Model Development of Android-Based Learning in Vocational High School

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ABSTRACT

This study aimed to develop an android-based learning model for subjects of Creative Products and Entrepreneurship in Catering students at Vocational Schools. The study analyzed the validity of android-based learning models, and analyzed practicality and the effectiveness of android-based learning models for Creative Product and Entrepreneurship subjects in Catering students at SMK Negeri 9 Padang. Based on the validity assessment of material experts, media experts, linguists, and practitioners, the average score of material aspects is 4.78 (Very Eligible), the media aspect is 4.22 (Very Eligible), and the language aspect is 4.23 (Very decent). The results of practicality tests for teachers and students, as well as the effectiveness test of the use of android-based learning media on students of Creative Product and Entrepreneurship subjects conducted using a questionnaire, obtained a practicality value of 4.55 (feasible) and effectiveness of 4.62 (feasible).

Keywords: Learning Model, Based on Android, Product Subjects Creative and Entrepreneurship

1. INTRODUCTION

The subject of creative and entrepreneurial products is one of the subjects of vocational specialization in vocational expertise in SMK. This subject provides knowledge, skills, and attitudes -based learning *Android* is an application of *E-learning learning*. The design of the development of a learning model is *E-learning* based on constructivism learning theory, namely how students can build their knowledge through the learning experiences they get in the learning process. Tasker (1992: 30) put forward three emphases in constructivism learning theory as follows. First is the active role of students in meaningfully constructing knowledge. Second is the importance of making connections between ideas in meaningful construction. The third is to link ideas with new information received.

Development of learning models *e-Learning* is a term that refers to an activity, usually, education or training that uses several types of devices mobile (David Parson, 2007). It is an effort of utilizing technology from mobile devices that has exceeded its primary function, namely to communicate. Besides, this mobile device has also received support in terms of connectivity. E-Learning is a type of teaching and learning that allows the delivery of teaching materials to students using the Internet, Intranet, or network media computer, (Hartley, 2001) in Wahono (2008).

E-Learning is a unique learning because learners can access learning materials, directions, and applications related to learning, whenever and wherever. It can increase attention to learning material, make learning pervasive, and can encourage learner motivation for lifelong learning. Besides, compared to conventional learning, e-Learning allows more opportunities to interact informally between learners so that this model can improve the quality of learning of Creative and Entrepreneurship Products that can improve students' field expertise and also 21st-century competencies needed by the future.

Based on observations made at SMK N 9 Padang, most students make use of mobile phones only limited to being used for telephone, SMS (Short Message Service), playing songs/videos, accessing social networks (Facebook, Twitter, BBM), even entertainment such as games. According to research conducted by Yuniati (2015), mobile learning is able to make mobile phones that were initially only used for SMS, telephone, internet can be a complete learning tool that contains subject matter consisting of question and material try out that is equipped with various features such as search, jump to and back. The subject of Creative Products and entrepreneurship is one of the adaptive subjects studied in Vocational High School (SMK). Studying Creative Products and entrepreneurship aims to find out how can be taken to achieve entrepreneurship competency subjects, especially about the characteristics of entrepreneurs, namely discipline, high commitment, honest, creative, innovative, independent, and always working. Achieving competence requires learning resources that are genuinely appropriate and relevant so that it can bring students to more realistic situations, meaning that in the learning process students are brought to understandings that are easier to understand with simple examples, so that it can be achieved needed Android-based learning media in the form of programs (software) simple, quality and easily understood by students

Based on interviews that have been conducted by researchers with teachers of Creative and Entrepreneurship Product subjects, it is known that learning requires attractive learning media for students that can be used at anytime and anywhere. One of the new learning media is Android. According to the teacher who teaches creative and Entrepreneurship Product subjects Android this is one of the new learning media for students because in the Padang N 9 Vocational School, primarily in the Creative and Entrepreneurship Product subjects learning media such as Android have never been developed before. The existence of Android is also expected to be able to overcome the limited number of hours of learning Creative and Entrepreneurship Products at SMK N 9 Padang, for practical activities students can also increase learning hours independently with Android outside the learning hours of Creative Products and Entrepreneurship. In line with this, learning Creative Products and Entrepreneurship at SMK N 9 Padang consists of 5 materials that must be studied, namely the subject matter of production costs, production marketing, simple financial reports, promotional media for marketing, and online marketing. Based on the results of observations of class XII students at SMK N 9 Padang, they have difficulty in finding material and examples of each material, especially promotional media for marketing and in doing online marketing.

Based on some of the problems outlined above, the researchers conducted a development study entitled "Development of-e-Learning Learning Model an Android Based Subjects of Creative and Entrepreneurship Products in Class XII SMK N 9 Padang". The existence of this research is expected to produce a valid, effective, and practical android-based e-Learning learning model and products in the form of Android applications in Creative and Entrepreneurship Product Subjects for Vocational High School (SMK) students.

2. METHOD

Based on the background and formulation of the problem in this study, the type of research conducted was *development research*. The development model used was a 4D model consisting of 4 stages namely, the discovery (*define)* or analysis of needs, design *()* development, development *(develop),* and evaluate *(evaluate) (*Thiagarajan in Triantono, 2009: 190)

Product development based learning model android subjects Creative Products and Entrepreneurship was a learning material that has been developed by taking into account aspects of learning and media as a principle of learning message design. The product development research conducted was directed to produce a product in the form of android-based learning for culinary students at SMK Negeri 9 Padang, which is used to improve the learning process and student competence. Therefore this research process was carried out and begins with (1) a preliminary study, (2) then designing an Android-based learning media, (3) conducting product validation, and (4) revising and refining based on validation data analysis

from material experts, experts learning design and software engineering experts, followed by individual trials, small group trials, and field trials to produce learning media that are appropriate for use in accordance with the characteristics of the subjects and students as users.

Aspects that were revised and refined based on data analysis and trials and input from material experts, learning design experts, software engineering experts and students as users of this interactive learning media, aim to explore some aspects that are prevalent in the process of developing a product. Learning media variables have a very appropriate average value. The learning media variables assessed included content eligibility, presentation, linguistic, and graphic.

The benefits of using android-based learning media for Creative Product and Entrepreneurship subjects are as follows: (1) the material is easy to understand because the concepts presented are planned to make it easier for students and systematic, (2) learning faster and more attractive so it does not cause boredom because it can be used repeatedly repeated, (3) Android-based learning media can also be used as an alternative learning media individually.

3. RESULTS AND DISCUSSION

Validity assessment by material experts on the development of android-based learning media was carried out by several people including material expert lecturers from the Department of Electronic Education, FT UNP, media experts from the Department of Information Education, linguists from the Indonesian Language Department FBS and practitioners from teaching teachers Creative Product and Entrepreneurship subjects at SMK N 9 Padang. The validation assessment is presented in the following table 1:

In table 1, regarding the results of the assessment of material aspects, the average score of material aspects in the media *E-learning* Android-based 4.78. If converted into qualitative data based on a five scale assessment category, the material aspects of the media *E-learning* Android-based are categorized as "Very Eligible"

In table 2, regarding the results of media aspect assessment, the average score of the media aspects in the media E-learning Android-based is 4.22. If converted into qualitative data based on a five scale assessment category, the material aspects of the media e-Learning Android-based are categorized as "Very Eligible."

Based on the results of the development test above shows that the average value of material aspects is 4.78 (Very feasible), the media aspect is 4.22 (Very feasible), and the language aspect is 4.23 (Very feasible). There are no criticisms or suggestions given by students towards learning media based on Android so that the media learning Android-based deserves to be tested on validation test students.

Table 1. Aiken`s V Learning Media Video Tutorial Gastronomy Course by Expert Material

No.	Criteria	Scores	
		Expert Validation Material	Practitioner Validation (Teacher)
1.	Suitability of material with objectives	5	5
2.	Depth of material	4	4
3.	Systematic, coherent, logic flow clear	4.5	5
4.	Clarity of question formulation	5	4
5.	Completeness of questions	5	5
6.	The truth of the concept of questions	5	4
7.	Consistency of evaluation with learning objectives	5	5
8.	Communicative language	5	5
9.	Accuracy in using the terms	5	5
10.	Provision of learning motivation	5	5
Average score		**4.85**	**4.7**
Average score material aspects		**4.78**	

Table 2. Aiken V Android Based Video Learning Media by Media Expert Learning

No.	Criteria of	Scores	
		Validation Expert Media	Practitioner Validation (Teacher)
1.	Effective and efficient use of resources	4	4
2.	Media reliability	4	4.6
3.	Media compatibility	4	4
4.	Use of media	4.3	4
5.	Communicative	5	3.5
6.	Creative	4.5	5
7.	Visual	4	4.5
8.	Animation	4	5
9.	Navigation icons	3.5	4
Average score		**4.14**	**4.29**
Average media aspect score		**4.22**	

Table 3. Results of Language Aspect Assessment

No.	Criteria	Score	
		Validation Language	Validation Practitioner(Master)
1.	Simplicity language	4.3	4

2.	Compliance language with students' cognitive level	4.5	**4.5**
3.	The use of language communicative	5	**4**
4.	Accuracy terms financial within	4	**4**
5.	Compliance with the EYD language	4	**4**
average score		4.36	**4.1**
the average score of the language		**4.23**	

Table 4. Development Test Results

No.	Aspect of	Average Value	Criteria
1.	Material	4.78	**Very feasible**
2.	Media	4.22	**Very feasible**
3.	**Language**	**4.23**	**Very feasible**

Table 5.Test Results Practicality

No.	Criteria	Scores	
		Validation Teacher	Validation Student
1.	Android-based learning media easy to use	4,5	**4.2**
2.	Accessing android-based learning media is easier to do	4.3	**5**
3.	The use of android-based learning media raises student motivation	4,7	**4, 6**
4.	Learning using Android-based learning media makes students quick to understand the material	4,5	**4.6**
5.	Android-based learning media can be used quickly	4.7	**4.5**
6.	The composition of colors, writing, and background that is used is interesting	4.8	**4.1**
7 .	The use of android-based learning media can save students time in understanding material	4.7	**4.6**
8.	The use of android-based learning media can make the learning process more interesting	4.9	**4.5**
9.	Android-based learning media are designed following learning materials	4.3	**4.2**
10.	Android-based learning media can be used independently by students	4.8	**4.6**
Average score		4.62	**4.49**
Average Test score practicality		**4, 55**	

Table 6. Effectiveness Test Results

No.	Criteria	Score Validation Student
1.	I love learning to use android based learning media	4.5
2.	Learning to use interactive multimedia makes me more motivated in learning	4.3
3.	Exciting display on this android-based learning media	4.7
4.	Learning media-based This android is creative in explaining the learning of creativity and entrepreneurship products	4.5
5.	I can use Android-based learning media properly because it has a clear usage flow	4.7
6.	I can learn independently using this Android-based learning media	4,8
7.	media This Android-based learning is easy to use	4.7
8.	The language used is simple and clear, so it is easy to understand	4.9
9.	This Android-based learning media makes the learning process more varied	4.3
10.	I do not feel bored when using android-based learning media in learning	4, 8
Average score of		**4.62**

Based on the results of the test, practicality above shows that the average value of the aspect is practicality 4.55 (Very feasible). When converted into qualitative data based on a five-scale rating category, the media aspect of the media *E-learning* Android-based is categorized as "Very Eligible."

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Based on the results of the test, practicality above shows that the average value of aspects is practical 4.62 (Very feasible) If converted into qualitative data based on a five-scale assessment category, the aspect of media in the media *-e-Learning* Android Based Is categorized as "Very Eligible."

4. CONCLUSIONS

Based on the results of research and discussion, the following conclusions can be drawn:

Android-based Learning Media Products developed for students of the SMK Vocational High School expertise program are eligible and suitable for use based on the validation of the material experts covering the appropriateness of contents with Aiken's V value of 4.78 on Valid criteria, the feasibility of the media with Aiken's V% value of 4.22 on the Valid criteria, the language aspect with the value of Aiken's V of 4.23 on the Valid criteria and very feasible The

The practicality of using android-based learning media on students viewed from teacher testing gets a practical value of 4.62%. And students 4.49. It means that it is efficient to use

An Android-based Learning Media in terms of the effectiveness assessed by students in the Creative Products and Entrepreneurship subjects in the SMK Culinary Skills

Program has criterion effectiveness with a percentage of 4.62% means it is adequate to use.

5. ACKNOWLEDGMENTS

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