

Physical Fitness as a Predictor of Elementary School Student Concentration



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ABSTRACT: This study aims to determine the relationship between physical fitness and the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta. This type of research is quantitative with a correlational approach. The population in this study were high school students in State Elementary Schools throughout Sleman Yogyakarta, amounting to 256 students who were taken based on the purposive sampling technique. Physical fitness instruments use the Indonesian Physical Fitness Test for ages 10-12 years, while concentration uses the Grid Concentration Test. The data analysis technique used Pearson Correlation Product Moment analysis. The results showed that there was a significant relationship between physical fitness and the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta, with an r count of 0.396 and a significance value of $0.000 < 0.05$. These results indicate that if the physical fitness is getting better or fulfilled, the concentration will also be better. For other researchers, research with other independent variables can be carried out, so that more variables that affect physical fitness can be identified.

Keywords- physical fitness, the concentration of learning

INTRODUCTION

In the current era of modernization, learning is no longer a preferred routine for students. This is because there are many things that make students lazy or bored with learning. Students prefer to play mobile phones, online games, or other activities that come from the surrounding environment ((Sydorenko et al., 2019); (Gao et al., 2020); (Frahasini et al., 2018); (Yang et al., 2021)). Children feel very comfortable playing games without feeling bored for a long period of time. The use of smartphones also has a negative impact on the development of students which is marked by the laziness of students in carrying out movement and interacting activities ((Triana & Nugroho, 2021); (Pitoyo, 2020); (Sudiyono & Astuti, 2021); (Andujar & Rodriguez, 2020)). The term physical activity is the movement of limbs that causes energy expenditure which is very important for the maintenance of physical and mental health, as well as maintaining the quality of life in order to stay healthy and fit throughout the day ((Hammami et al., 2022); (Santos et al., 2021)). Reduced physical activity will certainly result in weak physical condition or physical fitness abilities. Weak physical fitness results in reduced productivity of a person in carrying out daily activities ((Di Santo et al., 2020); (Branquinho et al., 2020)).

Physical fitness possessed by each individual is different, this depends on how the individual performs a physical activity. The development of everyone's physical fitness through a sports activity that has the intention to increase endurance and physical condition. Students must have a good level of physical fitness while in the school environment so that when carrying out learning activities they can be carried out optimally ((Mashud, 2020); (Pavlovic et al., 2021); (Churiyah et al., 2020)).

A person's level of physical fitness will affect physical and mental readiness to be able to accept the workload. This also applies to students, students with a good level of physical fitness will be able to carry out their learning activities smoothly (Jago et al., 2020). Through good physical fitness, students will be able to accept and absorb every lesson given by the teacher, so that the goals of education can be achieved. Having good concentration, of course, must have a good level of fitness, because when physical fitness is good, it is likely that the person will easily feel tired and will be susceptible to disease, so that it has an impact on learning concentration and academic achievement to be achieved. The level of physical fitness is very necessary to support daily activities, so that someone who has a good level of fitness will not have significant fatigue. Therefore, all human activities require physical fitness.

A good level of physical fitness will make a student able to work effectively and efficiently, not susceptible to disease, learn to be more passionate and enthusiastic, and be able to optimally and be able to face challenges in life both in the school environment

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and in the community. In addition, through good physical fitness, it is hoped that every student will also have confidence in learning activities. Students will not get tired easily or easily fall ill because their immune system decreases and of course it is not easy to lose concentration.

The most basic problem of learning is that it requires high concentration (Jin et al., 2018). Students are required to stay focused until the lesson is over. Concentration is one of the main factors that can affect learning. The higher a person's concentration, the more effective the learning activities are, but on the contrary if the concentration is low, the results obtained are not optimal. Concentration itself means the concentration of thoughts on one thing to the exclusion of all other unrelated things (Vygotsky, 2017). In learning, concentration means focusing the mind on a subject by putting aside all other things that are not related to the lesson.

Concentration of learning is to focus all the attention of students when learning takes place ((Foley, 2020); (Bower, 2019)). This means that students pay attention to the teacher, listen, see and concentrate on what the teacher says, and respond to the stimulus given by the teacher and put aside all things that are not related to the lesson. The role of concentration in the context of learning is very important. Without concentration, the act of learning will result in futility and even disappointment. A person's inability to concentrate in learning is caused by the dispersal of attention to an object. Concentration is the driving force for all student learning activities, ensuring the continuity of the learning process, providing direction for the learning process, enabling the achievement of learning subject objectives, and enabling students to achieve learning at school (Rusmana et al., 2019).

Children who are active in sports or in other words, children who have high physical fitness will produce a longer concentration level compared to children who have low physical fitness (Piercy et al., 2018); (Yarımkaya & Esentürk, 2022)). . Weak physical fitness results in reduced productivity of a person in carrying out daily activities. Concentration is the ability to focus on a task without being distracted and influenced by external and internal stimuli, while its implementation refers to a broad dimension and focuses on specific tasks. So important is concentration for students, so concentration can be a prerequisite for students in learning in order to successfully achieve learning objectives. This was also stated in research (Nuryadi et al., 2018) that other effects of physical fitness cause significant changes in the endocrine system. The results of the study also stated that the higher the physical fitness, the lower the cortisol response in terms of concentration and the ability to release anxiety was also higher. The importance of concentration can make students better master the material provided and increase enthusiasm and motivation to be more active during the learning and teaching process. Concentration has a big effect on the success of the learning process, if students have difficulty concentrating, the teaching and learning process is not optimal. For students who are less concentrated in learning, of course, learning achievement will also decrease.

METHOD

This type of research is correlational research. Correlational research is research conducted to determine whether there is a relationship between two or several variables. The population in this study were senior class students aged 10-12 years in State Elementary Schools throughout Sleman Yogyakarta Regency, amounting to 256 students. The instrument used to measure physical fitness is the Indonesian Physical Fitness Test for the age of 10-12 years which consists of a 40-meter run test (speed), an elbow bending test (arm muscle strength), lying down for 30 seconds (abdominal muscle strength), jumping upright (leg power), and running 600 meters (endurance). The concentration instrument uses the Grid Concentration Test. Grid Concentration Test is a form of measuring instrument to determine the level of concentration by using numbers. In this test, there are 100 numbers with 2 digits consisting of the numbers 00 to 99 which are placed randomly in 10 rows x 10 columns. The data analysis technique is the Correlation Product Moment. Previously, the normality and linearity prerequisite tests were carried out.

FINDING

The results of the descriptive analysis are intended to determine the physical fitness and concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The full results are in Table 1.

Table 1. Descriptive Statistics of Physical Fitness Variables

Statistic	
<i>N</i>	256
<i>Mean</i>	12,76
<i>Median</i>	13,00

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<i>Mode</i>	14,00
<i>Std. Deviation</i>	2,51
<i>Minimum</i>	8,00
<i>Maximum</i>	18,00

When displayed in the form of a frequency distribution, the physical fitness of upper-class students in State Elementary Schools throughout Sleman Yogyakarta is presented in Table 2.

Table 2. Frequency Distribution of Physical Fitness Variables

No	Interval	Category	Frequency	Percentage
1	22 - 25	Vey Good	0	0,00%
2	18 - 21	Good	6	2,34%
3	14 - 17	Medium	104	40,63%
4	10 - 13	Less	122	47,66%
5	5 - 9	Very poor	24	9,38%
Total			256	100%

Based on Table 2 above, it shows that the physical fitness of upper-class students in State Elementary Schools throughout Sleman Yogyakarta Regency is in the "very poor" category of 9.38% (24 students), "less" of 47.66% (68 students), "medium" by 40.63% (104 students), "good" 2.34% (6 students), and "very good" 0.00% (0 students).

The statistical description of the concentration data of upper-class students in State Elementary Schools throughout Sleman Yogyakarta Regency is in full in Table 3.

Table 3. Descriptive Statistics of Concentration Variables

Statistic	
<i>N</i>	256
<i>Mean</i>	12,30
<i>Median</i>	13,00
<i>Mode</i>	15,00
<i>Std. Deviation</i>	5,11
<i>Minimum</i>	2,00
<i>Maximum</i>	21,00

When displayed in the form of a frequency distribution, the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta is presented in Table 4.

Table 4. Frequency Distribution of Concentration Variables

No	Interval	Category	Frequency	Percentage
1	21 ≤	Good	6	2,34%
2	11-20	Medium	150	58,59%
3	0-10	Less	100	39,06%
Total			256	100%

Based on Table 4 above, it shows that the concentration of upper class students in State Elementary Schools throughout Sleman Yogyakarta is in the "less" category of 39.06% (100 students), "medium" is 58.59% (150 students), and "good" by 2.34% (6 students).

The normality test of the data in this study used the Kolmogorov-Smirnov method. The results of the data normality test carried out in each group were analyzed using the SPSS version 20.0 software program for windows with a significance level of 5% or 0.05. Summary of data is presented in Table 5.

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Table 5. Normality Test Results

No	Variable	<i>p</i>	Sig	Description
1	Physical fitness (X)	0,524	0,05	Normal
2	Concentration (Y)	0,425	0,05	Normal

Based on the statistical analysis of the normality test that has been carried out using the Kolmogorov-Smirnov test in Table 5, the variables of physical fitness and student concentration obtained normality test results with a significance value of $p > 0.05$, which means the data is normally distributed.

The linearity test of the relationship was carried out through the F test. The relationship between the independent variable (X) and the dependent variable (Y) was declared linear if the sig value > 0.05 . The results of the linearity test can be seen in Table 6 below:

Table 6. Linearity Test Results

Functional Relationship	<i>p</i>	Sig.	Description
Physical fitness (X)* Concentration (Y)	0,436	0,050	Linier

From Table 6 above, it can be seen that the significance value of $p > 0.05$. So, the relationship between physical fitness variables and the concentration of students is stated to be linear.

The correlation coefficient significance test was carried out by consulting the r table. If the r count is consulted with the r table using an error rate of 5%. If the significance value of $p < 0.05$, then the hypothesis is accepted and the significance value of $p > 0.05$, then the hypothesis is rejected. The results of hypothesis testing are presented as follows.

Table 7. Correlation Test Results

<i>Model Summary</i>				
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	0,396 ^a	0,157	0,153	4,70642
a. Predictors: (Constant), Physical fitness (X1)				

Based on Table 7 above, the calculated r coefficient is 0.396, while the significance value is 0.000. With the calculated r value of 0.396 and a significance value of $0.000 < 0.05$, it can be interpreted that there is a significant relationship between physical fitness and the concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The correlation coefficient is positive, meaning that the better the physical fitness, the better the concentration.

The value of the coefficient of determination R Square or the contribution of physical fitness with the concentration of upper-class students in State Elementary Schools in Sleman Yogyakarta Regency is 0.157 or 15.70%. This means that the physical fitness variable affects the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta by 15.70%. The rest is influenced by other factors of 84.30% outside this study.

DISCUSSION

Based on the results of the study shows that there is a significant relationship between physical fitness and the concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The results of this study are supported by research conducted (Krissanthy et al., 2020); (Shalar et al., 2019), which shows a significant relationship between the level of physical fitness and the level of concentration of students. The result of the determinant coefficient is 33.4%, and the rest of the calculation results is 66.6%. Again, the concentration level is determined by other factors.

The study (Putra, 2019) concluded that there was a relationship between physical fitness and the concentration level of students, with a significance value of 0.01. Further studies (Hermawan et al., 2022) show a relationship between physical fitness and concentration levels. In the study, (Nuryadi et al., 2018) also stated that physical fitness has a relationship with concentration with the results of the correlation test of $r = 0.4338$ and the coefficient of determination of 9.18%.

Based on descriptive analysis, it shows that most of the physical fitness levels of upper-class students in State Elementary Schools throughout Sleman Yogyakarta are in the poor category. This lack of physical fitness is caused because students are excessive smartphone users with an average use of 3-8 hours/day, five students are moderate users with an average use of 2-3 hours/day, and the rest are light users with less intensity of use. Then 1 hour per day. Students prefer to play online games over

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other activities such as sports or taking extracurricular activities. High intensity in playing online games can make students addicted, so it has an impact on the laziness of students to do activities. Students even rarely do sports activities, especially during the Covid-19 pandemic.

Based on descriptive analysis, it shows that most of the concentration levels of upper-class students in State Elementary Schools throughout Sleman Yogyakarta are in a good category. These results are by observations made by researchers, showing that students find it difficult to concentrate and are often sleepy when participating in online learning. Students also often lose concentration when doing assignments.

Physical fitness has a positive correlation with academic achievement and learning outcomes ((Vasconcellos et al., 2020); (Erickson et al., 2019); (Singh et al., 2019)). Physical fitness can increase concentration and focus in at least a short time; it can contribute positively to the academic achievement of students at school ((Fidan & Tuncel, 2019); (Hinojo-Lucena et al., 2018)), so physical fitness is closely related to physical condition physique. It is hoped that students with good physical fitness will be able to absorb more knowledge from each subject at school.

Concentration is essential for daily activities. Concentration is a learned skill not to react or be distracted by irrelevant stimuli, where our mind must be directed to a point in a job. Concentration is how a person focuses on doing something so that the work can be done in the allotted time. A person's ability to concentrate also varies according to his age. Concentration is one aspect that supports students to achieve good performance, and if this concentration is reduced, then taking lessons in class and private learning will be disrupted.

Students who have good concentration must, of course, have a good level of fitness because when someone does not have a good level of physical fitness, it is likely that person will quickly feel tired and will be susceptible to disease, so that his level of health will have an impact on learning concentration and academic achievement. Will be achieved. The level of physical fitness is essential to support daily activities so that someone with a good fitness level will not have significant fatigue. Therefore, all human activities require physical fitness.

Physical fitness can be improved through exercise. Sports are physical training activities, namely physical activities to enrich and enhance abilities and basic movement skills as well as movement skills (sports branches). This activity is a form of approach to aspects of physical well-being or physical health, which also means dynamic health, which is healthy accompanied by the ability to move that meets all the demands of daily life. This means that everyone who does physical education through sports activities has an adequate level of physical fitness. The more you exercise, the more your concentration will increase. This is in accordance with the theory that a person who exercises frequently has a better metabolic function than someone who does not exercise frequently or who does not exercise at all. Exercise can facilitate the circulatory system so that the nutritional and energy needs of the brain are fulfilled and make the brain work optimally ((Schulkin & Sterling, 2019); (Woods et al., 2020); (Özugur et al., 2021)). For students, this research can be used as information about their physical fitness status, so that it can be used as motivation and a measuring tool to do more routine and regular exercise every day, this information is also beneficial for students who are facing the teaching and learning process in the classroom, so that you know how big the level of fitness and concentration.

CONCLUSION

The conclusion of the study shows that there is a significant relationship between physical fitness and the level of concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The contribution of physical fitness to the concentration level of upper-class students in State Elementary Schools in Sleman Yogyakarta Regency is 15.70%. In comparison, the rest is influenced by other factors of 84.30% outside this study. For other researchers, research with different independent variables can be carried out to identify more variables that affect physical fitness.

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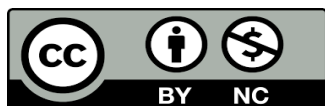
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