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PHYSICAL ACTIVITY LEARNING MODEL FOR STUDENTS IN ELEMENTARY SCHOOL

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Abstract
Inactive behavior is closely related to today's technological advances. The school curriculum has reduced students' physical activity because they have more time to participate in academic activities. In children and adolescents, this physical fitness is often forgotten, even though it is very useful to support physical work capacity which is expected to improve their performance. This study aims to create a physical activity program to improve physical fitness in elementary school students. The research method used is ADDIE. Participants in this study were elementary school students total 75 children (49 boys and 26 girls). The instruments used in collecting data were questionnaires and physical fitness tests. The findings of this study indicate that the physical activity program according to expert review is as follows: 1) facilities and infrastructure, 2) adjust the number of sets, duration of implementation, and repetition of each model item, and 3) group the types of activities. 5) arrange each daily physical activity learning program. Meanwhile, from the test results, it is known that this physical activity learning program is feasible and can be carried out by students. While the effectiveness data shows that the physical activity program developed can improve students' physical fitness with a minimum duration of 30 minutes for 3 days a week. The physical activity program developed has proven successful in increasing students' active behavior outside of physical education learning and shows that the movements that are arranged are feasible and effective in improving physical fitness in elementary school students.

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INTRODUCTION

Low physical activity is associated with increasingly rapid technological advances. The development of sophisticated technology is one of the causes of the shift from dynamic activities to static which is estimated to be the cause of the decline in a person's physical fitness level. Advances in technology in the field of transportation, for example, have reduced walking activities, resulting in dependence on motorized vehicles. A study of obesity with a cross-cultural

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approach showed that the development of video games led to reduced physical activity in children and adolescents (Pramono & Sulchan, 2014). Such a lifestyle increases with a decrease in physical activity.

In children and adolescents, this physical fitness is often forgotten. Whereas physical fitness is very useful to support children's physical work capacity which in the end is expected to improve their performance (Kelly et al., 2020). Good cardiovascular endurance will increase the child's ability to work with greater intensity and longer time without fatigue. Muscular endurance will allow children to build greater resistance to muscle fatigue so they can learn and play for longer periods of time. Physical activity is any body movement produced by skeletal muscles that require energy expenditure. Physical activity is very important for maintaining physical, and mental health and maintaining quality of life in order to stay healthy and fit. Lack of physical activity will increase the risk of obesity which is also a factor in reducing VO_{2max} (Çakir, 2019).

Physical activity or sport is one way to achieve physical health in order to achieve physical fitness, physical activities are carried out by humans to create mental, emotional, and spiritual physical health. PE lessons make a significant contribution to total physical activity by increasing time spent in high-intensity physical activity categories in particular (Kerr et al., 2018). Physical activity in this case can be done in various kinds of activities. In relation to physical education, learning is carried out through sports activities That students in the all-boys school are engaged in relatively high levels of Physical Activity (Koh et al., 2019).

The elements of fun and freshness are expected to have a positive impact on students. So that they are able to control negative mental, emotional and spiritual conditions that have the potential to interfere with daily activities. For this reason, sports activities are expected to be able to provide a new atmosphere in the midst of subject assignments that are quite stressful for students (Westendorp et al., 2011). Physical activity is a process of physical activity, games, and sports as a means to achieve fitness (Kusnaedi, 2018). By using/emphasizing physical activity that

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develops fitness, organ function, neuro-muscular control, intellectual strength, and emotional control (Gao et al., 2014).

Physical activity can also affect the balance of body posture which can affect the level of risk of falling in the elderly. Optimal physical fitness can support the health of the heart, lungs, muscles, and blood circulation system and can be obtained by doing light running, swimming, and exercise for arround 30 minutes (Ni Putu Ayu Windari Putri1, 2019). Planning a long-term physical fitness program is the best way to increase your level of physical fitness. Physical Education-based physical fitness program conducted twice a week for only nine weeks significantly improved cardiorespiratory and objective muscle fitness in high school students (Mayorga-Vega et al., 2016).

Improved students' concept of physical activity across multiple domains, students will have more positive feelings about appearance, strength, flexibility, and cardiovascular fitness by the end of the 14-week program (McNamee et al., 2017). To improve several domains of physical activity including strength, flexibility, and cardio vascular can be obtained at the end of the 14-week program. One of the journals makes a pyramid of physical activity for children and adolescents in Figure 1.

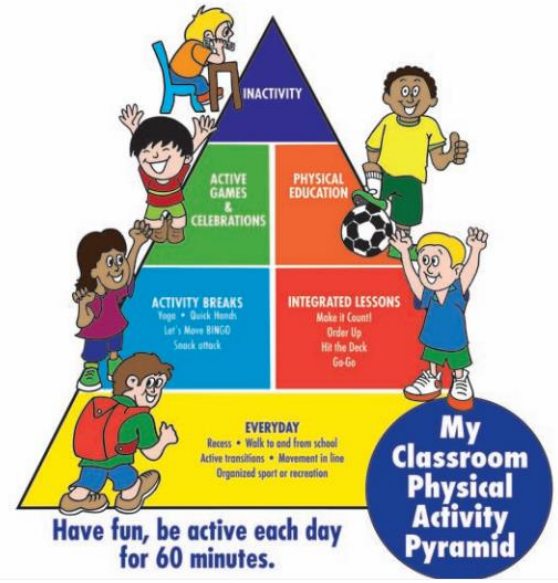

Figure 1. Pyramid of Physical activity (Taliaferro et al., 2011)

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Games are usually not part of the academic classroom environment but are important opportunities to teach and strengthen physical activity and physical education is defined as a curricular area, taught by professionals, that develops the skills and knowledge to establish and maintain an active lifestyle (Orlowski et al., 2013). Games provide opportunities for teachers to strengthen physical activity, while physical education curriculums are taught by teachers to develop skills and knowledge as well as form and maintain an active lifestyle. So based on these problems it is necessary to develop materials for physical activity that can support the needs of students outside of physical education learning in schools in maintaining physical fitness.

METHOD

This research method uses Research and Development (R & D) research methods to validate the product in the form of a physical activity learning model. The design in this study is based on systematic data derived from practice. Through a systematic study, there is an analysis, design, development, implementation, and evaluation process with the aim of forming an empirical basis for creating instructional and non-instructional products as well as new tools and models. It is a way to test theories and validate products, in addition to creating new procedures. The researcher designed the steps of the procedure developed by (Maribe Branch, 2009), namely ADDIE and adapted to the objectives and conditions in the field. The number of participants was 75 elementary school students consisting of (49 boys and 26 girls).

The instrument for collecting data is using a questionnaire to determine the usefulness of the physical activity program developed. The first measurement was carried out by three experts to assess the physical activity learning program developed. The variable for the expert relates to the suitability of the physical education curriculum and the physical activity material developed. While at the trial stage the variables that were seen were: 1) what physical activity was done, 2) how many times in one week the program was carried out, 3) how long to do physical activity in 1 day, 4) were you happy and there was no pressure when doing physical

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activity, 5) whether the physical activity you do has benefits in maintaining physical fitness. Meanwhile, to measure physical fitness using instruments from (Neves, 2017) (Lotan et al., 2014). Measurement of physical fitness to determine the relationship between physical activity carried out with physical fitness.

RESULTS

Based on the results of the assessment from experts, the following suggestions and inputs were obtained: 1) in the process of developing a learning model of physical activity it is necessary to pay attention to the facilities and infrastructure needed, 2) all facilities and infrastructure used in research should be free from external factors that can thwart the implementation of the research. itself, 3) adjust the number of sets, duration of implementation, and a number of repetitions of each model item, 4) group the types of activities according to their objectives, for example (warm-up, core, and cool-down activities). 5) arrange each daily or weekly physical activity learning program from light to strenuous activities, or tailored to the needs of students. The advantages of the physical activity model that have been delivered based on the validation of learning experts in physical education are 25 variations that are theoretically valid to be tested.

Based on the results of field observations from the trial, it can be seen that the program developed is included in the good category and all participants can practice all activity items. Before it can proceed to the next trial, the program developed must be revised slightly from field notes and input from two observers who work as physical education teachers. The data from the observation of the trial of the physical activity learning model include 1) Before participants practice the physical activity learning model, the teacher should give direct instructions to participants so that mistakes do not occur during implementation, 2) the physical activity learning model can be practiced by all participants well but should be emphasized on the implementation, the number of repetitions and sets in order to achieve the objectives of learning, 3) The variety of exercise models that are made are good but need good planning and learning management such as making daily and weekly programs and grouping each activity in order to get maximum results.

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The following is data related to students' heart rates before and after doing physical activity and VO_{2max} in table 1, while table 2 is data on the effect of physical activity between pre-test and post-test.

Table 1. Student Heart Rate Data and VO_{2max}

Age	Duration	Average Heart Rate Before Activity	Average Heart Rate After Activity	Average VO_{2max}
9	30 – 60 menit	153,54	186,65	41,59
10	30 – 60 menit	149,73	184,23	44,05
11	30 – 60 menit	148,67	182,73	46,74

Table 2. Pre-test and Post-Test of Physical Fitness

Group		Average	N	SD	t_0	t-table
Eksperimen	Pre-test	40,29	75	2,92	15,77	2,037
	Post-test	44,72		3,03		

In addition to assessment data from experts, it was also found measurement results related to heart rate before doing activities and after doing physical activity. In addition to heart rate, duration data was also obtained during physical activity. Based on table one, it can be seen that there is an increase in heart rate during activities carried out for 30-60 minutes. In addition, during the trial with the physical activity program for 8 meetings, an increase in students' physical fitness was obtained. From the experimental results, it can be seen that there is an increase in VO2max in students who have physical activity between 30-60 minutes which is carried out at least 3 times a week outside the physical education program at school.

DISCUSSION

The hectic school curriculum has reduced physical activity due to the whole day at school. In addition, as examination standards and school accountability have increased, Physical Education Programs and physical activity in general, have become increasingly marginalized because numeracy and being able to read or students must have general knowledge are targets that are the dominant focus in many schools (Riley et al., 2015). Physical education represents one of the key opportunities to develop positive attitudes towards physical activity and teach

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students the knowledge and skills to lead an active lifestyle (Touillet et al., 2010). Significant barriers to the quality of physical education were identified related to teachers and institutions. Furthermore, the level of activity in physical education learning is often very low and it is known that there is a decrease in physical activity during the school day with and should increase physical activity outside of school hours.

The physical activity program developed can be a guide for teachers in implementing physical activity materials in schools. As for students, it can be used as an activity outside of physical education learning. If a person does not have active behavior in addition to not getting physical fitness, it will also have an impact on chronic disease. Children and adolescents spend more time on sedentary activities, such as watching television, using the internet, and playing games, than doing physical activities (Liu et al., 2018). As research states that lack of physical activity is a factor for cardiovascular disease and various other chronic diseases including diabetes mellitus, obesity, hypertension, and bone and joint diseases (osteoporosis and osteoarthritis) (Darren et al., 2012). By behaving actively, it will make a habit of life and can reduce various diseases that will interfere with the body.

Physical fitness refers to the physiological state of a person to fulfill daily activities or exercise without having significant fatigue. Related to health, physical fitness includes components related to health status, including cardiovascular fitness, musculoskeletal fitness, body composition, and metabolism. The relationship between physical activity, duration of the activity, and health status described above is generally related to cardiovascular fitness. In addition, by doing regular physical activity there is also an increase in psychological well-being (for example, reducing stress, anxiety, and depression) (Oguma & Shinoda-Tagawa, 2014).

The findings of this study also show that children exhibit fun and are proven effective in improving physical fitness among students in grades 4-6. Participants achieved exercise intensity in the moderate to the vigorous range at an activity duration of 30-60 minutes with a frequency of 3 times a week. Intensity varies by

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grade level due to the variety of activities involved and the different rhythms and abundance of activities. Students in lower grades are more active than those in higher grades. Although the amount of energy expended is relatively small what is most important is that students are encouraged to participate in more physical activities using the skills and knowledge learned.

An increase in physical activity and a reduction in inactivity were found among children in physical activity programs indicating the potential behavioral impact of this approach and are consistent with the findings of previous studies that have integrated physical activity in the classroom (Oliver et al., 2016). In this study, it was found that students had spent a lot of time in school taking part in academic learning by just sitting in class. The evidence from this study suggests that a physical activity program intervention will also reduce this sedentary behavior. But these changes and increased light physical activity may contribute to increased energy expenditure and disease prevention and cognitive function in children.

CONCLUSION

Physical education programs in schools that are conducted once a week and with a duration of 60 minutes can not only increase students' physical activity. The physical activity program developed has been proven successful in increasing the active behavior of students outside of physical education learning with a minimum frequency of 3 times a week. This program shows that the movements that are arranged are feasible and effective in improving physical fitness in elementary school students.

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