International Journal of Science and Applied Science: Conference Series P-ISSN: 2549-4635
Int. J. Sci. Appl. Sci.: Conf. Ser., Vol. 6 No. 2 (2022) E-ISSN: 2549-4627
ICCUSASS 2022 doi: 10.20961/ijsascs.v6i2.87241

The Level of Understanding of Grade X Students of SMA N 1 Maos Cilacap on Physical Fitness

Kusmiyati[1], Dian Imam Saefulah[2], Miftahul Hidayat[3]

[1]STKIP Darussalam Cilacap, Jl.Raya Karangpucung-Majenang, KM 02, Kec. Karangpucung, Kab. Cilacap, Jawa Tengah 53255

kusmiyati@stkipdarussalamcilacap.ac.id , dianimamsaefulah@stkipdarussalamcilacap.ac.id , Mhidayat15@gmail.com

Abstract: Physical fitness is one of the subjects that must be given to students. However, not all students are able to accept as a whole about the material given by the teacher. The purpose of this study was to determine the level of understanding of grade X students of SMA N 1 Maos Cilacap towards physical fitness. This research is a quantitative descriptive research with survey method. The study population was all grade X students of of SMA N 1 Maos Cilacap totaling 648 students. The research sample was taken by 38% of the population of 247 students determined using the Slovin formula. Sample determination using cluster random sampling technique. The instrument uses a test in the form of a previous questionnaire in the form of a google form that has been tested for validity by experts and the reliability results can be received with a value of 0.76. The content of this instrument contains 38 points of true-false statements. The analysis technique used is descriptive statistics with the help of Microsoft Excel. Then the analysis data obtained are presented in frequency tables and categorized. The results of this study showed that the level of understanding of physical fitness was 5.26% included in the "Very Good" category, 22.27% was included in the "Good" category, 48.99% was included in the "Sufficient" category, 16.60% was included in the "Less" category, and 6.88% was included in the "Poor" category. So it can be concluded that the level of understanding of physical fitness is mostly included in the "Enough" category.

Keyword: understanding of physical fitness; vocational students; Semarang

1. Introduction

Education in Indonesia has a juridical basis contained in Law of the Republic of Indonesia No. 20 of 2003. Education is defined as a planned development effort in the learning process to increase his potential by having spiritual strength, good ethics, intelligence, noble morals and skills. So that education is very crucial for every Indonesian citizen to advance their nation for the better. In the world of education, physical education subjects must be taught from elementary to secondary school as outlined in the Regulation of the Minister of Education and Culture No. 37 of 2018.

Physical education is an educational process that is planned systematically by utilizing physical activities that aim for each individual to improve in terms of various aspects, namely organic, neuromuscular, perception, knowledge, social and emotional (Mardius, 2021). Physical education helps students to gain experience and increase knowledge

through physical activities that are carried out in a structured and planned manner. Physical education can be used as a means to stimulate motor development, knowledge, skills, value appreciation, and healthy lifestyle habits so that it can stimulate each individual in their growth and development. Therefore, physical education is very crucial for learning in schools. The scope of physical education in schools stated in the Regulation of the Minister of Education and Culture No. 21 of 2016 consists of water activities, development activities, rhythmic activities, gymnastics activities, health, out-of-class education, games, and sports. Physical fitness is a development activity that must be taught to students because in life it is very important, by having a fit physique students are able to carry out activities optimally. In general, physical fitness or *physical fitness* is the condition of a person able to carry out moderate activities without fatigue and still save energy for leisure activities (Rich, 2004). One of the objectives of learning physical fitness material is that students are expected to gain new knowledge and add skills to get used to having an active lifestyle so that the body can be fit for life (Mahendra &; Abduljabar, 2021). According to Agus (2021), the physical fitness component consists of fitness related to health and motor abilities. Physical fitness related to health, including: cardiovascular*,* strength, muscular endurance *, flexibility,* and body composition. While physical fitness, which is classified as motor skills, includes: agility, speed, balance, coordination, and strength. So it is concluded that the physical fitness component consists of the ability of the heart, blood, blood circulation, and respiratory systems as well as basic movement skills. So, physical fitness does not only focus on muscle development, but the ability of body organs when receiving loads during exercise (Agus &; Sepriadi, 2021).

In physical fitness there are several factors that influence it. Arifin (2018) explained the factors that affect physical fitness as follows: (a) Genetics, congenital traits from birth that affect muscle strength and muscle endurance, (b) Age, increasing age cardiovascular performance will weaken. To minimize cardiovascular weakness by doing regular exercise, (c) Gender, the value of physical fitness is greater for men than women by looking at the *maximum oxygen volume* (VO2 Max) which ranges between 15-30%, (d) Exercise, regular exercise practice with the right duration of exercise, intensity, frequency can have a major effect on the improvement and quality of body functions, (e) Lifestyle, Applying a healthy lifestyle by maintaining the body well and eating nutritious foods, of course, physical fitness is always good and maintained, (f) Nutritional status, meeting nutritional needs containing carbohydrates, salt, protein, minerals, fat, vitamins, and adequate water can have a major effect on a person's physical development.

The implementation of learning in schools as a means for students to gain a new and deeper understanding of science. Teaching and learning activities are expected that students can find a meaning or understanding of new things from the process of interaction with teachers (Rosarian &; Dirgantoro, 2020). Based on the cognitive realm in bloom's taxonomy, understanding enters at the second cognitive level (C2), after knowledge (C1) (E. Adams, 2015). Learning systems in schools generally provide stimulation to students to understand the material taught in learning activities (Rosegard

&; Wilson, 2013). Understanding is that students can retell the material that the teacher has explained during learning activities. According to Paolini & Kean (2015), the material received by students is certainly different. In order for learning objectives to be achieved, the learning method must be in accordance with the characteristics of students. In measuring students' understanding of the subject matter, it can be measured by a model interviews or questionnaires given to students by asking the content of the material measured (Hardani et al., 2020).

Based on observations made by researchers at Maos High School Semarang when learning activities during the Covid-19 pandemic were carried out in 50% Face-to-Face Learning (PTM), which means 50% offline and 50% online. There are 5 physical education teachers at Maos High School Cilacap, of course, the learning model of each teacher in providing physical fitness material to students is different. Offline learning during 50% PTM is carried out in a fairly limited time, namely 40 minutes used by physical education subjects. Limited time causes learning to only be in the classroom so there is no direct practice. This results in less than optimal material delivery. While the online learning process utilizes *edulearning applications* that have been provided by the school. Teachers upload teaching materials to *edulearning* so that students can learn the material that has been given. However, not all teachers provide teaching materials. Of the 18 classes at of SMA N 1 Maos Cilacap, only 11 classes were given teaching materials on physical fitness material and the rest were assigned assignments. The importance of basic knowledge related to physical fitness material so that students can apply movements correctly during practice in the field. Thus, it is necessary to measure the level of understanding of class X students regarding physical fitness as evaluation and input material for teachers in order to see the extent of the level of understanding of students.

2. Method

This type of research is one type of research that already exists, namely quantitative descriptive research. According to Maksum (2018: 83) descriptive research is research conducted to explain the chosen situation or phenomenon. The method used is data collection using previous questionnaires in the form of *google forms*. Test results are analyzed using descriptive statistical techniques and presented in percentage form to obtain an overview of the level of understanding of students.

This study uses an instrument in the form of a questionnaire that must be answered by respondents. The questionnaire contains a statement regarding physical fitness material written by Firdous (2020) and has been tested for validity and reliability. The test results of validity (r-it = 0.16- 0.61) and reliability (Alpha Coefficient = 0.76 > 0.7) therefore, this instrument can be used in research (Fraenkel &; Wallen, 2012). The contents of this instrument are contained 38 points of true-false statements. The test results are calculated by referring to the *Guttman Scale*, the data obtained is in the form of interval data, which provides two alternative answers to respondents, namely: the answer "TRUE" is worth 1 (one) or "FALSE" is worth 0 (zero), this is because it is to get an affirmative answer (Soegiyono, 2013).

Int. J. Sci. Appl. Sci.: Conf. Ser., Vol. 6 No. 2 (2022) doi: 10.20961/ijsascs.v6i2.87241

Table 1. *Guttman Scale* Scoring

Alternative Answers	Alternative Score Answers	
	Positive	Negative
Yes	1	0
Not	0	1

The population in this study was grade X students of SMA N 1 Maos Cilacap which had 18 classes totaling 648 students. Sampling using *cluster random sampling* technique is taking random samples from each *cluster* by providing equal opportunities to be used as samples (Maksum, 2018). The research sample was taken by 38% of the population of 247 students determined using the Slovin formula. Each class is randomly selected using formulas in *microsoft excel.* Then the analysis data obtained are presented in frequency tables and categorized. In categorizing scores using five categories, namely Very Good, Good, Enough, Less, and Bad (see table 2).

Table 2. Categorization Norms

Interval	**Category**
M+1.5 SD $\leq$ X	Excellent
M + 0.5 SD $\leq$ X < M + 1.5 SD	Good
M - 0.5 SD $\leq$ X < M +0.5 SD	Enough
M - 0.5 SD $\leq$ X < M - 0.5 SD	Less
X < M – 1.5 SD	Bad

Source:(Himalaya et al., 2021) Remarks.

X: score obtained SD: standard deviation

M: *mean*

The data that has been obtained is then entered into the relative frequency in the form of percentage numbers (Satriawan, 2018). The formula used for percentages is as follows:

p=f/N X 100%

Information:

p: Percentage number f: Frequency

N: Respondents

3. Results and Discussion

Based on the data obtained, the data is presented using descriptive statistics as follows:

Table 3. Statistical Description of Respondent Comprehension Level Score

Int. J. Sci. Appl. Sci.: Conf. Ser., Vol. 6 No. 2 (2022) doi: 10.20961/ijsascs.v6i2.87241

Overall Data	
Number of Respondents	247
Mean	28,98
Std. Deviation	4,15
At least	14
Maximal	37

Source: Olah Data Research (2021)

It can be seen in table 3, it is known that the mean result obtained was 28.98 smaller than the previous researcher conducted by Firdous (2020) getting a *mean* result of 30.44. After the data is collected, the next step is to enter the assessment category interval table as follows:

Table 4. Respondent Comprehension Level Category

No	Interval	Frequency	Persen- tase	Categories
1	X ≥ 35.21	13	5,26%	Very Good
2	31.06 ≤ X <35,21	55	22,27%	Good
3	26.90 ≤ X <31,06	121	48,99%	Enough
4	22.75 ≤ X <26,90	41	16,60%	Less
5	X < 22.75	17	6,88%	Bad

Source: Olah Data Research (2021)

In table 4 it can be explained that the level of understanding of grade X students of SMA N 1 Maos Cilacap towards physical fitness amounted to 13 students of 5.26% fell into the "Very Good" category, out of 55 students of 22.27% fell into the "Good" category, out of 121 students of 48.99% were in the "Enough" category, out of 41 students of 16.60% were in the "Less" category and of 17 students 6.88% were in the "Bad" category. These results are not much different from previous research conducted by Firdous (2020) showing the level of understanding of the majority of students in the "Enough" category.

The level of understanding on physical fitness consists of 6 factors, namely: 1) Physical fitness understanding factors, 2) Physical fitness component factors, 3) Factors that affect physical fitness, 4) Physical fitness training factors, 5) Physical fitness test factors, and 6) Physical fitness benefit factors. The six factors are visualized in the form of a pie chart.

It appears in figure 1 that the level of understanding of physical fitness is more dominant in the "sufficient" category with a percentage of 41% (100 students). This shows that students do not get satisfactory results. The material delivered by the educator has not been explained all about this factor so that the material has not been delivered as a whole.

Int. J. Sci. Appl. Sci.: Conf. Ser., Vol. 6 No. 2 (2022) doi: 10.20961/ijsascs.v6i2.87241

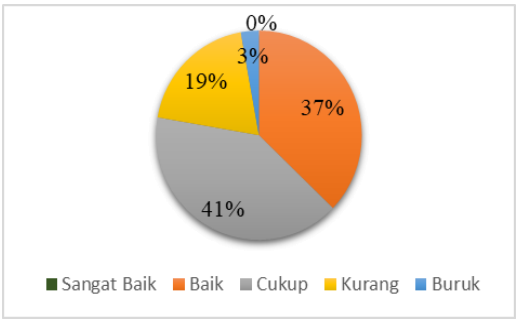

Figure 1. Percentage of Physical Fitness Understanding Factors

Figure 2 shows the level of understanding of the physical fitness component factors classified as "less" with a percentage of 32% (79 students). This shows that students do not fully understand the elements contained in the physical fitness component.

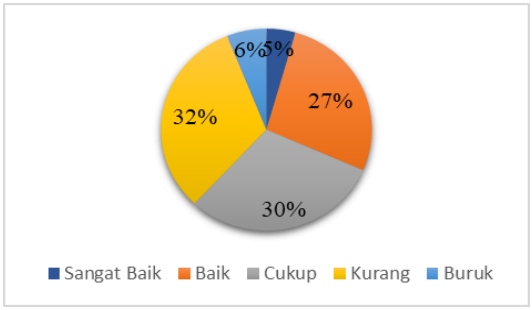

Figure 2. Physical Fitness Component Factor Percentage

In factors affecting physical fitness (Figure 3), the most prominent percentage is in the "less" category of 37% (90 students). material

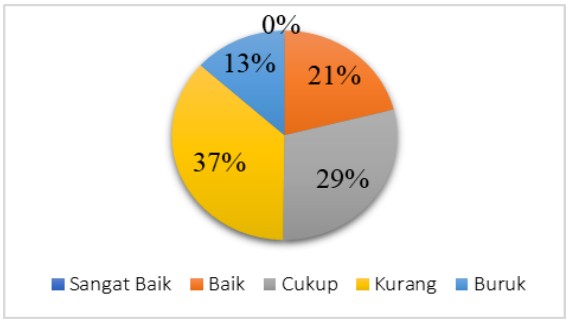

Figure 3. Percentage of Factors that Affects Physical Fitness

In this factor, students are still not able to grasp well. This is because the material on these factors is not discussed during learning.

The results of the percentage of physical fitness exercise factors shown in figure 4 were most dominant in the "sufficient" category at 46% (114 learners). This shows that the level of understanding of physical students has not been reached regarding fitness training because the delivery of movements is only through theory so that students do not practice directly. Thus, the delivery of material related to physical fitness training affects the understanding of students.

Int. J. Sci. Appl. Sci.: Conf. Ser., Vol. 6 No. 2 (2022) doi: 10.20961/ijsascs.v6i2.87241

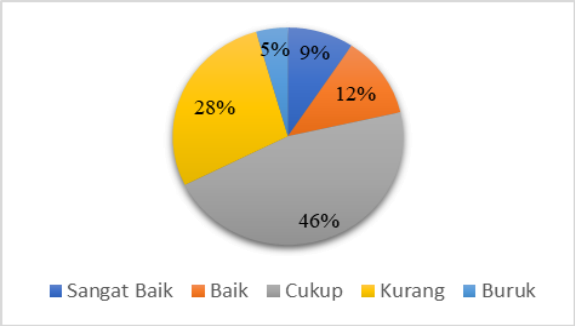

Figure 4. Fitness Exercise Factor Percentage

Physical

Figure 5 shows the level of understanding of students in the "sufficient" category with a percentage of 37% (91 students). This shows that the level of understanding of students is still not fully understood regarding physical fitness tests. This is because students do not carry out physical fitness tests during physical education learning so they do not understand the meaning, rules and objectives of physical fitness tests.

Based on these results, it indicates that students are good at understanding physical fitness material.

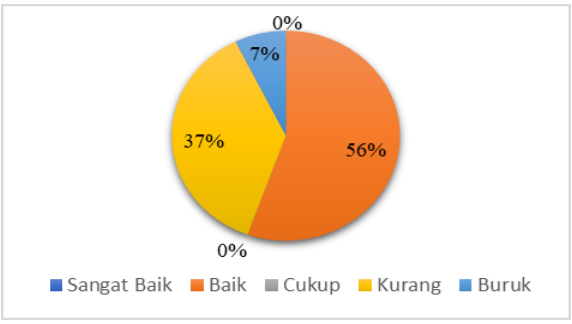

Figure 5. Physical Fitness Benefit Factor Percentage

However, there are some students who still do not understand the whole related to the material. Students in understanding the material are certainly different. According to Marlina (2021), this is influenced by internal factors (interests, talents, motivation, and ways of learning) and external factors (school environment and family environment). This opinion shows that learning outcomes cannot stand alone, but there are various factors behind it.

4. Conclusion

The results of the analysis of research data showed that the achievement of the level of understanding of grade X students of SMA N 1 Maos Cilacap towards physical fitness was categorized as "Sufficient".

5. Suggestion

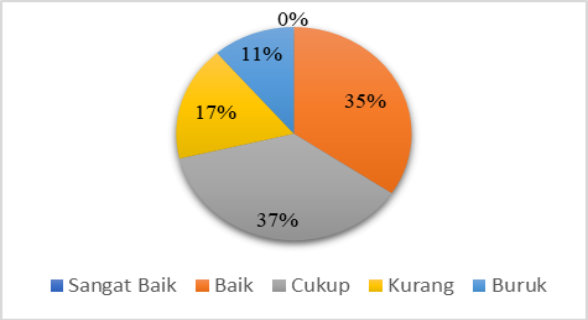

Figure 7. Percentage of Physical Fitness Test Factors

In figure 7, it can be seen that the level of understanding of students is in the "good" category with a percentage of 56% (137 participants educate). This shows related fitness benefits

The physical of many students understands. Students understand that doing fitness activities can feel the benefits of physical fitness, which is not easily tired. Based on the above conclusions, there are

Some suggestions that can be used as evaluation material, including:

1. For teachers, the results of this research are used as evaluation material to be more creative and innovative in developing learning models so that students can easily understand physical fitness material optimally. The way that teachers can do is to make learning videos that are easy for students to understand and always remind them to do movement activities related to physical fitness so that students have a healthy and fit body.
2. Further researchers are expected to develop questionnaires by paying attention to the cognitive level of students in measuring their understanding

References

Agus, A., &; Sepriadi. (2021). Fitness Management. In *Angewandte Chemie International Edition, 6(11), 951–952.* Sukabina Press.

Arifin, Z. (2018). The effect of physical fitness gymnastics (SKJ) on the fitness level of grade V students at MIN Donomulyo, Malang Regency. *Journal AL-MUDARRIS, 1*(1), 22. https://doi.org/10.32478/al-mudarris.v1i1.96

E. Adams, N. (2015). Bloom's taxonomy of congnitive learning objectives. *Journal of the Medical Library Association*, *103*, 152–153.

Firdous, K. N. (2020). *The level of understanding of grade X students on physical fitness at SMA N 9 Yogyakarta for the 2019/2020 academic year*.

Fraenkel, J. R., & Wallen, N. E. (2012). *How to Design and Evaluate Research in Education*. Beth Mejia.

Hardani, Andriani, H., Ustiawaty, J., Utami, E. F., Istiqomah, R. R., Fardani, R. A., Sukmana, D. J., &; Auliya, N. H. (2020). *Book of Qualitative and Quantitative Research Methods*. CV. Science Library.

Himalaya, F., Dimyati, A., &; Achmad, I. Z. (2021). The level of understanding of students in athletics running numbers class XI SMK Insan Perfect Karawang

Education. *Journal of Sports Education*, *4*(1), 18–26.

Mahendra, A., &; Abduljabar, B. (2021). *High School / Vocational School Physical Education, Sports and Health Teacher Handbook for Class X*. Center for Curriculum and Bookkeeping.

Maksum, A. (2018). *Research Methodology*. Unesa University Press.

Mardius, A. (2021). *Theory and Practice of Physical Freshness* (First). LPPM Universitas Hatta.

Marlina, L., &; Sholehun, S. (2021). Analysis of factors affecting Indonesian learning outcomes in grade IV students of SD Muhammadiyah Majaram Sorong Regency. *Journal of Science, Language, Literature, and Teaching*, *2*(1), 66–74.

Paolini, A., & Kean. (2015). Enhancing Teaching Effectiveness and Student Learning Outcomes. *The Journal of Effective Teaching an Online Journal Devoted to Teaching Excellence Enhancing*, *15*(1), 20–33.

Regulation of the Minister of Education and Culture No. 21 of 2016 concerning Content Standards for Primary and Secondary Education, (Online). https://www.bsnp-indonesia.org/wp- content/uploads/2009-06/Permendikbud_Tahun2 016_Nomor021_Lampiran.pdf

Regulation of the Minister of Education and Culture No. 37 of 2018 concerning KI-KD, SD, SMP, SMA, (Online). https://jdih.kemdikbud.go.id/arsip/Permendikbud

%20Nomor%2037%20Tahun%202018.pdf

Rich, B. S. E. (2004). ACSM's Health-Related Physical Fitness Assessment Manual. In *Medicine &; Science in Sports & Exercise*. https://doi.org/10.1097/00005768-200409000- 00030

Rosarian, A. W., &; Dirgantoro, K. P. S. (2020). Teachers' efforts in building student interaction through learning while playing methods. *JOHME: Journal of Holistic Mathematics Education*, *3*(2), 146. https://doi.org/10.19166/johme.v3i2.2332

Rosegard, E., & Wilson, J. (2013). Capturing students' attention : An empirical study. *Journal Of The Scholarship Of Teaching &; Learning*, *13*(5), 1– 20.

Satriawan, R. (2018). Profile of Physical Freshness of Bima Regency Volleyball Athletes. *Journal of Sports Education*, *8*(1), 40–43.

Soegiyono. (2013). *Quantitative, Qualitative and R&D Research Methods*.

Law of the Republic of Indonesia No. 20 of 2003 concerning the National Education System, (Online). https://pmpk.kemdikbud.go.id/assets/docs/UU_2 003_No_20_-_Sistem_Pendidikan_Nasional.pdf