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Designing of Android Based Learning (Mobile Learning) For Multimedia Students

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Abstract. The purpose of this study to create learning media M-Learning to support the learning process in the Multimedia Vocational High School and know the level of prevalence and M-Learning as a medium of learning. With research and development research model, this media was developed using Android Studio. The result of this research is a dynamic Android-based application that runs online as a supporter of learning. From the results of validator assessment and student response can be obtained from the media expert value obtained 65% in the sense of valid, get a low score due to after making many revisions of the application. From the material experts get the value of 85% which means valid. The students' responses, a validity score of 94.7% is obtained which is included in a very valid category used. The conclusion shows that by validator assessment the learning media can be used as supporting in self-study.

1. Introduction

The student is required to understand and act in the classroom and it is very important for selecting the media learning to determine the learning outcome. Instructional media is needed to help students achieve the best learning outcome [1].

With the purpose of research based on the problem statement that has been presented, the research objectives can be prepared. 1) Determine the M-Learning learning media to support the teaching and learning process in multimedia subjects. 2) Know the level of M-Learning validity as a learning medium. With product specifications the Android-based Application is easy to use, the product can be used anywhere and anytime, the resulting product is a dynamic application. In general, this study can help educate the distribution of information in education that will have an impact on improving the quality of education, especially in the field of information technology for teachers, can make reference to creating educational innovation to provide innovative teaching materials. for students, can maximize mobile devices to meet the needs of science. for researchers, can provide additional insight into the concept of based Mobile Learning.

2. Method

In this study, the research method used in this research is Research and Development (R & D). "Research Procedure for Sadiman et al in its Research Procedure [3]: A Practical Approach (Revision)" which has eight stages: 1) Identification of Research Needs, 2) Purpose Formulation, 3) Formulation of material items, 4) Formulation of success tools, 5) Media manuscript formulation, 6)

Tests or product trials, 7) Revisions, 8) Manuscripts are ready to be produced. Following the steps of the study based on a number of respondents was 38 students from Vocational High School (SMK) Kusuma Negara Kertosono. The method is used to collect the data in the form of an etiquette to students and validators to determine the level of validity of the application. Questionnaire data processing is also described descriptively. Questionnaire data processing from experts when the validity and questionnaire were analyzed using the percentage formula according to Akbar and Sriwiyana [4].

3. Results and Discussion

This research produces media Android consisting of a front page, announcement page, how-to page, exam page, page, material page, and search page. The discussion is a description of the data that will be presented from the results of the study to give an overall picture of the data obtained. Data analyzed sourced from media validation, product validation, and response by students. In the process of making this media a prototype given to media experts validated, the result of the validation of the media was re-evaluated for refinement as in the development procedure. Media production procedures that use developer software Android Studio.

Data analyzed are used to determine the level of media in the teaching and learning process. The resulting learning media is validated by the validators to determine the level of learning media validity. In this case the validator consists of three validators, material validators from Unesa Informatics Engineering Lecturer, media validator from Unesa Informatics Engineering Lecturer and one validator from Master Teacher at SMK. The creation of based learning media Android- through several stages in the research method, The validation investigative instrument used has a scale of 1-5, then data that data is obtained. Analyze the quality of learning media based on Android-based media experts. The data obtained will be analyzed with the following conditions:

Table 1. Quality criteria based on the research table according to Sukardjo of 2014

Score Score	Table Quality Interval	Category
1	X*t*+1.80 Sbi <X	Very good
2	X*t*+0.6 Sbi <X ≤ X*t*+1.80 Sbi	Good
3	X*t*+0.6 Sbi <X ≤ X*t*+0.6 Sbi	Quite
4	X*t*+1.8 Sbi <X ≤ X*t* -0.6 Sbi	Less
5	X ≤ X*t* - 1.80 Sbi	Very Less

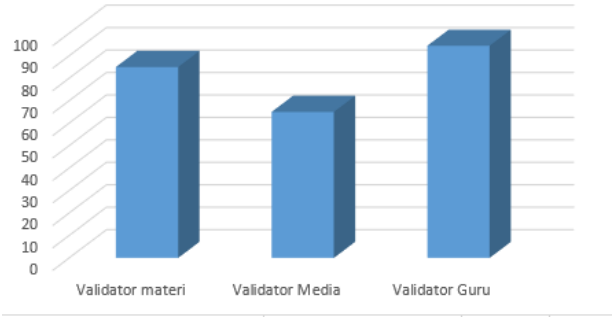
Also, use a percentage of validity table of Suharsimi Arikunto to know the level of validity obtained from the media that has been created, it aims to determine the level of media validity created. Here is the validity table based on Arikunto [2]

Table 2. Criteria based on percentage according to Suharsimi Arikunto [2]

No.	Media Quality Table of	*PercentageInterpresence Rating*
1	81-100%	Very Valid
2	61-80%	Valid
3	41-60%	Valid
4	Only21-40%	Less Less
5	0-20%	Invalid

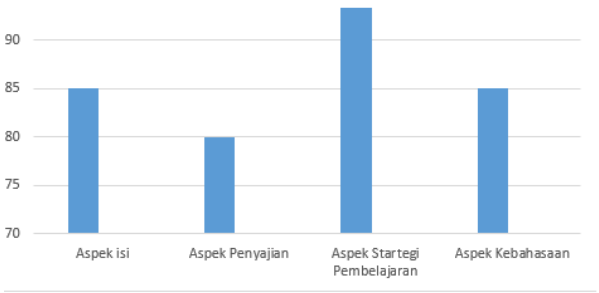
In data collection, research using questionnaires to media experts , material experts, subject teachers, and students, where each of these aspects has different roles. Following data and discussion by media experts.

In media experts have 17 point indicators with ideal minimum scores are 17, ideal max score is 85, ideal average score is 51, and ideal standard deviation 11.34 Based on media expert assessment obtained value 55 which means enough category, from media expert, provide suggestions for refinement in order to be able to assess more than the subject teachers, following the suggestions provided: (a) The foreign language used is replaced in English; (b) There is still a typing error; (c) Application Instructions are just text complete with image capture if possible with the description of the video; (d) Text composition of the material is neat, there are alignment same with justify and less implement HTML functions; (e) Source link is fully explained; (f) Material link is not much, better not placed in menu but in HOME Application Qualitative Android Based on Present Validity. From the graph 1 then obtain the total graph of the validity of the application as follows



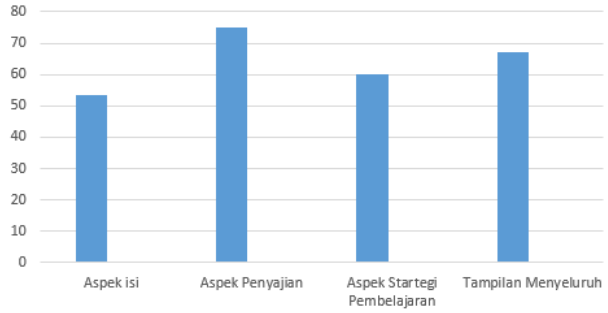
Graph 1. Graph of overall media validity scores

The above graphs show the data as a whole, based on the rating of each validator. The value of the Specific Material Specific can be seen as follows.



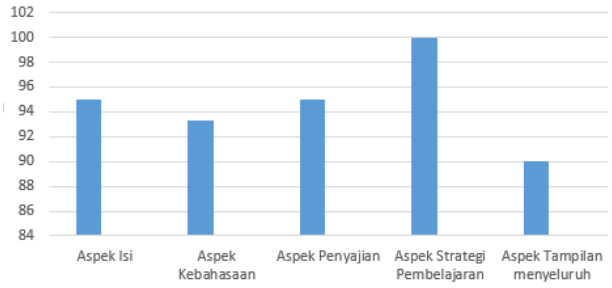
Graph 2. The score of the material validator score in every aspect

Material Validator has four aspects that are assessed, that is the content of the content obtained by the value of 85, the presentation aspect obtained by the value of 80, the aspect of the learning strategy obtained by the value of 95, the linguistic aspect obtained by the value of 85. The value of Specific media validator can be seen as follows.



Graph 3. Graphics score of media validator in every aspect

The media validator has four aspects that are assessed that are the content of the content obtained by the value 53, the presentation aspect obtained by the value 75, the aspect of the learning strategy obtained by the value 60, the overall view aspect obtained by the value 68. The value of the validator Master of subjects specifics can be seen as follows



Graph 4. The validation graph of each aspect

Master Teacher's ability to take subjects has five aspects that are assessed, the content aspect is 95, the linguistic aspect is 93.3, the presentation aspect 95, the learning strategy aspect 100, the view aspect comprehensive value is 90.

4. Conclusion

Based on the research in the creation of applications for learning-based M-learning in basic subjects - basic Multimedia in Class XI Multimedia I aimlessly following conclusion: this media development using current models of development research & development (R & D) through the eight stages; from the results of validator assessment and student responses can be obtained the value of the media experts gained 65% in valid meaning, obtaining a low score because of the aftermath of many app revisions. From material experts get a value of 85% which means it is very valid. From subject area teachers to 94.4% of the subjects are very valid categories where the validation of the subject teachers is the ultimate value of the application because the application is enhanced first by media experts and materials experts before being validated by subject teachers. From the student's own responses, the validity value of 94.7% which is included in the very valid category is used.

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