

Development of Physical Test Applications Basketball Sports Model in Regional Student Education and Training Center

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Abstract—This study aims to develop an application model for physical testing of basketball athletes conducted using Visual Basic 6.0 applications for athletes at the education and training center for students in the Musi Banyuasin district. This research uses research and development methods. Based on the validity of the experts that have been obtained, the results of the first stage of validation from the application experts are 65.62%, and the physical experts and the basketball coach are 70% with a good enough category for the first validation stage. The results of the second stage of validation, the application of 87.5%, and the physical trainer and basketball coach 86.67% of the data concluded that the application for physical testing was suitable for use. Application tests on a small scale get a percentage of 55% with a bad category and physical impairment 75.4% with a fairly good category of data. The implication of this research is that the application of the basketball branch physical test can be applied to the evaluation process of the athlete's physical test used by the trainer so that the calculation is more efficient and practical to use.

Keywords: *physical test applications, basketball sports model, Visual Basic 6.0*

I. INTRODUCTION

Basketball is a game sport that is often contested in various competitions both at national and international levels. Basketball is a group sport consisting of two teams of five people competing to score points by putting the ball in the opponent's basket, [1]. Basketball is very suitable to watch because it can be played in a closed sports room and only requires a relatively small field. Basketball is a sport that continues to develop at any time, along with the development of technology at this time, and there are many sports that use technology in its development. This technological development is very important for everyone.

The rapid development of science and technology (science and technology) makes things easier and faster. Sports is one of the fields that cannot be separated from the use of science and technology, namely computers. In various fields, the development of science and technology has a very important influence, the emergence of new applications that are widely used by people to facilitate testing and measurement activities, such as the leg muscle strength test with a leg dynamometer. The tester only pulls the tool grip on the leg dynamometer so it will easily result in leg muscle strength on the tester. [2] the result is the designer of the Fitness Exercise Application can be used as an alternative application that can be used by beginners in understanding the techniques and effects of the use of fitness equipment. This application can also increase knowledge of fitness center members regarding fitness training. Results from application testing indicate that the application is suitable for use.

Tests and measurements are data collection activities in conducting assessments; assessments require data to produce an objective assessment. Tests and measurements are carried out in the fields of sports and education. There are many reasons to use tests and measurements in the assessment process. According to [3] Tests and measurements are an integral part of human activities, as well as in activities of sports teaching and training. The development of science and technology in a game of soccer the game has been progressing both in the science of coaching and in physical measurement tests. In the globalization era, the results of a test should use a computer application or software that can record and calculate all tests taken by athletes and find out the physical fitness level of athletes or VO2 Max of every athlete. Physical tests on each sport require different components - Different as in basketball requires 6 physical test components namely; (1) the strength of the type of test is the push-up norman of Fenanlampir Albertus (2) the durability of the type of test balke norman Fenanlampir

Albertus (3) the speed of the sprint test type 30 M Fenanlampir Albertus norm (4) the explosive power type of vertical jump test Albertus Fenanlampir norm type of Standing trunk flexion test of the Fenanlampir Albertus norm, and (6) agility of the type of running test back and forth the Fenanlampir Albertus norm. Tests and measurements are very important for the trainer to know the physical results on the athlete, especially for the trainers of the Student Education and Training Center.

The Student Education and Training Center is coaching that leads to achievement. Talking about PPLP also talks about sports that will be fostered, such as soccer, basketball, Pencak silat, and volleyball. Like coaching in basketball in the Musi Banyuasin district (MUBA), coaching at MUBA was said to be successful in basketball sports especially for women's basketball, in 2015 MUBA women's basketball team got silver medal at the Regional Student Sports Week, of course with the result of the silver medal in that the trainer has a well-structured training program and method, while the most important is his physical training program that supports the performance of athletes when competing. To find out the results of athletes' physical training, of course, the coach conducts physical tests on his athletes. According to observations made, the trainer still uses manual calculations to calculate the results of basketball athletes' physical tests at the Musi Banyuasin district education and training center so that it takes a long time to calculate. For this reason, research will be conducted on the development of a physical test application on the Student Education and Training Center Basketball in MUBA.

Based on the research results obtained by the application of Physical Education can be used as a medium of physical education learning for grade VII students at SMPN 1 Bangkalan. The feasibility of the Physical Education app score results with the title "Very Good", the researchers concluded that the use of smartphone media in supporting physical education learning process activities is very effective and efficient [5]. Results of the expert material assessment of application and prevention guidelines injury care for hiking sports (smartphone) android based a score of 4.725 was obtained in the "Very Feasible" category. Assessment of media experts obtained a score of 4.15 in the "Very Eligible" category. In a limited trial, a score of 62.96 was obtained "Very Decent." Large group trials obtained a score of 165.45 in the "Very Eligible" category [4].

From the problems contained in the lack of effectiveness and efficiency in the calculation of athletes' physical test results, a physical test application product is made in the basketball sport so that the trainer no longer counts manually; the trainer will then just enter the physical test results of the athlete on the computer and directly get the results from the norm. It Has entered the application. So that the trainer no longer counts manually, every athlete and the calculations are very effective and efficient. With this research, it is hoped that it can be useful, especially for coaches, to make it more practical and easy to know the results of physical tests carried out by athletes with accurate results.

II. RESEARCH METHODS

This research is research with research and development methods or often called R&D (Research and Development). According to Borg and Gall quoted by [7], research and development is a process used to develop products. Products referred to as textbooks, films for learning, and computer software are applications. So, it can be concluded that research and development is a process in creating the latest products and developing and validating an existing product

This research was conducted by piloting coaching athletes as many as 18 athletes consisting of female athletes. The application was tried directly by a coach of 2 trainers. The instrument was in this study, the researchers conducted direct observations in the field accompanied by interviews or interviews with respondents and provided questionnaires, while the supporting instruments were 1. Basketball game experts 2. Physical trainer experts 3. Expert computer-making equipment. Questionnaires are used to obtain information from expert validations to provide input and suggestions about the product to be produced useful for knowing product quality.

The design of the research development model was carried out in six stages.

- First, this research was developed based on the development of descriptive research to further survey the participants of the Musi Banyuasin Regional Student Education and Training Center in basketball.
- Second, the second step is to prepare the initial product design application that will be used to measure the physical tests of athletes, by asking recommendations from the validators of the basketball sports experts, the expert validations include 1. Coach and Ali Physical Basketball, 2. Expert device maker of computer applications. The results of the conclusions of the validation experts are used as a study to design physical test application products based on Microsoft Visual Basic 6.0 applications on a computer before being tested
- The third stage, product validation to experts involved in the research include 1) basketball game experts, 2) physical test experts, 3) Computer application making device experts. The results of the validation are then reviewed to improve the design of the model before being trialed.
- The fourth stage conducted a trial Product development trial using a group trial involving the trainers of the Musi Banyuasin regional Education and training center in the basketball sport of respondents first. Group testing is useful for analyzing the obstacles that might be faced and trying to reduce these obstacles when applying the next model. The first product revision is based on the results of a phase 1 product trial.
- The fifth stage is conducting an experimental research design that aims to test the product development of a basketball game physical test application developed for the activeness, effectiveness of the assessment, attractiveness for the implementation of the assessment.

Then conduct a field trial with a larger scale involving respondents of trainers from basketball. The second product revision was carried out after the product phase 2 trial.

- In the sixth stage, the basketball physical test application model in PPLPD Musi Banyuasin, at this stage, the data collection was carried out with instruments in the form of a test of endurance, flexibility, strength, agility (agility) which was then reported and analyzed as a whole.

III. RESULTS AND DISCUSSION

The quality of this research and development shows the percentage value with the category "Eligible," this is indicated by several validations from the expert team in each field. At the time after the trial Athlete feels happy and enthusiastic about this product because the tester is interested in trying to operate; this product can be spread for training aids and physical test instruments.

TABLE I. RESULT OF FIRST STAGE SOFTWARE VALIDATION

Σ	Max Value	%	Category
41	60	68 %	Good Enough

Based on expert validation, the results of the first stage of application validation are 68% in the good Enough category.

TABLE II. THE RESULTS OF THE QUESTIONNAIRE ON THE SOFTWARE APPLICATION MEDIA EXPERT

No	Expert Code	Statement Number								Σ	Max Value	%
		1	2	3	4	5	6	7	8			
1	Ex 1	3	3	4	3	4	4	4	3	28	32	87.5

The results of the questionnaire on the software application media expert whose validation percentage was 87.5% with the category of "Very Eligible."

The results of the questionnaire on the basketball expert in this field with a validation percentage of 86.67% with a category of "Very Eligible" in research and application development in the basketball sport is worthy of being used in future research instrument aids.

Small-scale physical test application tests get a percentage of 55% in the unfavorable category and a large-scale trial of 75.4% in the quite good category.

IV. CONCLUSION

The results of the study "Development of the Physical Application Model for the Basketball Sports Branch at the Regional Student Education and Training Center in Musi Banyuasin Regency" are considered suitable for use as a physical test tool for Basketball athletes. The basketball physical test application can be applied to the process of evaluating athletes' physical tests.

REFERENCES

- [1] Sutanto, Teguh. 2016. Buku Pintar Olahraga. Yogyakarta: Pustaka Baru Press
- [2] Wibowo, S. (2016). Perancangan Aplikasi Latihan Fitness Untuk Pemula Berbasis Multimedia. Teknik Informatika, Universitas PGRI Yogyakarta.
- [3] Hartati, H., Victorian, A. R., Aryanti, S., Destriana, D., & Destriani, D. (2018, November). Application of model development of soccer physical tests. In IOP Conference Series: Materials Science and Engineering (Vol. 434, No. 1, p. 012158). IOP Publishing.
- [4] Andrianto, S. D. (2016). PENGEMBANGAN APLIKASI PANDUAN PENCEGAHAN DAN PERAWATAN CEDERA UNTUK OLAHRAGA HIKING (SMARTPALA) BERBASIS ANDROID. Pendidikan Jasmani Kesehatan dan Rekreasi, 5(8).
- [5] Marvin, H. (2018). Pengembangan Aplikasi Penjas-pedia pada Smartphone Berbasis Android sebagai Media Pembelajaran Pendidikan Jasmani untuk Kelas VII di SMPN 1 Bangkalan. Satria, 1(1), 28-33.
- [6] Novianti, W. (2016). PROFIL KONDISI FISIK PEMAIN BOLABASKET PUTRA KKO (KELAS KHUSUS OLAHRAGA) SMA NEGERI 4 YOGYAKARTA. Pend. Kepeleatihan Olahraga-S1, 1(4).
- [7] Sugiyono.2016. Metode Penelitian dan Pengembangan. Bandung: Alfabeta