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Interactive Learning Media Based On "Scientific" Assisted By Android Studio For Elementary School Students

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Abstract.
This study discusses android-based learning media, the limitations of learning media, and the learning process that still uses the lecture method resulting in a lack of student understanding of PPKn material. Knowing the effectiveness and practicality of ”scientific”-based learning media assisted by the Android studio for Civics education materials for elementary school students. The data analysis technique used were quantitative and qualitative. The results of this study based on media validation obtained a score of 94% in the appropriate category, the results of material validation obtained a score of 78% in the appropriate category, and the results of language validation were 97% in the appropriate category. The results of the practicality validation of 94% of the teacher category got 86% in the very good category, and the practicality results of the students were 98% in the very good category. And the results of the effectiveness of students getting 90% in the very effective category. From the test results it can be concluded that ”scientific”-based interactive learning media assisted by the Android studio Civics material for elementary school students can be categorized as feasible, practical and effective to use as learning media to support the success of learning objectives.

Keywords: interactive learning media , scientific, Android studio

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1. INTRODUCTION

Learning is basically a process, namely the process of organizing, organizing the environment around students as a result can grow and encourage students to do the learning process (Satriya 2018). Learning is also said to be the process of conveying guidance or donations to students in the learning process. Based on the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, learning is the process of educator interaction with students and learning resources that take place in a learning environment. Based on Zainiyati(2017) media derived from Latin is a plural form and medium term, literally meaning intermediary or introduction. So in language the media is an introduction and delivery to the recipient. The scientific

approach is the right approach to 21st century learning. According to Lestari (2020) that the scientific approach is a learning process that is made in such a way that students actively construct concepts, through the stages of observing, proposing or formulating, collecting data and harmonizing the principles found. Technology can be used to support formative feedback in a variety of ways (Spector et al. 2016).

The use of technology and learning media that can produce an active learning that students can participate in. Learning media is a link between educators and students. In line with the rapid development of technology, it has become the obligation of educators to produce new views or creative new innovations using various appropriate learning media in the learning process. Characteristics of the 21st century are commercialization skills, critical thinking skills, problem-solving skills and creative and innovative thinking skills(Redhana 2019). The teacher's task in the 21st century learning process is one of them mastering the concept of e-learning-based learning. Moreover, in 2019 covid-19 resulted in a decrease in the education system in Indonesia, with this scientific-based learning media, it should make it easier for students to study anywhere and anytime tampa tied to time (Wijaya, Sudjimat, and Nyoto 2016).

In accordance with the characteristics of 21st century learning, teachers need learning media that adapts to technological developments, namely by presenting interactive learning media based on android and using a scientific approach (Nopriyanti and Sudira 2015). Learning concepts that make students learn actively, feel happy and motivated to learn in accordance with the speed of student understanding on self-learning. Interactive learning media is a learning media that involves active students in the learning process, interactive learning media is an integrated digital media to help educators interact with students which includes electronic text, graphics, images and sounds (Lestari 2020).

Previous research there are still many inconsistencies in the results of his research, where in his research there are still shortcomings, one of which is lacking in the presentation of the material of the images presented less in accordance with the theme and there has been no evaluation in the developed media.

Based on the results of previous research, Muttaqin, Sariyasa, and Suarni (2021) which discussed the development of android-based learning media, which showed the results of his research validation scores by material experts averaged a score of 4 maximum scores of 5 with the category ”good”, then media experts obtained an average of 4 out of a maximum score of 5 with the category ”good”, the final total of linguists 4.8 good categories and the results of small group tests stated that the product averaged 4.5 out of a score of 5 ”very” well”. With these results, the media was declared worthy of use in schools, but the material score was less because it did not present less complete, in

this study still using simple images and animations that were less attractive to students, evidenced in the results of the trial. Likewise with the results of research (Hapsari and Fahmi 2021) with the development of android studio-based learning media that only focuses on Quiziz.

Based on these problems, further research is needed to perfect previous research, which is more interesting and more racing on the concept of 21st century learning that involves active students in the process of learning and can make students learn anywhere tampa there is a time limit, and research that focuses on ppkn material is a learning emphasizes the attitude of citizens. So the importance of research on the development of interactive learning media based on ”scientific” assisted by android studio PPKn material for elementary school students.

2. METHOD

This development research method (researc and development) in this study uses the ADDIE model (analysis, Design, Development, Implementation, and Evaluation). Research and development is a research method used to produce a product and test the effectiveness of the product (Sugiyono 2011).

The subjects of this study were students of the Tanjungrejo 5 Malang Elementary School lll class as many as 15 students while the research location was located at SDN Tanjungrejo 5 Malang Jl. Mergan Lori lll / 1a and the subjects of the research trial were material experts, media experts and linguists. Types of research data are Quantitative and Qualitative data.

Data collection in this study is in the form of questionnaires, namely the grid questionnaires of media experts, linguists, expert materials for teacher and student response questionnaires. As well as interviews of this media validation questionnaire grid adopted from (Rahmani 2014). Here is the table:

(Modified from Rahmini, 2014)

The data analysis used in this study is qualitative data and quantitative data, where qualitative data of improvement suggestions in the form of comments and suggestions. While quantitative data is objective and can be interpreted by everyone (Widoyoko 2013) questionnaires that use likert skla and calculate average scores and percentages to get results obtained from interactive learning media development research based on ”scientific” assisted androis studio PPKn materials for elementary school students.

Likert scale table and formulas according to Arikunto (2009) the following reasons.

Table 1: Media Expert Validation questionnaire grid.

Assessed aspects	Indicators	Number of items	Numbergrain
Presentation Organization	Ease of studying the material	1	1
	The quality of the media is durable and not easily damaged	1	2
	Clear instructions for use	1	3
	The lack of presentation of the material	1	4
	Adequacy of the description of the material in explaining the concept	1	5
	Navigation button layout suitability	1	6
	Suitability of the image with the material	1	7
	The consistency of the test question with the material	1	8
	Text compatibility with images	1	9
	Attractive media quality	1	10
	The clarity of the presented video	1	11
Graphicness	Text quality (type and size)	1	12
	Clarity of navigation buttons used	1	13
	Text and background color suitability	1	14
	Animation and image quality	1	15
	The beauty of the menu look	1	16
	Ease of media users	1	17
	Navigate interface view	1	18

Table 2: Likert scale.

Select an answer	Scale value
Very unkind	1
Bad	2
Good	3
Excellent	4

(Arinkunto, 2009)

Then to calculate the average score of eligibility using the following formula:

$$P = \frac{Number\ of\ scores\ obtained}{High\ score\ count} \times 100\%$$

Information:

P= percentage/average score

Rubric of media eligibility criteria and formula calculate media eligibility according to Arikunto (2013) as follows:

Table 3: Rubric of Media Eligibility Criteria.

Score In Percent	Eligibility Criteria
76%-100%	Decent
56%-75%	Quite decent
40%-55%	Less worthy
0-39%	Not worth it

(Arikunto, 2013)

Effectiveness analysis can be known through the results of student tests after a media trial, then calculated the average score using this must-have formula. Number of completed students

$$N = \frac{Number\ of\ scores\ obtained}{Total\ number\ of\ students} \times 100\%$$

Information :

N = Level of effectiveness

Nilai KKM >70

Rubric media eligibility criteria and formulas calculate the effectiveness of media according to Sukardiyo (2013) as follows:

Table 4: Rubric of Media Effectiveness.

Score In Percent	**Effectiveness Criteria**
<21%	Sangat tidak efektif
21-40%	Tidak efektif
41-60%	Cukup efektif
61-80%	Efektif
81-100%	Sangat efektif

(Sukardiyo, 2013)

Data to calculate practicality is obtained from student response questionnaires and expert repso questionnaires (teachers) by calculating the average score obtained from respondents.

$$P = \frac{Number\ of\ scores\ obtained}{High\ score\ count} \times 100\%$$

The rubric of media eligibility criteria and formulas calculates the practicality of media according to Arikunto (2009) as follows:

TABLE 5: Rubric of Media Practicality Criteria.

Presentase	Practicality Criteria
80%-100%	Excellent
66%-79%	Good
40%-55%	Not good enough
0-39%	failed

(Arikunto, 2009)

$$P = \frac{Number\ of\ scores\ obtained}{High\ score\ count} \times 100\%$$

3. RESULTS AND DISCUSSION

In this research focuses on developing interactive learning media based on ”Scientific” which is an IT-based media, in the media developed there are images, audio, video and animation and there are puzzle games and others. With the aim to help achieve learning goals. This is in line with the opinion (Kurniawan 2013) that the klrarification of elementary school students' learning media, especially third grade students, students can be introduced to hardware element media, namely media that can display images, as well as animation with the aim of students better understanding the material provided by teachers. This is in line with Nurrita (2018) that learning media is an important element in the learning process that becomes a student's need. Therefore, this interactive media can help the learning process. This scientific-based interactive learning media development model is ADDIE which has 5 stages, namely 1), analysis, 2) design, 3) development, 4) implementation and 5) evaluation (Sugiyono 2011).

The results of the research that has been carried out at SDN Tanjungrejo 5 Malang, regarding android-based interactive learning learning media, showed that the results of validation of interactive learning media based on ”Scientific” from experts, media experts scored 94%, from material experts got 78% results, and from linguists got a score of 97% so that it can be concluded that interactive media based on ”scientific” assisted android studio PPKn material for elementary school students Overall it gets 85.5% of the ”Eligible” category. The results of the practicality of interactive learning media based on ”scientific” as a whole received an average score of 94% with the category ”Excellent”. And the results of the effectiveness of using post test questions to 10 3rd grade students get a 90% student completion score with the category ”very

Effective" used at SDN Tanjungrejo 5 Malang. The following is a table of data that has been obtained in the study.

Table 6: Media Eligibility Results.

No	Validator	Institution of Origin	As	Validation results
1	AG, S.Pd. M. Pd	Universitas PGRI Kanjuruhan Malang	Media expert validator	94 %
2	PS, S.S., M.Pd.	Universitas PGRI Kanjuruhan Malang	Material expert validator	78 %
3	Dr. R, M. Hum	Universitas PGRI Kanjuruhan Malang	Linguist validator	97%
Average 85,5%				
Category Layak				

Table 7: Media Practicality Results.

No	Validator	Institution of Origin	As	Validation results
1	Grade III students totaling 10 students	SDN Tanjungrejo 5 Malang	Assessment	86%
2	Ibu Irma S.Pd	SDN Tanjungrejo 5 Malang	Assessment	98%
Average 94%				
Category Excellent				

Berikut gambaran hasil keefektifan menggunakan media ini:

Table 8

Student Name	Skor	Criterion
Albyan	95	Completed
Alifya	85	Completed
Annassyah	90	Completed
Aqilah	95	Completed
Athasabiha	100	Completed
Bima	85	Completed
Daris	95	Completed
Davrina	95	Completed
Defanto	85	Completed
Prasetyo	50	Not Completed
Completed = 9 siswa		
Not Completed = 1		
Presentase = 90%		
Criterion = Highly Effective		

4. CONCLUSION

Based on research that has been done, it can be known that interactive learning media based on ”Scientific” Assisted Android Studio PPKn Material For Elementary School Students can be found bahhwa: The results of interactive media validation based on ”scientific” from media experts get a score of 94% from material experts get a score of 78% and from linguists get a score of 97% and from linguists get a score of 97% so that it can be concluded that interactive learning media based ”Scientific” overall has an average of 85.5% of the ”Feasible” category used in SDN Tanjungrejo 5 Malang.

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