



The Development of Android-Based Map Media on Indonesian Ethnic and Cultural Diversity

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Abstract

Social studies learning in the revolutionary era 4.0 should use digital maps to visualize the conditions of the earth's surface so that students interpret social studies subject matter more clearly. This study aims to develop a map media product based on the android application "ethnic and cultural diversity". This type of research is research and development using the Borg and Gall model. The stages are (1) research and information gathering, (2) planning, (3) initial product development, and (4) preliminary testing. Collecting data in this study using a validation questionnaire of the feasibility of map media products based on android applications. Data analysis in this research is the feasibility analysis of map media products based on android applications. The result of this research is the development of map media based on android application material on ethnic and cultural diversity that is suitable for use in social studies subjects has been validated by experts and declared "feasible" to be used. The author suggests teachers use android-based map media development products for ethnic and cultural diversity in social studies subject for class VII SMP / MTs in order to answer the challenges of technology-based 21st century learning in the current era of industrial revolution 4.0.

Keywords: *Instructional Media; Maps; Android; Cultural Ethnic Diversity*

Introduction

The development of Science and Technology (IPTEK) has now reached the stage of the 4.0 industrial revolution which was marked by the emergence of sophisticated cutting-edge technology. The development of science and technology in the era of the industrial revolution 4.0 also raises various problems and challenges. For that, it must be accompanied by an increase in the quality of Human Resources (HR) through national development in the field of education. Improving the quality of human resources through national development in the field of education is carried out by creating active 21st-century learning that is student-centered and technology-based. 21st-century learning in the era of the industrial revolution 4.0 requires students to be active in a technology-based learning process where students are looking for as much subject matter as possible via the internet to learn. Of course, this is not a difficult thing considering that students are currently classified as the digital native generation. According to Hasugian in Mardina (2017), the digital native generation is a technology-literate generation from birth,

because it is born where technology is already in the environment so that life cannot be separated from computers, smartphones, the internet, and others. To accommodate the needs of the digital native generation, teachers must prepare technology-based learning media. This is intended so that students' optimal absorption of the subject matter given, learning does not become monotonous and does not cause boredom in students so that it can attract student interest in learning and can improve learning outcomes.

Based on the results of observations carried out at one of SMPN 1 Tanjungsari, the media used in social studies learning at SMPN 1 Tanjungsari is still conventional, one of which is the use of map props. According to Bednarz & Bednarz (2006: 399), only a few social studies teachers are aware of the importance of maps, preparing and teaching with maps. According to Miswar (2012: 21) maps have a function to record or systematically describe the location of the earth's surface data, both physical data and cultural data that have previously been determined. So far, the social studies teacher at SMPN 1 Tanjungsari still uses general map media and has not fully developed thematic map media (specifically) according to the subject matter and the basic social studies competency (KD). The thematic map should be used in the material on ethnic and cultural diversity in social studies learning so that students can more easily understand the ethnic and cultural diversity that exists in each region in Indonesia.

Along with the development of science and technology, maps are not only flat (ordinary) but are digital, both two-dimensional and three-dimensional. The social studies teacher at SMPN 1 Tanjungsari has not fully developed the digital map media and is still using flat map media (regular) in the social studies learning process. The social studies teacher at SMPN 1 Tanjungsari during his preliminary research stated that "Flat maps (ordinary), atlases and globes are usually used in social studies subjects. The map is pasted on the blackboard. So that students easily understand the material. Usually, the map is used when the material on the location of the countries that are members of ASEAN, the material on the location of Indonesia is continued with the regional culture in Indonesia".

In addition to using conventional map media, social studies teachers can use android smartphones in social studies learning. Moreover, almost all students have an Android smartphone. For this reason, it is necessary to develop an Android-based IPS learning support application in order to accommodate the needs of students in the era of industrial revolution 4.0. Social studies learning in the era of the industrial revolution 4.0 should also use digital thematic maps in the form of two dimensions or three dimensions that contain information about conditions on the earth's surface in accordance with social studies subject matter. Therefore, researchers are trying to accommodate these needs by developing learning media in the form of android-based map media with material on ethnic and cultural diversity that can be used on Android smartphones. The media developed in this study not only displays digital thematic maps of ethnic and cultural diversity but is equipped with a material summary and an evaluation of social studies learning outcomes in the form of a Computer Based Test (CBT).

Research Methods

This study uses a research and development approach (Research and Development). According to Borg & Gall (2003: 772) development research is research-oriented to develop and validate products used in education. This study develops products in the field of education in the form of android-based map media on ethnic and cultural diversity in junior high school social studies subjects and validates these media products by several experts. The research and development procedure (Research and Development) according to Borg and Gall (2003: 570) has ten stages as follows: 1) research and information collecting, 2) planning, 3) develop a preliminary form of product, 4) preliminary field and testing, 5) operational product revision, 6) main field testing, 7) operational product revision, 8) operational field testing, 9) final product revision and 10) dissemination and implementation.

The research and development procedure can be simplified in several stages. Borg and Gall (2003: 572) argue that the stages of R and D can be simplified into 3 or 4 stages. Therefore, the

implementation of this research only reached the fourth stage, namely the preliminary trial. The reason for simplification to the fourth stage is because this research is limited to testing small-scale product prototypes that are used only in the place where this research was conducted, time constraints. After all, it requires a relatively long process and limited costs so that the simplification of this research stage can be completed at a relatively affordable cost. The four stages of research and development of android-based map media can be seen in Figure 1 as follows:

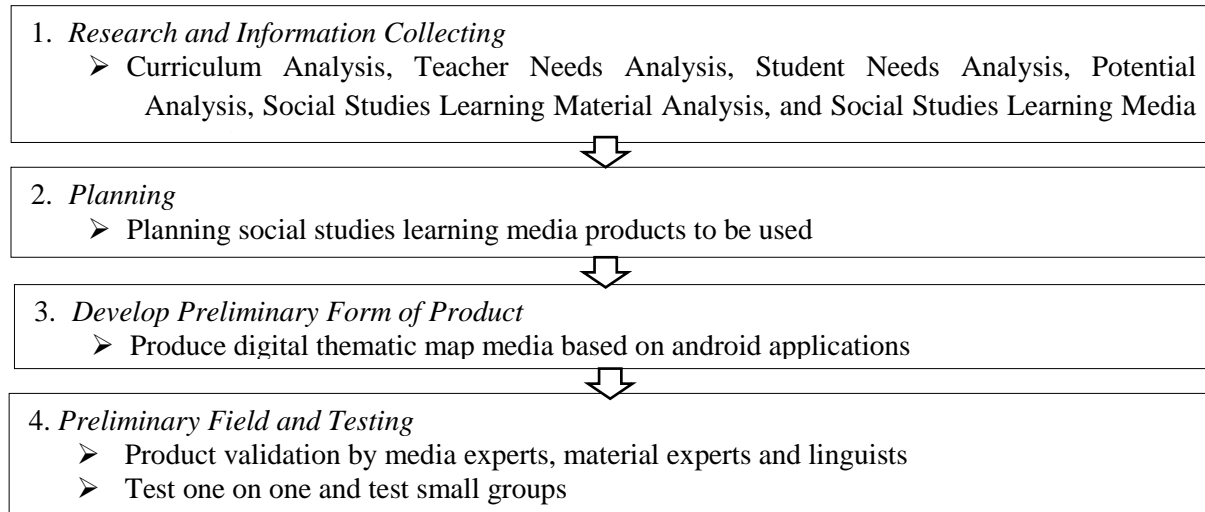


Figure 1. Stages of developing android-based map media adapted from Borg and Gall (2003: 570)

The data collection technique used in this study was a questionnaire. The questionnaire in this study was used to obtain product validation data by experts (media experts, material experts, and linguists) and the opinions/responses of students regarding the android-based map media product that had been developed. Data analysis in this study includes analysis of product feasibility and analysis of student opinion data.

Results and Discussion

The researcher succeeded in developing a map media product based on an android application after going through four stages starting from stage one research and information gathering to analyze the needs of social studies learning media; stage two planning to plan the media according to the social studies learning needs; the third stage of initial product development to develop social studies learning media; and the fourth stage of the preliminary trial consisting of validation of the product's feasibility by experts (media experts, material experts, linguists), one-on-one testing and small group tests to determine the students' responses to the use of the media. The four stages have been carried out so that the android application-based map media can be realized and ready to be used in social studies learning. The four stages of research and development of android-based map media are as follows:

1. Research and Information Collecting

Research and information collecting is the first stage to determine the needs of teachers and students to maximize the social studies learning process. In the first stage, the researcher conducted a needs analysis as follows:

a. Curriculum Analysis

SMPN 1 Tanjungsari uses the 2013 curriculum. The 2013 curriculum aims to prepare productive, creative, innovative, and effective Indonesians through strengthening attitudes, knowledge, and skills. The implementation of the 2013 curriculum can be done by conducting technology-based learning, using learning media, discussions, and so on.

b. Teacher Needs Analysis

Teachers in the revolutionary era 4.0 should carry out technology-based learning. Teachers can use interactive digital-based learning media to facilitate communication between teachers and students and simplify the social studies learning process from material delivery, implementation to an assessment of learning outcomes. Teachers at SMPN Tanjungsari need a digital map that is flexible to use in social studies learning because so far they still use conventional maps. Social studies teachers can also streamline their time/energy if they use android-based map media so that the social studies learning objectives can be achieved properly. The use of android-based map media is also carried out to improve the quality of teachers so that they are technology literate so they are not out of date in the current 4.0 revolution era.

c. Student Needs Analysis

The 2013 curriculum also wants active students starting from independent learning, group discussions, and presentations so that students do not passively accept explanations from the teacher. Learning centered on students (student center) and the teacher only acts as a mediator/hosting/answering questions. Besides, the conditions in the field were found by students who did not understand social studies learning materials, students who were less interested in social studies learning, and so on.

d. Potential Analysis

The development of science and technology spurs the world of education to be more advanced. Researchers see several potentials that can be developed in the world of education according to the learning needs in schools. The potential includes social studies teaching materials/media that can be developed according to the needs and development of science and technology, the availability of facilities in schools such as computer laboratories; the availability of infrastructure in schools such as computers, LCD projectors/smartboards, internet, and most students have Android smartphones that can be used to optimize the social studies learning process.

e. Analysis of Social Studies Learning Materials

Ethnic and cultural diversity material consists of ethnicity, language, traditional houses, traditional clothing, regional dances, traditional weapons in Indonesia and, others. The material of ethnic and cultural diversity will be easily studied by students if it is equipped with pictures, maps, videos and, others. To make it easier for students to learn ethnic and cultural diversity, social studies learning media in the form of android-based map media are needed.

f. Analysis of Social Studies Learning Media

Social studies teachers rarely use learning media making social studies learning monotonous and causing boredom in students in learning. The rare use of social studies learning media also results in not optimal absorption of students of the subject matter given. The use of instructional media should also be adapted to social studies subject matter. One of the media frequently used by social studies teachers is a

map. The map provides an overview of space and makes it easier for students to understand the location of an area. However, the maps that are often used by teachers still use general maps that are flat (ordinary) and have not yet fully developed digital thematic map media according to the subject matter. Therefore, it is necessary to develop an android-based map media to accommodate these needs.

2. Planning

Planning activities are the second stage for carrying out a series of social studies learning planning starting from planning the instructional media products to be used, making learning implementation plans, determining learning objectives, determining learning indicators for each competency, determining learning strategies and, determining the social studies learning sequence to be implemented.

3. Develop Preliminary form of Product

Initial product development (develop a preliminary form of product) is the third stage to produce digital thematic map media based on android applications as social studies learning media. Making map media based on android includes coding activities and testing errors in the code. The android-based map media is operated using an android smartphone with the help of an internet connection.

The map media based on the android application contains social studies learning materials about Indonesia's ethnic and cultural diversity for grade VII students of SMPN 1 Tanjungsari, South Lampung. The media structure displays a thematic map consisting of a map of the distribution of ethnic groups in Indonesia; a language distribution map by the province in Indonesia; a distribution map of traditional houses, traditional clothes, regional dances, and traditional weapons.

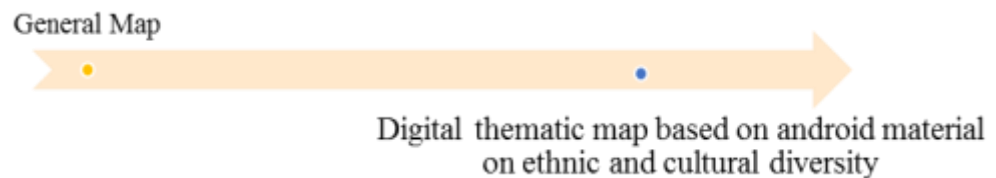


Figure 2. Development of map media based on android application material on ethnic and cultural diversity in social studies subjects to improve learning outcomes by paying attention to the learning interests of class VII students of SMPN 1 Tanjungsari, South Lampung

Android application-based map media development products can be downloaded on the Play Store with the keyword "Keragaman Etnik dan Budaya (KEBUD)" and can be used as an alternative media to optimize social studies learning. Following are the final results of the learning media "Keragaman Etnik dan Budaya", namely:

a. Initial Views

The initial display appears when the user opens the "Keragaman Etnik dan Budaya (KEBUD)" application. The initial view of the application is as follows:



Figure 2. Initial view

Source: Researcher Documentation of 2019

b. Account Types Menu

After the initial display of the “Keragaman Etnik dan Budaya (KEBUD)” application, the account type menu appears. The account type menu functions to select the account to be used, namely the teacher account or student account.



Figure 3. Display of account types

Source: Researcher Documentation of 2019

c. Account List Menu

The account list menu functions to register an account by filling in an identity consisting of a username, password, and name. If the user does not register an account, they cannot open the application. The account list menu display can be seen as follows:



Figure 4. Account list menu

Source: Researcher Documentation of 2019

4. Preliminary Field and Testing

The preliminary trial consists of product validation by media experts, material experts, linguists, one-on-one, and small group tests as follows:

a. Product Validation by Media Experts

Product validation by media experts aims to validate the feasibility of map media products based on android applications. The product validation questionnaire instrument by media experts consists of 21 statement items which are divided into two aspects of assessment, namely the software engineering aspect (13 statement items), and the visual display aspect (8 statement items). The results of the product feasibility assessment by media experts can be seen in the following table.

Table 1. Results of product feasibility assessment by media experts

Assessment Aspects	Indicator	Total Score	Number of Questions	Average Score	Category
Software engineering	a. Effective and efficient use of resources	8	2	4,0	Decent
	b. Reliability of the media	8	2	4,0	Decent
	c. Media compatibility	12	3	4,0	Decent
	d. Complete documentation	10	2	5,0	Decent
	e. media use	12	3	4,0	Decent
	f. Communicative	4	1	4,0	Decent
	Total		54	13	4,2
Visual Appearance	a. Creative	4	1	4,0	Decent
	b. Visual	8	2	4,0	Decent
	c. Animations	14	3	4,7	Decent
	d. Button	8	2	4,0	Decent
	Total		34	8	4,3
Total		88	21	4,2	Decent

Source: Research data processed in 2019

Based on Table 1, the results of the product feasibility assessment by media experts on the software engineering aspect get an average score of 4.2 in the "decent" category and the visual appearance aspect gets an average score of 4.3 in the "decent" category. The total product feasibility assessment by media experts gets an average score of 4.2 in the "decent" category, meaning that the Android-based map product is worth trying out.

b. Product Validation by Learning Material Experts

Product validation by learning material experts aims to validate the feasibility of the teaching material developed on the map media product based on the Android application. The product validation questionnaire instrument by learning material experts consists of 19 statement items which are divided into four aspects of assessment, namely the material aspect (8 statement items), the question aspect (6 statement items), the language aspect (2 statement items), and the implementation aspect (3 statement items). The results of the product feasibility assessment by learning material experts can be seen in the following table.

Table 2. Results of product feasibility assessment by material experts

Assessment Aspects	Indicator	Total Score	Number of Questions	Average Score	Category
Subject matter	a. Suitability of subject matter with objectives	15	3	5,0	Decent
	b. Depth of subject matter	5	1	5,0	Decent
	c. Systematic, coherent, logical flow	19	4	4,8	Decent
	Total	39	8	4,9	Decent
Question	a. Clarity of question formulation	5	1	5,0	Decent
	b. Completeness of the questions	5	1	5,0	Decent
	c. Correctness of the concept of matter	10	2	5,0	Decent
	d. Providing feedback on evaluation results	4	1	4,0	Decent
	e. Consistency of evaluation with learning objectives	4	1	4,0	Decent
	Total	28	6	4,6	Decent
Language	a. Communicative language	4	1	4,0	Decent
	b. The accuracy of using terms	4	1	4,0	Decent
	Total	8	2	4,0	Decent
Implementation of Learning	a. Provide learning motivation	8	2	4,0	Decent
	b. Student Activity	4	1	4,0	Decent
	Total	12	3	4,0	Decent
Total		87	19	4,4	Decent

Source: Research data processed in 2019

Based on Table 2, the results of the product feasibility assessment by material experts on the material aspect get an average score of 4.9 in the "Decent" category, the question aspect gets an average score of 4.6 in the "Decent" category, the linguistic aspect gets an average score an average of 4.0 with the category "Decent" and aspects of implementation get an average score of 4.0 in the category "Decent". The total product rating by material experts gets an average score of 4.4 in the "Decent" category, meaning that the android-based map product is feasible to be tested.

c. Product Validation by Linguists

Product validation by linguists is used to validate the feasibility of the language contained in the map media product based on the android application. The product validation questionnaire instrument by material experts consists of 10 statement items which are divided into six aspects of assessment, namely straightforward aspects (3 statement items), communicative aspects (1 item statement), dialogical and interactive aspects (1 statement item), suitability aspects of student development (1 item of a statement), aspects of conformity with language rules (2 points of a statement) and aspects of terms and symbols (2 points of the statement). The results of the product feasibility assessment by linguists can be seen in the following table.

Table 3. Results of product feasibility assessment by linguists

Assessment Aspects	Indicator	Total Score	Number of Questions	Average Score	Category
Straightforward	a. The accuracy of sentence structure	5	1	5,0	Decent
	b. The effectiveness of sentences	4	1	4,0	Decent
	c. Rigor of the term	5	1	5,0	Decent
	Total	14	3	4,7	Decent
Communicative	Understanding of messages / information	5	1	5,0	Decent
	Total	5	1	5,0	Decent
Dialogical and interactive	Ability to motivate students	5	1	5,0	Decent
	Total	5	1	5,0	Decent
The suitability of the development of students	Suitability and intellectual development of students	4	1	4,0	Decent
	Total	4	1	4,0	Decent
The suitability of the development of students	a. Grammatical accuracy	4	1	4,0	Decent
	b. Spelling accuracy	4	1	4,0	Decent
	Total	8	2	4,0	Decent
The suitability of the development of students	a. Consistent use of terms	5	1	5,0	Decent
	b. Consistent use of symbols	5	1	5,0	Decent
	Total	10	2	5,0	Decent
Total	46	10	4,6	Decent	

Source: Research data processed in 2019

Based on table 4.7, the results of the product feasibility assessment by material experts on the straightforward aspect get an average score of 4.7 in the "feasible" category, the communicative aspect gets an average score of 5.0 with the "feasible" category, dialogic and interactive aspects get a score an average of 5.0 with the "Eligible" category, the suitability aspect of the development of students got an average score of 4.0 in the "Eligible" category if it was following the rules of the language got an average score of 4.0 in the "Eligible" category and aspects of terms and symbols get an average score of 5.0 in the "Eligible" category. The total product feasibility assessment by linguists gets an average score of 4.6 in the "Eligible" category, meaning that the android-based map product is feasible to be tested.

d. One-on-One and Small Group Tests

One-on-one and small group tests are carried out after the validation of the product by the expert is complete, which is indicated by a trial recommendation. According to Dick & Carrey (2001: 286-295), the formative evaluation model consists of three forms as follows: One-To-One Evaluation, Small Group Trials, Field Trials (Field Evaluation). One-on-one and small group tests aim to find out the weaknesses or deficiencies of the Android-based map application by providing an assessment of a questionnaire specially prepared for students. Weaknesses or deficiencies in this application can later be revised to get an Android-based map application that is effective and efficient for use by students in social studies learning. The results of the one-on-one and small group tests carried out on students are:

1) One-to-One Evaluation

The one-on-one test is carried out by choosing three students randomly based on different ability levels so that one student with high ability is selected, one student with moderate ability and one student with low ability. Selected students are given instructions to download the application on the play store and use an Android-based map application individually. After using the application, students are given a questionnaire to assess the use of an Android-based map application. The following are the results of the one-on-one trials, namely:

Table 4. One-on-one test results

No	Statement	Student 1		Student 2		Student 3	
		Yes	No	Yes	No	Yes	No
1.	Never used Android-based applications before	√			√		√
2.	Application easy to use	√		√		√	
3.	Applications can run well on smartphones	√		√		√	
4.	The function of this Android-based map media button works fine	√		√		√	
5.	Media has an attractive appearance	√		√		√	
6.	The material is packaged attractively	√		√		√	
7.	The media uses language that is easy to understand	√		√		√	
8.	The problem in the media is clear	√		√		√	
9.	Media helps to see learning outcomes	√		√		√	
10.	The media encourages curiosity	√		√		√	
11.	Media makes learning easier	√		√		√	
12.	Media adds to the understanding of social studies material	√		√		√	
13.	Media increase students' interest and motivation in learning social studies	√		√		√	
14.	Media can be used for further learning	√					
Improvement Suggestions		There is no		There is no		There is no	
Smartphone Type		Oppo		Oppo		Vivo	

Source: Primary Data Student Response in 2019

Based on the one-on-one test results, the Android-based map application runs well through two smartphone brands, namely oppo and Vivo which are used by students. Students respond to the application well, it can be seen from the no suggestions for improvement delivered in this one-on-one test. The next stage was small group trials.

2) Small Group Trials

The small group test was carried out by selecting nine students who had never used an Android-based map application. Students were randomly selected based on different ability levels so that three students with high abilities were selected, three students with moderate abilities and, three students with low abilities. The small group test was carried out by students simultaneously. Furthermore, students fill out a questionnaire to find out the opinion after using an Android-based map application and find out the problems on the smartphone. The following are the results of the small group test, namely:

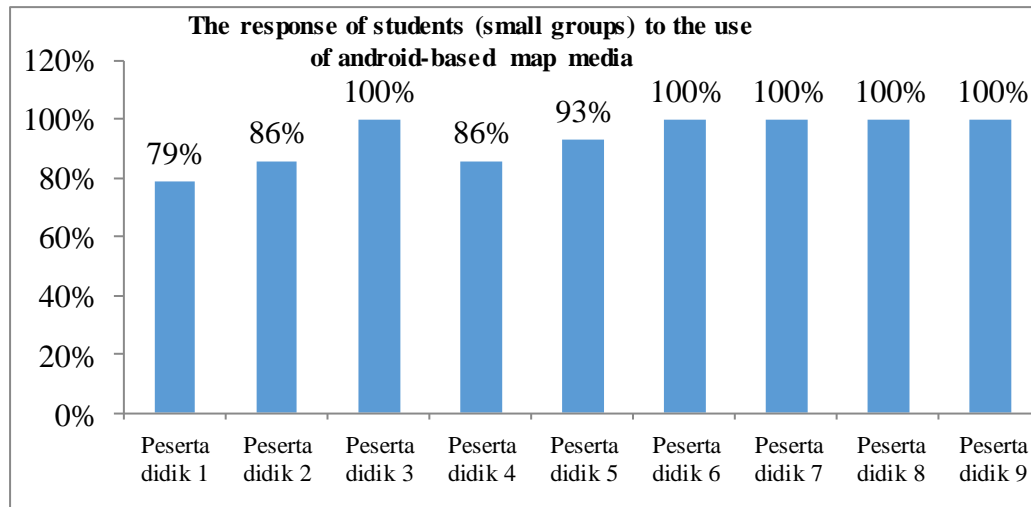


Figure 5. Student responses (small groups) to the use of android-based map media
Source: Researcher Documentation of 2019

Based on the picture above, the response of students when using android-based map media in small group trials can be said to be positive because they get a percentage of $\geq 70\%$. There were five students who responded 100% of the total percentage of 100%. However, there was one student who gave a response of 79% of the total percentage of 100%. This shows that the Android-based map media application still has shortcomings in material aspects, question aspects and, usage aspects. The results of the small group test also students gave a positive response so that the Android-based map application was considered good and could be used as social studies learning medium. According to Satar, Sudjarwo, Pujiati (2020: 15) small group tests, large group tests and, expert tests state that the product of accounting teaching materials for trading companies with visual basic applications is attractive and suitable for use as economic learning materials.

Discussion

Research on developing map media based on android application material on ethnic and cultural diversity is motivated because teachers have not fully used and developed technology-based social studies learning media such as digital map media. Tyas (2014) states that cultural learning in each province is still dominated by learning books such as atlases which sometimes make people lazy and bored to read them because they are not interesting. This problem is overcome by using the development of android-based map media in social studies learning material on ethnic and cultural diversity. According to Tyas (2014) by utilizing technological developments, encourages researchers to make an android application as a learning medium about the culture in each province that is more specific and interesting by several provinces in Indonesia. With this application of the province of Indonesia, it can help teachers and students in increasing knowledge about culture in Indonesia in particular and the general public in general.

The consideration of choosing android in this study is because 98% of class VII students at SMPN 1 Tanjungsari have an android smartphone from a total percentage of 100%. Android was also chosen because most people around the world use Android which can be seen from IDC (International Data Corporation) data (2019) in 2019 Android holds 86.6% of the smartphone market share worldwide. Defrianto, Kridalukmana, & Windasari, (2015: 379) stated that based on a research report from StatCounter, it turns out that Android is an operating system that dominates the circulation of

smartphones in the country with a market share of 59.91%. Android smartphones are also more flexible and more dynamic to use in learning. According to Sinaga, Trisnaningsih, Pujiati (2019: 1) this research expects to develop more dynamic learning media by using technology in the form of applications on smartphone devices to improve student learning outcomes.

This research develops an android-based map media development product in the form of the application "Ethnic and Cultural Diversity (KEBUD)" which contains digital thematic maps of the distribution of ethnic groups in Indonesia, digital thematic maps of language distribution in Indonesia and, digital thematic maps of cultural diversity (traditional houses, traditional clothing, regional dances and traditional weapons in Indonesia). Android-based map media " Keragaman Etnik dan Budaya (KEBUD)" displays a digital thematic map with two display options. The first display is a JPEG image that can be immediately viewed and enlarged. The second display is connected to google maps where the teacher can point to a location in a province to be given an image according to the user's wishes. This second view is intended so that teachers can provide information on an area in Indonesia or an area in a country given the very wide scope of social studies material.

The application " Keragaman Etnik dan Budaya (KEBUD)" also provides a type of multiple-choice questions in the form of a Computer Based Test (CBT) to evaluate social studies learning outcomes. After working on the multiple-choice questions, students can immediately correct the answer automatically. However, it does not present a discussion of multiple-choice questions due to the limitations of the researcher. This application also provides types of essay questions that are used in group discussions. However, the answers to essay questions cannot be corrected automatically due to the limited ability of the researcher.

Conclusion

Development of map media based on android applications uses a research and development model according to Borg and Gall with stages, namely (1) research and information collection, (2) planning, (3) preliminary product development (develop preliminary. form of product) and (4) preliminary testing (preliminary field and testing). Feasibility of android-based map media products based on product feasibility assessments by media experts get an average score of 4.2 in the "Decent" category, product feasibility assessments by material experts get an average score of 4.4 in the " Decent " category and product feasibility assessment by linguists get an average score of 4.6 in the " Decent" category, meaning that the map product based on Android is feasible to be tested. The results of one-on-one tests, small group tests and, field trials of students showed a positive response because they got a percentage of $\geq 70\%$. Android application-based map media development products can be downloaded on the Play Store with the keyword "Ethnic and Cultural Diversity" and can be used as an alternative media to optimize social studies learning.

Suggestion

Based on the conclusions and implications, the researcher can draw the following conclusions:

1. Suggestions for Teachers and Students in Social Studies Learning

The use of android-based map media makes social studies learning less time intensive and more efficient so that the objectives of social studies learning are well achieved. The development of android-based map media is expected to be an alternative social science learning media in accordance with the development of science and technology. Efforts to improve the quality of teachers and the quality of students can be done by using android-based map media and other technology-based learning media as

needed. Teachers can use android-based map media in social studies learning to attract students' interest in learning so that their learning outcomes reach the minimum completeness criteria (KKM). After using the android-based map media, interest in learning and learning outcomes of students increases so that teachers can improve the social studies learning process to achieve the desired learning objectives. Teachers can also develop android-based media and other android-based applications that can combine face-to-face / offline learning with online learning in order to optimize the social studies learning process.

2. Suggestions for the School

It is hoped that the school will provide facilities and infrastructure in order to support the learning process in schools. The use of technology-based learning media can improve the social studies learning process. For this reason, schools need to provide support and conduct training on the use of technology-based learning media to improve the quality and ability of teachers.

3. Suggestions for Similar Researchers

This research is not perfect which has limitations and shortcomings so that it requires constructive suggestions from similar researchers. It is recommended for similar researchers to develop android-based media and other android-based applications to optimize the social studies learning process.

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