowy in Sukintaka (1992)

METHODOLOGY

The method used in this research was the experimental method, namely research that aims to test and prove the development of training results, the experiments conducted are the Effect of Sircuit Game on physical fitness in 5th grade students of Public Elementary School of 104268 Bingkat Pegajahan Sub-District Serdang Bedagai District Academic Year 2015/2016.

The design of this study can be described in the form of the scheme below:

Table 2. Research design

Pre- Test	Treatment	Post- Test
T1	Circuit Games (4 Posts)	T2

Information :

T1: Implementation of Pre Test (Student Physical Fitness Initial Test)

T2: Implementation of the Post Test (Student Physical Fitness Final Test)

To obtain the data in this study, an instrument was used in the form of a Physical Fitness Test for Elementary 5th Grade Elementary students. According to the Indonesian Physical Fitness Test (2010) guidelines, physical fitness tests for children aged 10-12 years consist of a series of five items, namely (a) Run fast (dash/sprint) 40 m, (b) Hanging elbow bent (c) sit-up 30 second), (d) vertical jump, dan (e) Run long distance (600 meter).

Table 3. The score of Indonesian Physical Fitness Test For Children aged 10-12 years (boys)

Score	Run 40 meter	Hanging elbow	Sit up 30 second	Vertical jump	Run 600 meter	Score
5	up - 6.3”	51”- up	23 - up	46- up	s.d. – 2’09”	5
4	6.4“- 6.9”	31” - 50”	18 - 22	38 – 45	2’10” – 2’30”	4
3	7.0”- 7.7”	15’’ - 30”	12 - 17	31 – 37	2’31” – 2’ 45”	3
2	7.8” - 8.8”	5” - 14 “	4 - 11	24 – 30	2’46” – 3’44”	2
1	8.9” – etc	4” - etc	0 - 3	23 – etc	3’45” – etc	1

Source: Indonesian Physical Fitness Test Book for children aged 10-12 years (boy), 2010

Tabel 4. The Score of Indonesia Physical Fitness For Children Aged 10-12years (girls)

Score	Run 40 meter	Hanging elbow	Sit up 30 second	Vertical jump	Run 600 meter	Score
5	Up to-6.7”	40”- up	20 - up	42- etc	Up to.– 2’32”	5
4	6.8“- 7.5”	20” - 39”	14 - 19	34 – 41	2’33” – 2’54”	4

3	7.6”- 8.3”	8’’- 19”	7 - 13	28 – 33	2’55” – 3’28”	3
2	8.4” - 9.6”	2” - 7 “	2 - 6	21 – 27	3’29” – 4’22”	2
1	9.7” – etc	0” - 1	0 - 1	20 – etc	4’23” – etc	1

Source: Indonesian Physical Fitness Test Book for the gilrs aged 10-12 years, 2010

Table 5. The Norms of Indonesian Physical Fitness Test For Children aged 10-12 Years

No	Amount of Score	Classification	
1.	22 - 25	Very Good	(VG)
2.	18 - 21	Good	(G)
3.	14 - 17	Average	(A)
4.	10 - 13	Fair	(F)
5.	5 – 9	Poor	(P)

Source: Indonesian Physical Fitness Test Book for children aged 10-12 years, 2010

Data Analysis Technique

To obtain good and accurate research results, the researcher analyzed the research data using the following formula:

1. Calculating the Test of Analysis Requirements:
   - Test of Normality data, using Liliefors test.
   - Test of homogeneity data using the F test.
2. Data Analysis, including :
   - Look for the average value for each variable.
   - Look for the standard deviation of each variable.
   - Test the hypothesis by using the t-test formula different pre-test and post-test.

RESULTS AND DISCUSSION

The test results data on the effect of circuit games to physical fitness on 5th grade students of Public Elementary School of 104268 Bingkat Subdistrict, Serdang Bedagai District, in the Year of 2015/2016 can be described in the form of a table as follows:

The pre-test data for the 40 meter run test obtained a maximum score of 7.40 seconds, a minimum score of 9.20 seconds, and an average score of 7.9 seconds. For the hanging elbow bend test, the maximum score was 26 seconds, the minimum value was 2 seconds, and the average value was 10.6 seconds. For the 30-second sit up test the maximum score was 12, the minimum score was 5 and the average score was 10.4.

For vertical jump test, a maximum score of 32 cm was obtained, minimum score of 8 cm and an average score of 26.6 cm. For the 600 meter run test the maximum score was 5 minutes 32 seconds, the minimum score was 3 minutes 0 seconds and the average score was 3 minutes 56 seconds.

Post-test data for the 40-meter run test the maximum score was 6.90 seconds, the minimum score was 8.30 seconds, and the average score was 7.9 seconds. For hanging elbow bend test, a maximum score of 30 seconds was obtained, a minimum score of 4 seconds, and an average score of 14.1 seconds.

For the 30-second sit up test the maximum score was 18, the minimum score was 9 and the average score was 13.6. For vertical jump tests, a maximum score of 39 cm was obtained, a minimum score of 19 cm and an average score of 32 cm.

For the 600 meter run test the maximum score was 4 minutes 07 seconds, the minimum score was 2 minutes 27 seconds and the average score was 3 minutes 09 seconds.

Table 6. Description of Research Result Data

No.	The Calculation Results	Pre-Test Data	Pos-Test Data
1	Maximum Score	14	17
2	Minimum Score	8	11
3	Average Score	11,36	14,18
4	Standard deviation	1,68	1,40

From the data above, it can be seen that for the pre-test data obtained physical fitness test results with a range of values from 8 (minimum) to 14 (maximum), while the average score was 11.36 and the standard deviation was 1.68.

From the datas above, it can be seen that for post-test datas obtained physical fitness test results with a score range of 11 (minimum) to 17 (maximum), while the average score was 14.18 and the standard deviation was 1.40.

Analysis Requirements Test

1. Data Normality Test

Based on the calculation of the normality data test contained in appendix 7, the results of the normality data test on the physical fitness of the student group were obtained for the pre-test and post- test. From the calculation results of the normality test of the physical fitness data in the pre-test group Lo scores were obtained = 0.1284 while the score of L table = 0, 1890 (n = 22 and a significant level of 0,05) So it can be concluded that the pre-test group physical fitness test results came from populations that were normally distributed.

The calculation results of the normality test of physical fitness data for the post-test group obtained a score of Lo = 0.1842 while the L table score = 0.1890 (n = 22 and asignificant level 0,05). So it was concluded that the physical fitness test results of the post-test data group came from populations that were normally distributed.

Table 7. Test Result Summary Normality data

Data Group	Score Lo	Score Ltable	Conclusion
Pre-test	0,1284	0,1890	Normal
Pos-test	0,1842	0,1890	Normal

Hypothesis testing

Based on the results of calculations performed with the t-test formula in appendix 9, the score of t-count = 15.50; this score is compared with the t-table value (dk = n-1 21; = 0.05) obtained 1.721. So that t- count> t-table is obtained, thus the hypothesis states: The Circuit games affect to physical fitness in 5th grade students of Public Elementary Scholl of 104268 Bingkat

District Pegajahan Serdang Bedagai Academic Year 2015/2016, the truth is acceptable.

Discussion of research results

Based on the results research data on the effect of circuit games to physical fitness levels, it is known that from 22 students who were sampled in this study, the average physical fitness of 5th grade students of Elementary Scholl of 104268 Bingkat, Pegajahan Sub-District, Serdang Bedagai District 2015/2016 Academic Year increased from pre-test to post-test. The average score of physical fitness of students at the pre-test was 11.36 (fair category) and when the post- test was 14.18 (average category) with a difference of 2.82. So that it can be stated by doing circuit games can provide an increase in physical fitness of 5th grade students of Public Elementary School of 104268 Bingkat District Pegajahan Serdang Bedagai Academic Year of 2015/2016 amounting to 24.80%.

These results indicate that most of the 5th grade students of Public Elementary School of 104268 Bingkat Pegajahan Subdistrict, Serdang Bedagai District, 2015/2016 Academic Year still have physical fitness in the "average" category. Students who have physical fitness "Average category" are able to do work or daily activities, but still experiencing obstacles.

Likewise in learning activities, students will experience a few obstacles both in terms of concentration and in terms of ability to think.

This physical fitness is important to be improved so that students have a better ability in terms of thinking ability and mental and physical health.

Through the implementation of circuit games carried out regularly can significantly improve students' physical fitness. This can be understood because the movements carried out must be made in such a way that the students are easy to learn. The movements in the game are made easily, so that each student has difficulty and is motivated to do it again.

The degree of one's physical fitness is very decisive in their physical abilities in carrying out their daily tasks. The higher the degree of physical fitness of a person the higher the physical work ability. In other words, his work is more productive if his physical fitness is increasing. Exercise regularly and continously is expected to affect the body's condition such as an increase in the ability of the heart's work system, an increase in strength, flexibility and stamina, the speed of reaction and faster recovery of body organs after exercise.

Conclusion

From the results of the hypothesis research and discussion of the study results it can be concluded that the physical fitness level on 5th students of Elementary Schoolincreased from 11.36 during the pre-test to 14.18 at the time of the post-test. The Circuit games affect physical fitness in elementary school students.

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