Web Based Application Development in Analyzing Indonesian Physical Fitness Test

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Abstract
This study aims to develop a web-based application to analyze Indonesian physical fitness test data. The population in the study were physical education teachers, totaling 17 people. The instrument of this research is a measurement questionnaire on aspects of excellence, aspects of ease of use, aspects of ease of learning and aspects of satisfaction with the applications that have been developed. The results of this study are a web-based application product in analyzing data on Indonesian physical fitness tests. Product assessment from physical education teachers on (1) aspects of excellence with an average score of 4.4 with the criteria "Very Good"; (2) the ease of use aspect with an average score of 4.4 with the criteria of "Very Good"; (3) the ease of learning aspect with an average score of 4.4 with the criteria of "Very Good"; and (4) aspects of satisfaction with an average score of 4.4 with the criteria of "Very Good". Assessment of physical education teachers shows that web-based applications in analyzing Indonesian physical fitness test data have "Very Good" quality with an overall average of 4.4.
Keyword: *Development, Application, Web-Based Application, Indonesian Physical Fitness Test*

I. Introduction

Technology is now a necessity, not a want. The development of technology accompanied by the development of the times can produce fast and accurate information and does not require a time that is long in tapping the information that is needed. So that technology-based services roll quickly and require collaboration of knowledge including science   and technology so that they are not used incorrectly. Collaboration is a very important part to do because the current technology is data-based and on the internet, meaning that at the same time technology can be detected and its development is very fast. Development science knowledge and technology of sport is the improvement of the quality and quantity of knowledge and technologies aimed at utilizing kaedah and theory of science that has been attested to increased functionality, benefits and application of science and technology that already exists or produce new technologies for the activities of sports and improvement of physical fitness

Physical fitness is a person's ability to carry out daily activities without excessive fatigue. This opinion is in line with what was conveyed by experts, freshness is physical, namely a person's ability to do daily work efficiently without excessive fatigue so that they can still enjoy their free time (Irianto DP, 2004: 2).

Efforts in knowing and understanding the components of physical fitness are very important, because the components of physical fitness are a determinant of the good or bad of a person's physical fitness. Based on the opinion of experts about the components or elements of physical fitness, it can be stated that the elements

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contained in the scope of physical fitness include muscle strength, muscle endurance, power, speed, flexibility, agility and cardiorespiratory endurance.

Basically, a person's level of physical fitness is in accordance with the type and intensity of the activity that the person is doing. For this reason, it is necessary to know the level of physical fitness because physical fitness is closely related to body functions in adjusting abilities to the activities carried out.

Based on several tests to measure physical fitness levels that are often used in Indonesia, physical fitness tests are the most frequently used by physical education teachers in determining the level of physical fitness of their students at school. However, in the process of analyzing the physical fitness level data produced, the process is still done manually, so it takes a long time to process the results of the physical fitness test. In the use of technology development, several researchers from various sciences have developed tools to analyze physical fitness test results. The presence of android or web-based applications in the use of technological advances is very much needed by sports practitioners and also physical education teachers in the field.

Many studies have been carried out to make it easier for exercise practitioners and physical education teachers to conduct fitness tests, one of which is making an Android-based application for assessing fitness tests. However, some applications have advantages and disadvantages ranging from installation that requires Android with the latest version, an unattractive appearance, complicated menu choices, so that in the process of analyzin test data to the application, it is necessary to look at the physical fitness test manual or the norm menu that has been provided.Applicationn so that it is not effective and efficient.

Based on the above background, the problem that is often experienced by practitioners and physical education teachers in measuring the level of physical fitness is that it takes a long time to analyze the data generated from a physical fitness test that is carried out, therefore researchers are interested in developing web-based applications. To analyze Indonesian physical fitness test data.

A. Development Research

The definition of development research is defined as a systematic analysis of the design, development and evaluation, learning processes and products that must meet the criteria of effectiveness, validity, and practicality. Research and development (R&D) is a basic research activity to obtain information on user needs (needs assessment), followed by development activities to produce products and assess the effectiveness of these products (Sugiyono 2009: 297).

Development research consists of two words, namely reasearch and development. The first activity is conducting research and literature studies to produce a specific product design, and the second activity is development, namely testing the effectiveness, validation of the design that has been made, so that it becomes a tested product and can be utilized by the wider community. Mulyatiningsih (2012: 161) explains that "research and development aims to produce new products through the development process".

B. Definition of Application

According to Jogiyanto (1999:12), the application is the use in a computer, instructions (instructions) or statements (statements) are arranged in such a way that the computer can process input into output.

According to Kadir (2008: 3) An application program is a ready -made program or program designed to perform a function for another user or application. Application is also defined as the use or application of a concept that is the subject of discussion or as a computer program made to assist humans in performing certain tasks.

C. Web Based Application

The web is one of the fastest growing internet resources. The distribution of web information is carried out through a hyperlink approach, which allows a text, image, or other object to be a reference for opening other pages. Through this approach, one can obtain information by moving from one page to another (Kadir, 2006).

Web-based application is an application that can be accessed via the internet or intranet, and at this time it turns out to be more and more widely used. Many of the growing companies are using web-based applications to plan their resources and to manage their companies.

D. Indonesian Physical Fitness Test

A test is a procedure or tool used in a series of assessments and measurements. Physical fitness test is a test used to determine a person's level of physical fitness.

The Ministry of National Education (2010: 1) asserts that "The Indonesian Physical Fitness Test (TKJI) is a measuring tool that contains a series of tests consisting of five test items. These five test items are a unit that must be carried out as a whole, to assess a person's level of physical fitness.

II. Research Method

This research uses research and development research with quantitative approach method. According to Sugiyono (2017: 297) research and development is a research method that is carried out intentionally and systematically with the aim of producing certain products and testing the effectiveness of these products . In line with this opinion, Sukmadinata (2008: 190) reveals that Research and Development is a research approach to produce new products or improve existing products.

The sampling technique used is non-probability sampling. According to Sugiyono (2017: 82). The trial sample was selected using a purposive sampling method, which is a type of non-probability sampling technique in which sampling is based on the criteria formulated in advance by the researcher. The population in the study were physical education teachers, totaling 17 people.

The instrument of this research is a measurement questionnaire on aspects of excellence, aspects of ease of use, aspects of ease of learning and aspects of satisfaction with the applications that have been developed. The data was obtained based on a questionnaire filled out via a google form. Adopt this research using a Likert scale with alternative answers: very good, good, enough, less and very less. In order to obtain quantitative data, the alternative answers are given a score, namely very good = 5, good = 4, sufficient = 3, less = 2, very poor = 1. The steps in data analysis include:
1. Collecting rough data
2. Scoring,
3. The score obtained is then converted into a value with a scale of 5.

Table 1. Product Assessment Criteria

Score	Score	Category
X > 4,21	A	Very good
3,40< X ≤ 4,21	B	Well
2,60< X ≤ 3,40	C	Pretty good
1,79< X ≤ 2,60	D	Not enough
X ≤ 1,79	E	Very less

(Source: Suharyanto, 2007:52)

The research was conducted in July 2021 by sending an application link and also a google form link used to fill out the questionnaire.

III. Result

Based on the development research steps carried out, the final product in the form of a web-based application is effectively used as a tool to analyze data on physical fitness test results that can be used by physical education teachers. The product produced in this research is a web-based application that can be accessed via the http://tkjiweb.rf.gd/ page. This product assessment is carried out with an assessment of 4 aspects.

The results obtained consist of 4 aspects, namely: (1) aspects of excellence, (2) aspects of ease of use, (3) aspects of ease of learning and (4) aspects of satisfaction. To simplify the data processing process, the data is tabulated into variables (X_1) aspects of excellence, (X_2) aspects of ease of use, (X_3) aspects of ease of learning and (X_4) aspects of satisfaction. Following are the results of the assessment tabulation:

Table 3. Assessment Results

No	Name	X_1	X_2	X_3	X_4
1	Afriwal Rahman, S.Pd.	4.0	3.6	4.0	4.0
2	AraikoRahmat, S.Pd.	4.0	4.0	4.0	4.0
3	AriefHidayat, S.Pd.	4.8	4.1	4.8	4.3
4	DzakiFuady, S.Pd.	4.0	4.0	4.0	3.9
5	FahmiRiawan, S.Pd	4.9	4.8	5.0	5.0
6	Firdaus, S.Pd.	4.0	3.5	4.0	4.0
7	HarisSatria, S.Pd.	5.0	4.8	5.0	4.4
8	Khairunsyah, S.Pd.	4.1	4.0	3.8	4.0
9	Misran, S.Pd.	4.4	4.9	4.8	4.9
10	Muhammad Randi Askari, S.Pd.	4.8	4.5	4.3	4.9
11	Mukhlish, M.Pd.	5.0	4.9	4.8	5.0
12	Muzakkir. M. Pd	3.6	3.7	4.5	4.1
13	Son of SukmaCahyadi, S.Pd	4.5	4.3	4.0	4.3
14	TeguhPurnomo, S.Pd	5.0	5.0	5.0	5.0
15	Teguh wan murib, S.Pd.	3.9	4.0	3.8	3.7
16	WirantoArifan, S.Pd.	4.8	4.5	5.0	5.0
17	ZikriRahmanda, S.Pd.	5.0	4.9	4.5	4.4

(Source: Research Data Results 2021)

Based on the assessment of the product of physical education teachers are as follows:

Table 4. The results of physical education teachers' assessments of web-based application products in analyzing Indonesian physical fitness test data

Aspects of assessment	Total value	Average	Category
Aspects of excellence	75.6	4.4	Very good
Aspects of ease of use,	73.6	4.3	Very good
Aspects of ease of learning	75.0	4.4	Very good
Satisfaction aspect	74.9	4.4	Very good
Average		4.4	Very good

(Source: Research Data Results 2021)

Product assessment of physical education teachers on (1) aspects of excellence with an average score of 4.4 with the criteria "Very Good"; (2) the ease of use aspect with an average score of 4.4 with the criteria of "Very Good"; (3) the ease of learning aspect with an average score of 4.4 with the criteria of "Very Good"; and (4) aspects of satisfaction with an average score of 4.4 with the criteria of "Very Good". Assessment of physical education teachers shows that web-based applications in analyzing Indonesian physical fitness test data have "Very Good" quality with an overall average of 4.4.

IV. Conclusion

Based on the results of research and discussion on the development of web-based applications in analyzing Indonesian physical fitness test data, it can be concluded that a web-based application product has been developed to analyze Indonesian physical fitness test data which can be accessed through the http://tkjiweb.rf page. .gd/ . In the trial for physical education teachers, they received an assessment of "Very Good" with an average score of 4.4.

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