

Development Of An Indonesian Student Fitness Test Application In Supporting The Design Of A National Sports Great In East Kalimantan

Didik Cahyono¹⁾, Muhammad Sukron Fauzi²⁾, Wafik Azizah³⁾, Sindi Amelia⁴⁾
^{1,2,3,4)}Physical Education Study Program, Mulawarman University

*Corresponding Author

Email: didikcahyono86@gmail.com

Abstract

The aim of this research is to make it easier for teachers to implement fitness tests for Indonesian students in the East Kalimantan region, as well as to produce an application for the Indonesian Student Fitness Test to support the grand design of national sports in East Kalimantan. To find out the effectiveness of this application as a medium for implementing fitness tests for Indonesian students. In this research, the development media used is the procedural development model, because this model is descriptive, namely a procedure that outlines the steps that must be followed in producing a product. The validation score results from media experts on the product as a whole aspect are "Very Good" with a percentage of 86% and PJOK Teachers are "Very Good" with a percentage of 91%. The final product in this research is a website-based Indonesian fitness test application to make it easier for students to carry out fitness tests independently.

Keywords: *Application Website, Archipelago Student Fitness, East Kalimantan*

INTRODUCTION

Fitness is defined in two groups, namely fitness related to health and fitness related to skills. Components of physical fitness related to health include: heart lung endurance, endurance, muscle strength, flexibility and body position. Meanwhile, the components of physical fitness related to skills are: speed, dexterity, balance, reaction speed, coordination, body composition. Developing physical conditions in sports, an athlete who wants to excel must have physical conditions such as: strength, endurance, muscular power, speed, coordination, flexibility, agility. (agility), balance (balance), accuracy (accuracy), reaction (Ewan I : 2019). The focus of attention on physical education, sports and health is increasing movement, more specifically physical education, sports and health is related to the relationship between human movement and other education, for example the relationship between physical development and other areas of growth and development, this is what makes physical education unique, (Ewan , Shutan et al: 2020). according to Djoko Pekik Iriyanto (2004: 17) Students should carry out sports activities 3-5 times a week to maintain their level of physical fitness. Because fitness will decrease by 50% after stopping sports or training for 4-12 weeks and will continue to decrease by 100% for 10-30 weeks. Research carried out in 2022 in a basic research scheme resulted in the average level of physical fitness in vocational high schools in the city of Samarinda being very low with data on vocational high school students in the city of Samarinda showing that 17.1% of students were in the category very low, 51.4% in the low category, 5.7% in the fair category, 8.6% in the very good category and 17.1% in the good category.

Due to the absence of physical education subjects in schools, students' physical activity is also reduced and this has an impact on the level of physical fitness of students in vocational high schools. This research was conducted in East Kalimantan, the capital city of the archipelago, regarding the development of the Indonesian student test application. For students, physical fitness can improve learning achievement because with good physical fitness, they will be better prepared to receive lessons and will become healthy and fit generations. Students' physical fitness levels need to be measured as data on students' fitness conditions. Based on the description of fitness level, targeted and effective improvement efforts can be made.

Measurement of students' physical fitness can be done using a desktop application program which includes the Nusantara Fitness Test test device program. In connection with this background, this research was conducted with the title "Development of the Archipelago Fitness Test Application in support of the grand design of national sports (DBON) in East Kalimantan".

RESEARCH METHODS

Carry out permits to carry out research, Conduct preliminary studies and gather information. Including field observations, Developing the initial product form (in the form of an application design), Evaluation by experts using 2 experts as well as small group trials, using questionnaires and evaluations which are then analyzed. First product revision. Product revisions are based on expert results and evaluations and from small-scale trials. This revision is used to improve the initial product created by the researcher, Field test, Final product revisions are carried out based on field test results, Produce products in the form of desktop-based applications.

Research subject

Students carried out fitness tests for 100 Indonesian students, Teacher as an assessor of the effectiveness of implementing the Indonesian student fitness test application, IT expert as an assessor of the feasibility of implementing the Indonesian Student Fitness Test program or application

Types of research

This research is a type of development research to produce a product in the form of a desktop-based application for the Indonesian Student Fitness Test Program. The development research procedure basically has the aim of developing a product, testing the effectiveness and suitability of the product to achieve the goal.

Data Collection Techniques and Instruments

Table 1.

No	Data source	Hands	Observation	You don't have to	Objective
1	Student			<ul style="list-style-type: none">• Sit Reach Test• Sit-up• Squat Thrust• Bleep Test	To find out your fitness level
2	Teacher	Questionnaire			Test product effectiveness
3	IT expert	Suggestion, criticism and input	Observation sheet which is in the form of an evaluation rubric		Product feasibility test

RESULT AND DISCUSSION

Fitness is defined in two groups, namely fitness related to health and fitness related to skills. Components of physical fitness related to health include: heart lung endurance, endurance, muscle strength, flexibility and body position. Meanwhile, the components of physical fitness related to skills are: speed, dexterity, balance, reaction speed, coordination, body composition.

Physical condition development in sports, an athlete who wants to excel must have physical conditions such as: Strength (*strength*), durability (*endurance*), muscle explosive power (*muscularpower*), speed (*speed*), coordination (*coordination*), flexibility (*flexibility*), agility (*agility*), balance (*balance*), precision (*accuracy*), reaction (*reaction*), (Ewan I : 2019). Physical fitness is closely related to human activities in doing work and moving. The physical fitness that humans need to move and do work is not the same for each individual. The physical fitness required by students whose subjects are general subjects is different from students whose subjects are specifically religion. The physical fitness required by ordinary people is also different from that of athletes, students and so on. The physical fitness required by a child is different from that required by an adult, in fact the level of need is very individual. It has become a kind of general agreement that learning objectives in the psychomotor domain must be developed, The research implementation stage began with creating and designing a desktop program-based application product to make it easier for teachers or to implement fitness tests for Indonesian students in the East Kalimantan region.

This product can help and make it easier to find out each person's physical fitness. If this product is made, it will be a new innovation in sports measurement testing. The hope is that this research will become a product in the field of web-based physical fitness tests that can make sports training easier for everyone who want to exercise seems more beneficial.

Product Development

After the product design is accepted, product development is carried out. Initial product development is carried out in several stages, for example; create a first view of the product with user data and test items, then write code to interpret the data and calculate the results using the conditional ratings displayed. Later, the original product developed will be tested by experts to evaluate its effectiveness before testing the product on users. The original design resulted in a web-based measurement testing and measurement application. It is given to experts to evaluate before testing the product.

Product Validation

Validation of this application development product includes support from experts/media experts and practitioners of information technology, sports tests and measurements. In this case, a team of expert evaluators carried out an evaluation by filling out a questionnaire given by researchers and providing input/contribution to the products produced. The results of this verification are used as a reference and means of improving the product so that the product is truly valid before testing. If improvements are made to the next product produced, scientists carry out small and large scale experiments to get a product that is good for publication. The results of these steps can be seen in the following table. Validation of this application development product includes support from experts/media experts and practitioners of information technology, sports testing and measurement. In this case, a team of expert evaluators carried out an evaluation by filling out a questionnaire given by researchers and providing input/contribution to the products produced. The results of this verification are used as a reference and means of improving the product so that the product is truly valid before testing. If improvements are made to the next product produced. Scientists conduct small and large scale experiments to obtain products that are worthy of publication. The results of these steps can be seen in the following table 2.

Table 2.

<i>Table of expert test classification results</i>		
Early Draft Model	IT expert	User
	50%	55%
Small Scale Trials	IT expert	User
	65%	75%
Large Scale Trials	IT expert	User
	86%	91%

Based on the testing stage with expert assistance, results were obtained of more than 80%, so this research product can be used as an application that makes it easier for each test taker to know their physical fitness level.

Application Deployment

Main View



Figure . Main View

Information:

1. In the main display of the website there are 3 forms to fill in Home, Login and Register.
2. Then there is a login button to enter the main page as admin.

Log-in menu display

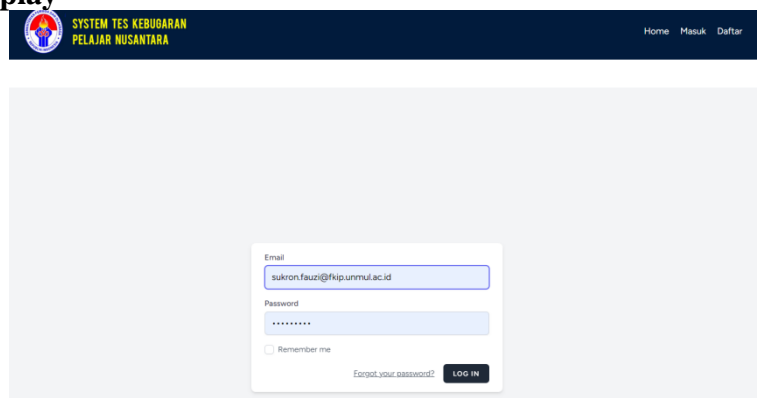


Figure 2. Log-in Menu Display

Information:

1. On the log in menu display there is an email and password
2. On the top right side there is a user icon, which if you click on the logout button will appear and will return to the login menu.

Fitness test form menu display

Figure 3. Fitness test form menu display

Information:

1. In the fitness test form menu there is a test participant data column
2. Data input button, age, BB, TB
3. Indonesian Student Fitness test data button

Display of Indonesian Student Fitness Test Data

Nama	Usia	BB	TB	M	H TB	IMT	Kategori	Sit Reach Test	Katego
Didik cahyono	20	70	170.00	NaN	0.00	Infinity	Obesitas	45	Cukup

Figure 4. Display of Indonesian Student Fitness Test Data

Information:

1. Data save display
2. After that, it appears showing the results of the fitness test data for Indonesian students

Discussion

The product resulting from this research is a web-based application that shows the results of Indonesian students' fitness tests which can be accessed via Google. There are five test items, namely sprinting, sit and race endurance, push-ups, sit-ups and standing broad jump, in the yellow column which will be the result of the test carried out. In the bottom table there is a fitness

classification which is an accumulation of five tests carried out which contains a tester which contains a classification of the body into two items of fit and unfit with a fitness level classification. Before producing this final product, there were several improvements based on expert judgment suggestions and input to produce the final product as shown in the picture above. Based on the results of the trials carried out, it was found that this application was feasible and valid for use, with a percentage of 91.00%. From field observations to the evaluation and publication stages of the tool, the tool was evaluated and tested by media experts, namely computer experts, media experts stated that the tool's effectiveness level was 86%, and practitioners at 91%. Based on expert tests stating above 80%, the tool is declared good and is a new development in research in the field of web-based physical fitness programs.

CONCLUSION

This research provides a conclusion that the web-based physical fitness application product program is a new test product in the Indonesian student fitness measurement test, which will make it easier for every Physical education teacher, trainer who plays sports to classify the level of physical fitness of athletes and students. This research aims to allow everyone to know for sure the classification of physical fitness levels and make it easier for users to calculate the fitness test results for Indonesian students. Becomes a new reference in the development of further measuring instruments in the field of physical fitness. It is hoped that the Nusantara fitness application product will become a reference so that it becomes a more perfect reference in viewing physical fitness test results.

REFERENCES

- Apriyano, B. (2017). Contribution of Physical Fitness to Learning Outcomes in Physical Education, Sports and Health (Penjasorkes) for Pertiwi Siteba Middle School Students, Padang. *MensSana Journal*, 2(2). <https://doi.org/10.24036/jm.v2i2.20>
- Ardilla, M. W., Wiguno, L. T. H., Kurniawan, A. W., & Mu'arifin, M. (2021). Development of Physical Fitness Learning Tools Based on the Articulate Storyline Application. *Sport Science and Health*, 3(4). <https://doi.org/10.17977/um062v3i42021p192-205>
- Asriansyah. (2018). The Influence of Traditional Games on the Physical Fitness of SMA Negeri 4 Kayu Agung Students. *JOSSAE : Journal of Sport Science and Education*, 03(1)
- Bangun, S. Y., & Zaluku, J. S. (2019). Survey Analysis of Physical Fitness Levels of Middle School Students at the Ta'dib Asyakin Islamic Boarding School in Medan. *Educational Publications*, 9(3). <https://doi.org/10.26858/publikan.v9i3.10455>
- Fauzian, F. S., Dinangsit, D., & Muhtar, T. (2018). Differences between Exercise Methods and Discovery Methods in Improving Physical Fitness. *Sports*.
- Gumantan, A., Mahfud, I., & Yuliandra, R. (2020). Development of an Android-Based Physical Fitness Test Measurement Application. *Journal of Sports Science*, 19(2).

- Hadi, H., & Kusumawardhana, B. (2021). Health and Physical Fitness Through Healthy Exercise in Kebondowo Village. *Journal of Community Sports Service (JPOM)*, 2(1). <https://doi.org/10.26877/jpom.v2i1.8575>
- Irfan, R., & Komaini, A. (2019). DEVELOPMENT OF AN ANDROID-BASED INDONESIAN PHYSICAL FITNESS TEST APPLICATION. *Stamina Journal*, 2(2).
- Kurniansyah, M. R. T. (2020). The Relationship between Anthropometrics and the Physical Fitness of High School Football Players. Mulya, G. (2020). The Effectiveness of Using Game Methods on the Physical Fitness of Elementary School Students. *JPOE*, 2(1). <https://doi.org/10.37742/jpoe.v2i1.18>
- Mustakim, M., & Surury, I. (2020). FITNESS AND ITS FACTORS IN UNIVERSITY FACULTY OF MEDICINE AND HEALTH STUDENTS MUHAMMADIYAH JAKARTA. *Indonesian Journal of Public Health Publications*, 6(3). <https://doi.org/10.20527/jpkmi.v6i3.8180>
- Najib, M., Satria, D., Mahfud, I., & Surahman, A. (2021). TRAINING ON THE IMPLEMENTATION OF THE PHYSICAL FITNESS TEST APPLICATION IN EXTRACURRICULAR SPORTS AT PELITA PESAWARAN VOCATIONAL SCHOOL. *Journal of Social Sciences and Technology for Community Service (JSSTCS)*, 2(2)