

ANALYSIS OF DEVELOPMENT NEEDS FOR ANDROID-BASED LOWER PASSING TESTS

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Abstract

This study aims to find out about the needs analysis for the development of an android-based lower passing test at SENIOR HIGH SCHOOL N 1 Tanjung Batu. This research method uses a quantitative descriptive method. This research uses accidental sampling technique. The samples obtained were 539 students and 1 PHYSICAL EDUCATION teacher. The instruments in this study used a questionnaire to test the validity and reliability as well as closed interviews. Data analysis in this study used descriptive statistical percentages in the form of frequency tables. Based on the results of the study, it was found that 60% of students in class X (ten) really needed it, students in class XI (eleven) with a result of 59% who chose it really needed it and in class XII the results obtained were 71% who chose it really need it, meaning that class XII needed more development Android-based lower passing test compared to 2 (two) other classes. It was generally stated that 63% of Tanjung Batu 1 Public High School students and PHYSICAL EDUCATION teacher interviews were in the category of really needing the development of an android-based lower passing test. As a recommendation that this development in the future can continue to be carried out to support progress and ease in carrying out the lower passing test in volleyball games.

Keywords: Analysis; Lower Passing; Test.

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INTRODUCTION

Sport is an activity of moving the body carried out by individuals to maintain physical fitness and body health. Sports activities are carried out in a systematic and structured way so that in sports activities an individual can inflame and develop their own potential, both physical, spiritual and even social potential (Apriyani, 2021). Sport is a process of systematic activity so that it can encourage and foster and develop a physical, spiritual and social potential (E Saputra, T Wibowo, 2020). In sport itself there are many noble values that are important and

useful for life in the formation of individual morals and character, because sport does not only concern individual relations but relates to the wider community.

When viewed from its own function, sport plays an important role in the health of the body, whereas when viewed from the social dimension, sport plays an important role in instilling the values and norms of everyday life. The values and norms contained in sports are needed as a foundation and inspiration for the life of the nation and state. The values contained include cooperation, communication, care for regulations, honesty, fair play, hard work, and of course there are many other values contained therein. Most Indonesians have realized that sport has many positive impacts on life. This is evident from the enthusiasm of the community with competitions being held in each region, nationally and internationally, as well as on holidays, not a few people carry out sports activities on the field or places where it is possible to carry out sports activities.

Volleyball is a game that is growing rapidly and has many fans in Indonesia. The progress of volleyball in Indonesia is shown by the many local volleyball courts that are used as regional sports halls. In addition, there are more and more volleyball matches ranging from inter-villages, cities to general competitions, especially the holding of the volleyball Proliga event. This shows that the game of volleyball besides being a sport can be used as an achievement sport and a pro game. Thus volleyball is a complex team sport with specific techniques, tactics, athletic movements. Volleyball players perform short shifts, prefixes interspersed with speed and jumps in a defensive or attacking stance.

This game is played with a field divided by a net with a height of 2.43 m (for men) while the net height for women is 2.24 m, the height in jumping is the most important variable for volleyball player (Ariana, 2016). The main objective of this volleyball game is to drop the ball as quickly as possible in the opponent's defense area by crossing over the net, but before that the player must have good basic techniques to make it easier to play this volleyball game. The game of volleyball is actually a medium that has a complete philosophy. The completeness of this philosophy is related to educational values, social values, other values that

can be developed broadly in accordance with what we can develop (Kristiyanto, 2017). With the rapid development of science and technology, this has a direct impact on all lines of life including in the teaching and learning process which is also inseparable from the world of sports. With the use of science and technology in the field of sports from year to year in various developed countries or professional athletes have experienced significant changes and improvements, for example at this time if we want to increase running speed continuously, conceptually it is the ability to cover short distances (A. Anjas Tamara, 2021). The development of sports technology is very important to be utilized, especially in the State of Indonesia to improve the achievements of athletes both locally and nationally. Developments and advances in sports technology are indispensable for the progress of sports achievements (Prasetyo et al., 2018). One thing that has not been optimally developed is the lowerpass test which is still done manually so it looks less effective.

Initial observations during the Introduction to Lecture Field course at Tanjung Batu 1 Public High School in November 2022, there were several problems in the teaching and learning process of passing lowerhand in big ball games (volleyball). This problem occurs when the lower passing test is carried out, as is the case when students stand up to count and determine the height of the ball that has been set. Tanjung Batu N 1 High School students do not fully lowerstand the provisions of the lower passing test points. The height requirement for throwing a volleyball can be calculated when the ball passes over the head of the student doing it. If the lower passing is done by throwing the ball at a height parallel to or below the head, it will cancel the results of the lower passing calculation. Because students still do not fully lowerstand the provisions of the points for the lower passing test, it can also result in the calculation of points being unclear and the manual passing test taking a lot of time, because the instructions for carrying out the test are carried out repeatedly. This observation was made to obtain information about the problems that occur when implementing the volleyball lowerpass test.

Previous research on developing test kits passed from (Suriadi & Dewi, 2020) the development of this tool was in the form of an adaptation of the previous test kit which was still a wall with a diameter of 1.5 x 1.5 meters with a height according to the needs of the test to be carried out, into a portable form which can be used anytime and anywhere with hard materials such as walls so that the ball's reflectivity is not reduced and equipped with sensors so that calculations become easier and more accurate, this development makes portables like reflective walls that have added sensors, besides that (Hidayat et al., 2018) in his research making target passing using an iron pole adjusted to the height of female or male athletes, the tool is computer-based because it is directly related to the computer, judging from the development carried out to make the target match with a predetermined size, besides it's research on p model development Volleyball learning is widely carried out such as the Pratama research, CMW 2020 concerning the development of a learning model for passing lower volleyball games, then (Rudi & Arhesa, 2020) developing a learning model for passing lower for elementary school children, further research by (Insan et al., 2022) is about the development of low-level learning in junior high schools using the drill method, (Mu'arifuddin, 2018) research on the development of the lowerpass drill method for Budi Utomo students (Destriana et al., 2022). Looking at the research that has been done by previous researchers, this research was conducted with the aim of developing an Android-based lower passing test.

During the teaching and learning process of lowerhand passing in big ball games (volleyball) there are problems, as is the case when students stand up to count and determine the height of the ball that has been set. This student does not fully lowerstand the provisions of the lower passing test points. Because students still don't fully lowerstand the provisions of the points for the lowerpass test, it can also result in point calculations being unclear and the manual lowerpassing test taking up a lot of time. So that with the development and advancement of sports technology it is very necessary for the progress of sports achievements. One thing that has not been optimally developed is the lowerpass test which is still

done manually so it looks less effective. So it is necessary to develop a more innovative and practical lower passing test to be accessed like the lower passing test which is carried out based on Android. So it is necessary to do a needs analysis for the development of an android-based lower passing test at Tanjung Batu 1 Public High School. This study aims to analyze the needs of developing an android-based lowerpass test in volleyball games so that from the results of this study it can be obtained what things are needed in the development of an android-based lowerpass test and get reasons why this android-based lowerpass test is feasible to develop.

METHOD

This type of research is descriptive quantitative, using survey methods, and for data collection researchers use questionnaires. The subjects of this study were students of SENIOR HIGH SCHOOL N 1 Tanjung Batu. Data collection was carried out by distributing questionnaires via Google forms which were filled in via online links with quantitative data types with instruments in the form of questionnaires. Questionnaire is a data collection technique by asking questions to be answered by respondents. This data collection technique was carried out by researchers by distributing a list of questions (questionnaire) to respondents who needed the development of an android-based bottom passing test. Filling out a questionnaire was carried out to find respondents' opinions regarding the need to develop an Android-based lower passing test.

This research is focused on students of SENIOR HIGH SCHOOL N 1 Tanjung Batu for the 2023/2024 academic year which will be held from 9 to 24 January 2023. This research is divided into 2 parts. for research. This trial was carried out by filling out a questionnaire with 23 statement items via the google form link: <https://forms.gle/3EEWUe1Quu3Qvsjz9> for students of class X (ten) Science 4 and class X (ten) Social Sciences 1, a total of 62 students. Second, data collection for the analysis of the needs for the development of an Android-based lower passing test was carried out by providing a questionnaire via the Google

Form link to be filled in by students of senior high school N 1 Tanjung Batu. During the research, data collection techniques were used by researchers in the form of questionnaires, interviews, and documentation.

The questionnaire used in this study was given to all Tanjung Batu 1 Public High School students via the Google form with the aim of making it easier for researchers to collect data and to analyze the needs for developing an android-based lower passing test, the questionnaire given consisted of 22 statement items. The numbers and formulas in this study are only supporting data which will then be analyzed accordingly. The value of the responses of students who filled out the questionnaire was calculated and analyzed using the following formula (Khoir et al., 2021).

$$\text{Percentage} = (\text{Total Score (x)}) / (\text{Maximum Score (xi)}) \times 100\%$$

Validity is a measure that shows the level of validity of an instrument. The instrument is said to be valid or valid if it has high quality and vice versa, if it is able to measure what reveals data from the variables studied quickly.

The correlation formula is as follows:

$$r_{xy} = \frac{n \sum XY - (\sum X) (\sum Y)}{\sqrt{\{n \sum X^2 - (\sum X^2)\} \{n \sum Y^2 - (\sum Y^2)\}}}$$

Information:

r_{xy} = Correlation coefficient between the item scores and the total score

n = Number of respondents

X = Item score

Y = Total score

Data processing and data analysis with the help of the computer program SPSS version 25 and using Microsoft Windows Excel 2010. Items are declared valid if the coefficient r is calculated $> r_{\text{table}}$, if there is a question that is invalid if it has a correlation greater than e_{table} with a significant level of 5 % and r_{table} 0.349 then it is declared reliable. Correlation results that are senior high schooler than r_{table} then the question is declared invalid.

The questionnaire in this study was created, consulted and examined before being used by an expert validator. Then the statements and questions that have been consulted must be in accordance with the alternative answers available in the questionnaire. After being declared feasible by the validator, the questionnaire is ready to be tested on students of class X (ten) IPA 4 and X (ten) IPS 1 senior high school N 1 Tanjung Batu. To find the validity level of the questionnaire, you can use the Pearson Product Moment formula and t-test with the help of IBM SPSS Statics 25.0 2017. Decision making in this reliability test is that if the $r_{count} \geq r_{table}$ then the questionnaire items used are declared reliable or consistent, otherwise if the value of $r_{count} \leq r_{table}$ means the questionnaire items used are unreliable or inconsistent. After obtaining the results of 22 valid statement items and 1 invalid statement item, then a questionnaire reliability test was carried out. The reliability test of the questionnaire using the Alpha formula with the help of SPSS 25 obtained the results $r_{count} \geq r_{table}$ which was $.958 \geq .349$.

RESULT AND DISCUSSION

The questionnaire used in this study was given to all Tanjung Batu 1 Public High School students via the Google form with the aim of making it easier for researchers to collect data and to analyze the needs for developing an android-based lower passing test, the questionnaire given consisted of 22 statement items. In addition, researchers conducted interviews with physical education teachers with the aim of only being supporting data and completing the data obtained from the questionnaire given to students, this was to obtain more valid

Table 1. Recapitulation of Percentage and Frequency analysis of the needs of the development of android-based lowerpass tests

Criteria	Frequency	Percentage
Really need	340	63%
Need	155	29%
Currently	34	6%

No need	6	1%
Very Unnecessary	4	1%
Total	539	100%

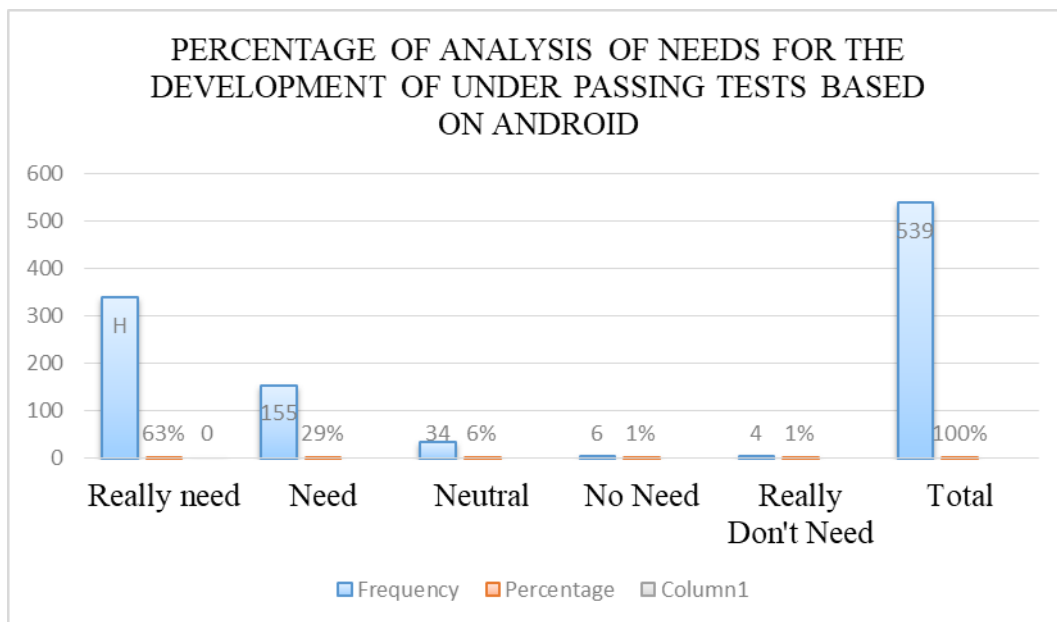


Figure 1. Percentage of Needs Analysis for the Development of Android-Based Lower Passing Tests

Based on table 1 and figure 1, the results were obtained with a total sample of 539 according to the criteria found: very high 2, high 18, moderate 131, low 259, and very low 129. Judging from the percentages, it was found: very high 0%, high 3% , moderate 24%, low 48%, and very low 24%.

Discussion

This study used 1 physical education teacher respondent and Tanjung Batu 1 Public High School students consisting of grades ten, eleven, and twelve. The research was conducted by distributing questionnaires via the Google form to collect data about the needs analysis for the development of an android-based lower passing test at senior high school N 1 Tanjung Batu. Interview questions for physical education teachers and 22 questions for student questionnaires. Based on the results of the research, it was found that 63% of Tanjung Batu 1 Public High

School students really needed an analysis of the needs for developing an android-based underpass test which was a form of innovation in implementing the underpass test which initially could only be done manually. Based on the class division of the research, it obtained results with the criteria of really needing 99 respondents, needing 51 respondents, moderate 14 respondents, not needing 1 respondent, and really not needing 1 respondent. Judging from the percentages, it is found: really need 60%, need 31%, moderate 8%, don't need 1%, and really don't need 1% for class X (ten). While the research results obtained from eleven class found that 114 respondents really needed it, 58 respondents needed it, moderate 14 respondents, 5 respondents didn't need it, and 3 respondents really didn't need it. Judging from the percentage, it was found: really needed 59%, needed 30%, moderate 7%, didn't need 3%, and really didn't need 2% and the results of the study in class XII (twelve) obtained results with the criteria of really needing 127 respondents, needing 46 respondents, while 6 respondents, while the results of respondents who do not need and really do not need 0 respondents. Judging from the percentages, it was found: really needed 71%, needed 26%, moderate 3%, didn't need 0%, and really didn't need 0%.

This study used 539 respondents from senior high school N 1 Tanjung Batu with 22 statement items to obtain a percentage of 63% of students who really needed the development of an Android-based lower passing test. This research is said to be effective because it obtained an overall percentage of 100% with 63% really needing it, 29% needing it, 6% moderately, 1% not needing it and 1% really not needing it. According to (Noviyanti, 2020), analysis is an activity to look for patterns, or ways of thinking related to systematic testing of something to determine parts, relationships between parts, and their relationship to the whole. Analysis of development needs can also be seen from students' needs for the development of an Android-based lower passing test. Factors that influence the need for developing android-based passing tests in standards to achieve the needs for developing android-based passing tests, from the student's point of view, are as follows:

Based on the indicators of descriptive analysis on the indicators of use can be made/accessed at any time which has 2 (two) statement items, in point 1 (one) there are some dominant students who choose to strongly agree and there are some students who choose not to agree that if the pass test under the ball Volleyball is made through an android based application. Point 2 (two) shows that there are students who choose to disagree and dominantly choose to strongly agree that students would prefer if the Android-based volleyball underpass test program could be accessed anywhere and anytime. (Sugiharto et al., 2020) states that the perspective of perceived ease of use is a level where a person believes that using a particular system can reduce one's effort in doing something. The convenience perspective is related to the successful implementation of the android-based underpass test, the application of the test can be understood as the willingness and ability of students to participate in the development of the android-based underpass test. Based on the indicator of use can be accessed at any time which has 2 (two) statement items, in point 1 (one) there are students who are more dominant in agreeing and some students choose neutral that students always express opinions when the discussion takes place. Point 2 (two) there are some students who disagree and dominantly choose neutral and that if the Android-based volleyball underpass test program can be accessed anywhere and anytime. Opinion (Kartini, 2021) The yardstick for measuring the success or effectiveness of a lesson can be seen from the interaction between the teacher and students. This means that Tanjung Batu 1 Public High School students are still adapting to carrying out the android-based lower passing test.

Based on the data indicators obtained from the valid and reliability android-based underpass test with a total of 1 (one) statement item, there were several students who chose to disagree and more dominantly chose to strongly agree about the statement with the android-based underpass test the data obtained was valid and reliability. For a researcher or final semester student who is currently in the process of completing a thesis or final assignment, the terms reliability and validity are familiar. Most of us consider these two terms to be

almost the same. However, validity is the degree of accuracy between the data that occurs on the research object and the power that can be reported by researchers in terms of (Machmud, 2016) stating that reliability relates to data consistency and stability of data or findings.

Based on the indicators it makes it easier to count points when carrying out the bottom passing test with a total of 3 statement items, in point 1 there are dominant students who choose to strongly agree and there are some students who choose to disagree if the development of an android-based bottom passing test can make it easier to count the points. Point 2 there are several students who choose to disagree and more dominantly choose to strongly agree if the Android-based application can assist students in determining calculations when carrying out the underpass test. Point 3 are students who dominantly choose to strongly agree and there are some students who choose to disagree if the manual passing test results in an unclear passing point count. One of the indicators makes it easier to count points when carrying out the underpass test if at the time of the Android-based underpass test the counting of points obtained is valid so that students no longer need to be confused in determining points.

Based on the indicators of learning to be more innovative with current technological advances with a total of 7 (seven) statement items, in point 1 (one) there are several students who strongly agree and dominantly students who choose neutral that if in the future sports science will switch to android applications. This android-based learning device aims to be a learning device application in the form of an Android-based learning device reference. Item 2 (two) shows that there are students who choose very strongly agree and dominantly choose agree and neutral if the lower passing test is carried out based on Android. Point 3 (three) there are students who strongly agree and there are some students who choose to disagree about the statement I need more innovative learning tools/. Point 4 (four) there are several students who strongly agree and dominantly choose neutral towards the statement that I prefer Android-based learning. Point 5 (five) there are several students who choose setu and dominantly choose neutral towards the statement I

prefer the lower passing test to be carried out based on android. Point 6 (six) there are several students who choose to disagree and dominantly prefer to strongly agree with the existence of an android-based lower passing test that is very necessary in the current era of life. Point 7 (seven) there are students who choose to agree and predominantly choose neutral if the volleyball underpass test is made through an Android-based application in accordance with the current 4.0 era.

Based on indicators of learning to be more innovative with current technological advances with a total of 5 (five) statement items, in point 1 (one) there are some students who choose to disagree and dominantly choose to agree that using an Android-based application can increase your competence as a student. With current technological advances, it can make it easier for teachers and trainers to review and evaluate student progress more easily. Point 2 (two) there were several students who chose not to agree and dominantly chose to agree that using an Android-based application would facilitate monitoring and evaluation of the implementation of the lower passing test. Point 3 (three) there are students who strongly agree and dominantly choose neutral if using an Android-based application will improve the quality of the lower passing test which is more relevant. Point 4 (four) there were several students who chose not to agree and dominantly chose to agree if the bottom passing test would be more effective if it was carried out through an android-based test. Point 5 (five) there are more students who choose to strongly agree and some students choose to disagree with my statement requiring the development of an Android-based lower passing test.

Interviews in this study took data from 1 physical education teacher respondent with 15 questions to obtain an overall percentage score of 100%. This research is said to really need the development of an android-based lower passing test because it gets a 100% percentage result. According to (Khoir et al., 2021) an interview is a meeting of two people to exchange information and ideas through questions and answers, so that meaning can be constructed in a particular topic. The need for the development of an android-based lower passing test can be seen

that students have agreed and need the development of an android-based lower passing test contained in the student's questionnaire answers. which is reinforced by the theory which states that the development of underhand passing is needed to facilitate the learning process in volleyball, especially when underhand passing is carried out in accordance with the thesis (Wibowo, 2016).

CONCLUSION

It was conveyed that the results of the study were seen from the class division, the results obtained were as much as 60% of students in class X (ten) really needed it, students in class XI (eleven) with a result of 59% who chose really needed it and in class XII obtained results of 71% who chose it really needed it, meaning that class XII needs more development of an android-based lower passing test than the other 2 (two) classes. In general, it was conveyed that 63% of Tanjung Batu 1 Public High School students really needed the development of an android-based lower passing test. This study aims to find out about the needs analysis for the development of an android-based lower passing test at senior high school N 1 Tanjung Batu. This research method uses a quantitative descriptive method. The instruments in this study used questionnaires and closed interviews. interviews with physical education teachers, it is in the category of really needing the development of an android-based lowerpass test.

Based on research data on the needs analysis for the development of an android-based lower passing test at Tanjung Batu 1 Public High School in the 2023/2024 academic year, this research is expected to contribute to the development and progress of the world of education, especially in the fields of physical education, sports and health. This development is expected to provide progress and convenience in carrying out the underpass test in volleyball games. This research can realize the development of learning techniques with steps or other development methods.

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