

Development of Economic Materials Based on Android Applications on Koperasi Lesson Section For Senior High School Year of Learning 2017-2018

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Abstract

This research has a purpose for developing the material of study economic based android application on main discussion is cooperation for the students of class one of social program of senior high school and to know the advisability of the material of study economic based on the assessment of material specialist, media specialist, and the point of view of the students. The material of study that is developed is experimented to ten students of class one of social program of SMA NW Tebaban. The outcome of the research show that the step advisability of the material of study economic base android application as material of study based on assessment of (1) material specialist was resulted the total score was 94.00 that included in category “excellence” and if it is percentaged get the score 85,45 % so, included category “very advisability”, and (2) media specialist was resulted the total score was 48.00 that included in category “excellence” and if it is percentaged get the score 87,27 %, so included in category “very advisability”. The students respon to this material of study in time was done try out the average shows positive respon with get the percentage ≥ 70 % every its indicator. Such was the case the material of economic based android application is advisability used as a material of study economic base android application on main cooperation material.

Key words: *economic material, android and ADDIE*

A. Introduction

The advanced nation is the goal and the ideals of every country in the world. One of the factors that support the progress of a nation is education. Once the importance of education to serve as a benchmark progress of a nation. Education is a complex process and in line with human development. Through education various life aspects are developed with learning and learning process. To complement learning and learning components in schools, teachers should use media or tools that can stimulate effective and efficient learning.

SMA NW Tebaban is one of the middle schools that is pioneering to become a more advanced school. Based on observations and interviews before the research conducted, economic learning activities in SMA NW Tebaban, not using the media already available in school. The learning process, especially the economy has not implemented android based application learning. The process is more a transfer of knowledge from teachers to students. Student involvement in economic learning is limited to listening, recording, practice questions and occasionally discussing. Concepts or materials are presented with lecture methods.

Other observations made in class x especially on economic subjects, when the learning process of students less enthusiastic and tend to be bored. The learning process is less giving students the spirit of learning. The average score of students is still below the Minimum Exhaustiveness Keriteria (KKM) that is equal to seventy. Viewed from interviews and observations this happens because; 1) lack of motivation of students to learn to follow the learning process in the classroom; 2) lack of attention or concentration of students on what is delivered by the teacher; 3) the delivery of the material by the teacher is less clear so that the students less capture the learning materials; 4) the role of teachers as facilitators and moderators for the learning of the learning situation that has been conducive to students has not been implemented optimally; 5) most of the teaching teachers still use lecture and write-in writing methods that do not engage students actively; and 6) blum of instructional materials based on android applications for economic subjects.

Based on the description tesebut, educational media that researchers develop in the form of teaching materials android-based applications as an improvement student self-reliance learning. The benefits of instructional materials android-based applications are expected to motivate students to learn independently, creatively, effectively, and efficiently, can reduce the stastic atmosphere and menciftakan interesting and fun learning process. Because during this process of learning done by the teacher is the method of face to face (lecture) that causes students to become bored and bored so that students' motivation decreased. Other uses of various learning aids will menciftakan variations belajar, for the authors to conduct research in the field of development of instructional materials based on android applications. From the above problems then the researcher intends to examine: "Development of Android-Based Economy Based on Application Student Subjects Cooperative In SMA NW Tebaban"

Research purposes

Based on the formulation of the above problems, this study aims to:

- 1) Developing instructional materials based on android application to help the learning process of high school economy class X which is made based on research development method (Reserch and Development).
- 2) Knowing the feasibility of economic resources using android applications created to help the process of learning economy class X high school.
- 3) Knowing the opinions of students with the existence of instruction-based economic resources android applications that are made to help the process of learning economy class X high school.

Library Review

Theoretical Review

Teaching materials are information, tools and texts needed by teachers / instructors for planning and reviewing the learning implementation. Teaching materials are all forms of materials used to assist teachers / instructors in carrying out teaching and learning activities in the classroom. The material in question can be either written materials or unwritten materials. (National Center for Vocational Education Research / National Center for Competency Based Training).

Research Celebration

Based on the problems and frameworks that have been described previously and supported by the relevant empirical literature and study, this research question is:

- 1) How to develop economic teaching materials on the subject of Android-based cooperative application for X-class students in SMA NW Tebaban?
- 2) How does the validator's assessment of Android-based economic learning materials for X-class students in SMA NW Tebaban?
- 3) What is the opinion or response of students about the economic teaching materials on the subject of Android-based cooperative application for the students of class X in SMA NW Tebaban?

B. Research Methodology

Development of economic resources based on this android application using research and development methods (research and development). This development procedure adapts the development model of ADDIE, a development model consisting of five stages consisting of Analysis, Design, Development, Implementation and Evaluating. But in this study only until the implementation stage only.

C. Results and Discussion

Development Results

Development of Android Based Application Economic Resources

Development of Android-based economic learning materials follow the development model of ADDIE with the stages of Analysis (Analysis), Design (Design), Development (Development), Implementation (Implementation) and Evaluating (Evaluation), but in this study only until the implementation stage only. The overall implementation of this research development procedure in detail can be seen in the following description.

a. Stage Analysis

This research started from the observation to the school that is SMA NW Tebaban. Based on observations that have been done, most students experience saturation in learning because there are still many teachers who use conventional teaching methods of lectures and less use of learning media. The researchers observed that the use of smartphones can take students' time, for example, to play music, play games, and access various social media.

b. Design Phase

The design stage is a media design stage that includes making whole media design (storyboards), compiling material, questions and answers, creating backgrounds, drawings, and buttons to be included in the application.

c. Development Stage

Teaching materials are made using hardware with 320GB hard disk specifications, 4 GB RAM, and Windows 7 operating system. All components that have been prepared at the design stage and then assembled into a single unit using AppsGeysler software. Components assembled into a single media entity in accordance with the storyboard that has been made before.

The initial media then goes through the validation stage. At this stage the material is validated by 1 material expert namely lecturer of Economics Education Faculty of Teacher Training and Education of Hamzanwadi University, Mrs. Rohaeniah Zain, SE, M.Pd and 1 media expert who is lecturer of Infomatics Education Faculty of Teacher Training and Education Universitas Hamzanwadi, Rasyid Hardi W, ST. M.Pd. Inputs and suggestions from materials experts and media experts will serve as the basis for the revision of teaching materials so that the materials developed to be better.

Based on suggestions or opinions from material experts and media experts, revisions are made to make teaching materials better.

(1) Revision of material experts

On the material page no images are presented relating to cooperative material and material submitted in the media is still not complete.

The terms used are still not appropriate and not in accordance with the field of economics so that the ease of understanding the flow of material does not support. The use of language in the media is incomplete so that the students' convenience to understand the material flow is very difficult.

(2) Revised media expert

The suitability of the display color selection is too bright when viewed by the students, therefore the color needs to be replaced by the preferred ones by the students so that the colors are presented well. The size of the image used is too large, if it is opening the image app is invisible and the appeal of the displayed image is still lacking.

d. Implementation Phase

Implementation stage is done by disseminating instructional media to 10 students of class X IPS SMANW Tebaban which is located at Highway tebaban. Before the media is used, students are required to install such media on smartphone devices. The spread of media is done through Shareit by researchers by sending the .apk file to each student. After the end of the lesson students are asked for a response or opinion by filling out a questionnaire that has been given.

Feasibility of Android-Based Economy Based Economy Material

a) Master of Materials

The validation made by the material expert is to collect suggestions and opinions from the material expert to make a revision. Assessment of learning materials by the material experts can be seen in the following table.

Table 1
 Results of Feasibility Check by Material Experts

No	Indicator	Value	Criteria
1	Material compliance with KI and KD	5.00	Very Good
2	Clarity of formulation of learning goals	5.00	Very Good
3	Material conformity with Indicator	5.00	Very Good
4	Material suitability with learning objectives	5.00	Very Good
5	The truth of the concept of matter in terms of the scientific aspect of	4.00	Good
6	Clarity of Submission of	5.00	Very Good
7	Systematic material delivery	5.00	Very Good
8	Attracted material delivery	4.00	Good
9	Material completeness	4.00	Good
10	Actuality of material	4.00	Good
11	Suitability of difficulty level and concept abstraction with student cognitive development	4.00	Good
12	Clarity of example given	4.00	Good

13	The appropriateness of the evaluation with the lesson material and learning objectives	3.00	Less Good
14	The key truths to answers	4.00	Good
15	Clarity of work instructions	5.00	Very Good
16	Clarity of Formulation of Question	4.00	Good
17	The truth of the concept about	4.00	Good
18	Variations about	4.00	Good
19	Degree of difficulty about	4.00	Good
20	Clarity of answer	4.00	Good
21	Terms of use of the term	5.00	Very Good
22	Ease of understanding the material flow through the use of language	3.00	Less Good
Total Value		94.00	Very Good
Avg. Value		4.27	Very Eligible
Percentage		85,45%	

Source: Primary Data is processed

Based on the assessment by the material experts as a whole, teaching materials get a total value of 94.00 on 22 indicators so that the category is very good. When calculated by percentage, teaching materials get the value 85.45% so included in the category is very feasible for use as teaching materials.

b) Media Expert

Validation done by media experts is to collect suggestions and opinions from media experts to make revisions to improve teaching materials for the better. Assessment by media experts can be seen in the following table.

Table 2
Feasibility Feasibility Result by Media Experts

No	Indicator	Value	Criteria
1	Provision of use of the term	4.00	Good
2	Language conformity with students' thinking level	4.00	Good
3	Ease of use language	4.00	Good
4	Creativity and innovation in learning media	4.00	Good

5	The suitability of selecting the color selection is	4.00	Good
6	Suitability of type selection	4.00	Good
7	Compatibility of the displayed image	4.00	Good
8	Ease of touch and navigation functions	5.00	Very Good
9	Ease of operation of the media	5.00	Very Good
10	Reusability (reusable)	5.00	Very Good
11	Maintable (daoat maintained / managed easily	5.00	Very Good
Value		48.00	Very Good
Average		4.36	Very Eligible
Percentage		87.27%	

Source: Primary Data is processed

Based on the assessment by the media expert as a whole, teaching materials get a total score of 48.00 on 11 indicators so that the category is very good. When calculated by percentage, learning materials get the value 87.27%, so included in the category is very feasible to be used as an economic resource based on android applications.

c) Student

The assessment of teaching materials was also conducted by 10 students in SMA NW Tebabab by using questionnaires. Questionnaires for students use Ghuttman scale with two alternative answers. Questions in the questionnaire consist of 6 questions that are combination. The complete questionnaire answer can be seen in the appendix. Here is a recapitulation of answers from 10 students of class X IPS SMA NW Tebaban.

Table 3
Recapitulation of Student's Opinion on Teaching Materials

No	Indicator	Answer		Total	Percentage Answer Yes
		Yes	No		
1	Interesting material delivery	10	0	10	100%
2	Clarity of example given problem	10	0	10	100%

3	Clarity formulation about	9	1	10	90.00%
4	Ability to encourage student curiosity	10	10	10	100%
5	The ability of teaching materials to improve students' understanding	10	0	10	100%
6	The ability of teaching materials to increase student learning motivation	9	1	10	90%

From the table above it can be seen that all questions get "Positive Response" with percentage $\geq 70\%$.

D. Discussion

Android Application Model as Economic Instructional Material on Cooperative Cooperative Subject

The android application model as an appropriate economic resource should contain the elements of competence, material and evaluation model. As well as elements of media that include the rules of learning media and CAI media rules covering the elements of software and usability. The material presentation model was developed based on the syllabus held by SMA NW Tebaban. The materials for class X IPS are limited to basic competencies describing cooperative concepts, cooperative management, applying cooperative concepts, and managing school cooperatives. This limitation is made during the introduction of the problem in the software requirements analysis stage.

Preparation

This app is designed so that students easy to open it via android smartphone. Before starting the application learning is sent to students using shareid help or via instant messaging such as whatsapp and blackberry messenger. To overcome the limitation of the number of smartphone students are gathered into several groups so they can discuss.

Presentation of Material

The main subjects presented in the instructional materials of this android-based economy are grouped into (1) cooperative concepts, (2) cooperative management, and (3) school cooperatives. And students can also discuss outside the classroom by utilizing their smartphone.

Android Application Fungicanitas As Economic Instructor Subjects Cooperative

Navigation

Navigate on this app using buttons and gesture swipe. The buttons are placed in the application layout section and the application action bar section. While the use of swipe placed on the layout. Testing is done by running the application and trying the navigation functions. This is in accordance with Pressman's testing method (2010: 457).

Operational

Application of economic aar on the subject of cooperatives can operate on various android devices. Operational apps use the android API level 8 operating system (Android 2.2 Froyo) to API level 19 (Android 4.4 KitKat). This app can only be operated using devices with screen sizes of 3.7 inches to 5 inches. When using a size outside of the size there is a possibility that the arrangement of the widget is not fit and difficult to access. Operational applications are like the results of research conducted by Pamuji (2013) and Purbasari (2013).

Feasibility of Android Based Application Economy Based on Cooperative Subject

Performance

Performance tests are performed using a variety of different smartphone devices. Performance is intended to determine the performance of applications on various android devices. In a study conducted by Purabasari (2013) only use a smartphone when android devices have fragmentation is very diverse ranging from screen size, operating system to additional sensor specifications.

a) Feasibility

The feasibility of application of economic teaching materials on the subject of cooperatives is judged by material experts and media experts. The appraisal of the appropriateness of the materials application by the material expert is assessed based on 3 aspects of material relevance, material organizing, and language.

The total score of ratings by the material expert is 94.00 (the "excellent" category). Then the score is calculated in the form of percentage of teaching materials to get value 85.45% so it can be said that the feasibility of application of economic resources on the subject of the cooperative based on the assessment by the material experts included in the category of "very decent" is used as teaching materials.

The appraisal of the appropriateness of the application of economic teaching materials on the subject of cooperatives by media experts is assessed based on 3 aspects: language, appearance, application usage.

The total score of ratings by media experts is 48.00 ("very good" category). Then the score is calculated in the form of the percentage of teaching materials get the value

87.27% so it can be said that the feasibility of application of economic resources on the subject of cooperatives based on assessment by media experts included in the category of "very decent" is used as teaching materials.

The assessment of teaching materials was also conducted by 10 students in SMA NW Tebabab by using questionnaires. Questionnaires for students use Ghuttman scale with two alternative answers. Questions in the questionnaire consist of 6 questions that are combination. It is known that all questions get "Positive Response" with percentage $\geq 70\%$.

E. Conclusion

Based on data analysis and discussion in chapter IV, it can be concluded.

- a. The development of Android-based economic instructional materials on the subject of cooperatives using the ADDIE development model are Analysis, Design, Development, Implementation, and Evaluation. This study is limited to Implementation only.
- b. The feasibility of the Android-based economic apparatus based on the subject of the cooperative based on the expert material judgment of the whole aspect earns a total value of 94.00, so that it falls into the category of assessment very well and if the lesson of instructional materials get 85.45%, this indicates that the teaching materials of the overall aspect based on (%) are in the category very feasible to be used as an economic resource based on Android applications.
- c. The feasibility of instructional materials based on the Android app on the subject of cooperatives based on the expert assessment of the media overall aspects get a total value of 48.00 so that the entry in the category of assessment is very good and if the materials dikententikan get 87.27%, this indicates that the teaching materials from the aspect Overall based on (%) are in the category very feasible to be used as an economic resource based on Android applications.
- d. Trials were conducted at SMA NW Tebaban by 10 students and showed a positive response as all showed a percentage of $\geq 70\%$. Based on the data, it can be concluded that the apical Android-based economic teaching materials are packed with interesting, examples of questions and questions delivered clearly, encouraging students' curiosity in studying economics, increasing understanding of economic learning, and increasing motivation in learning economy.

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