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Development of Android-Based Class in Hole Teaching Materials to Increase Students' History Awareness

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ABSTRACT

Teaching materials are an important point in the implementation of student lectures in class. The availability of printed teaching materials is very unattractive in this modern era. This research aims to develop teaching materials for the Android-based Classical Indonesian History course. Research using ADDIE. Data collection techniques through pre-test and post-test for Tadris IPS students. The data analysis technique in this research went through three stages, namely expert validity test, normality test and paired sample t-Test. Android-based Classic Indonesian History with Mobile Learning (Class In Hole) teaching materials to increase students' historical awareness have an effect on increasing students' understanding of concepts based on the results of the "Paired Samples Test", it is known that the t count has a negative value of -18.979. This negative T value causes the average pre-test score to be lower than the average post-test score. Next is the stage of finding the t table value, where the t table is searched based on the df (degree of freedom) value and significance value. From the output above, it is known that the df is 60 and the significance is 0.05. Based on the number of student participants of 61 and an error significance level value of 5%, the t table value is 2.00. So it can be concluded that the calculated t value (18.979) > t table (2.00). It can be concluded that the use of Class In Hole teaching materials to increase students' historical awareness has a significant effect. Class In Hole is suitable to be given as teaching material to students.

Keywords: Teaching materials, class in hole, historical awareness.

ABSTRAK

Bahan ajar merupakan poin penting dalam pelaksanaan perkuliahan mahasiswa di kelas. Ketersediaan bahan ajar yang berbentuk cetak sangat tidak menarik di era modern ini. Penelitian ini bertujuan untuk mengembangkan bahan ajar pada mata kuliah Sejarah Indonesia Klasik berbasis android. Penelitian menggunakan ADDIE. Teknik pengmupulan data melalui pre test dan post test kepada mahasiswa Tadris IPS. Teknik analisis data pada penelitian ini melalui tiga tahap yakni uji validitas ahli, uji normalitas dan uji paired sample t-Test. Bahan ajar Classic Indonesian History with Mobile Learning (Class In Hole) berbasis android untuk meningkatkan kesadaran sejarah mahasiswa berpengaruh terhadap peningkatan pemahaman konsep mahasiswa ini berdasarkan hasil uji "Paired Samples Test", diketahui t hitung bernilai negative yang

sebesar -18,979. T hitung bernilai negative ini sebabkan nilai rata-rata pre test lebih rendah dari pada rata-rata nilai post test. Selanjutnya adalah tahap mencari nilai t tabel, dimana t tabel dicari berdasarkan nilai df (degree of freedom) dan nilai signifikansi. Dari output di atas diketahui df sebesar 60 dan signifikansi sebesar 0,05. Berdasarkan jumlah partisipan mahasiswa sebanyak 61 da nilai taraf signifikansi kesalahan sebesar 5%, maka diperoleh nilai t tabel sebesar 2,00. Sehingga dapat disimpulkan bahwa nilai t hitung (18,979) > t tabel (2,00). Dapat disimpulkan bahwa penggunaan bahan ajar Class In Hole untuk meningkatkan kesadaran sejarah mahasiswa berpengaruh secara signifikan. Class In Hole layak untuk diberikan sebagai bahan ajar untuk mahasiswa.
Kata kunci: *Bahan ajar, class in hole, kesadaran sejarah*

A. INTRODUCTION

The use of smartphones is increasing rapidly from year to year. Reporting from kominfo.go.id smartphone use in Indonesia in 2018 reached 100 million people. With the large number of smartphone users, Indonesian people's habits have changed. In the lecture process, students prefer to access everything, including assignments and learning resources, from their fingertips(Abidin et al., 2023). Students use smartphones as a medium of communication and information(Aida & Hendra, 2023). Smartphones for students are no longer just a communication tool, but are an embodiment of their lifestyle (Solihin et al., 2020).

In this technological era, students tend to always be connected to smartphones, this causes students to not understand the lecture material presented by the lecturer. Students only focus on their respective gadgets (Herlambang, 2021; Lestari et al., 2023; Yaqin, 2017). Lecturer-centered learning in higher education is no longer interesting, and does not provide students with enough space to think critically (Nikmah, 2023). Seeing this condition, there is a need for Android-based mobile learning teaching materials in the Classical Indonesian History course. Teaching materials are an important point in learning (Arif et al., 2019; Murod et al., 2021; Susilo & Prasetyo, 2020). Teaching materials are a guide for students in lectures, and must be mastered in certain subjects (Aisyah et al., 2020). Good teaching materials are teaching materials that have clarity regarding the objectives to be achieved instructionally, are able to foster students' interest in learning and are able to explain the material with a good structure (Pujiati, 2007; Yefterson & Fallo, 2022)

One of the teaching materials here is mobile learning in an Android application. mobile learning as the ability to move from one place to another when using a mobile device to receive and contribute to various digital information sources(Pratama & Haryanto, 2017). Android is software that operates on Linux-based smartphones (Istiawan & Kusdianto, 2018). Mobile learning is a learning model that reduces static atmosphere and can create an effective, interesting and enjoyable learning process (Hiasa et al., 2023; Muyaroah, 2017). Mobile learning means that learning can be tailored to students' wishes, learning can be done outside of lectures. The limitation is that the smartphone screen is small so text and multimedia storage is limited (Matlubah Anik Anekawati, 2016).

Using Class In Hole or Classic Indonesian History with Mobile Learning teaching materials in lectures can create enthusiasm for learning and foster historical awareness using the smartphone platform. The use of appropriate learning media is needed in history learning. Historical material is often faced with material that is difficult and abstract and outside students' everyday experience, so that the material presented by lecturers is difficult for students to understand (Meihan, 2020). This reality was reinforced by the answer in the initial interview with one of the Tadris IPS students named Krisdayanti who stated that, "It's true ma'am, the Classical Indonesian History course is not very interesting for me. This course only focuses on rote memorization, without us knowing the real evidence." Apart from that, based on the results of initial observations made by the research team during the Classical Indonesian History course, it appeared that the students were less active if only the material was presented by the lecturer. However, if the lecturer explains the lecture material using video or photos, the students will be more impressed with paying attention and following the course well.

Android-based applications used as learning media can help the teaching and learning process of students and lecturers. With a more attractive and less monotonous appearance because it is more interactive. This is one of the reasons why this learning media application was developed (Astuti et al., 2020). With this learning media, students can learn more independently whenever they are, not just limited to studying in class (Henny Puspitasari, 2023)

Previous research has studied the use of Android-based applications in history learning. Like research by Andre Mustofa Meihan entitled "Mobile Learning-Based History Learning Media (Meihan, 2020). In Meihan's research, the method used is library research or what is usually called a library research approach. So the research collects data by reviewing and/or exploring several journals, books, and sources of data or information related to research. Wafiyatu also researched the development of Indonesian history teaching materials (modules) based on temples in Blitar to increase historical awareness (Maslahah & Rofiah, 2019). Adhitya Rol Asmi et al on "Development of a Mobile Learning Model Based on Android Applications in ASEAN History Courses (Asmi et al., 2019). From previous research, no one has discussed the use of Android-based teaching materials for Tadris IPS students in Classical Indonesian history courses. This research is based on the large number of Tadris IPS students who do not know the historical heritage around them. The majority of T.IPS IAIN Ponorogo students come from four cities, namely Ponorogo, Madiun, Ngawi and Magetan. In fact, historical remains, in this case from the Hindu-Buddhist period, are numerous. The lack of historical awareness among students is due to the absence of teaching materials related to Hindu-Buddhist heritage in the area where students live. Class In Hole is expected to be able to meet students' needs for teaching materials during the lecture process.

B. RESEARCH METHOD

This type of research is development research. Development research is usually known as a type of R&D (Research and Development). The development research method is a research method that aims to produce certain products and test the effectiveness of these products (Sugiyono, 2014; Wajdi & Tandililing, 2022; Wibowo & Lee, 2022). The choice of ADDIE in this research is because this model provides room for continuous improvement in each stage. So as to produce teaching materials in the form of systematic applications for Android (Noviyanti, 2020; Tegeh & Kirna, 2013). The first step in ADDIE is analysis. In this research there is problem analysis, needs analysis and material analysis(Asdar et al., 2023; Rafles et al., 2023). In the analysis of the need for teaching materials, there is no availability of Android-based teaching materials in the Classical Indonesian History course. Students during the learning process have not been able to understand the differences between historical relics such as statues, sites, yoni, lingga, and patirtaan. Students call all historical relics with a Hindu-Buddhist style a temple. Even though the functions of these objects are different. This is because the learning process is still focused on explanations from lecturers alone without adding other learning resources.The second step is design. At the design stage, Class In Hole teaching materials are based on the analysis that has been carried out previously (Anisa & Asmendri, 2022; Asmayanti et al., 2020).

The third stage is development. Development is a stage in developing teaching materials according to the design that has been made (Permana et al., 2023). At this stage the teaching materials that have been developed are then validated by expert validators based on the instruments that have been prepared. The validator consists of four experts. Two validators for learning media experts, 2 validators for learning material experts. The fourth stage is implementation. Implementation stage of applying teaching materials that have been designed and developed for 6th semester T.IPS students who are taking the Classical Indonesian History course. The fifth stage is evaluation. Evaluation. The evaluation stage is the stage of analyzing the results of student assessments after using teaching materials in the learning process in class.

C. RESULTS AND DISCUSSION

Research on the development of teaching materials was carried out as a result of classroom learning observations in classical Indonesian history courses. This course is taken by students majoring in Tadris IPS semester 6. In this course there are no special teaching materials based on Android. The teaching materials developed went through five stages, namely:

a) Analyze

In this research there is problem analysis, needs analysis and material analysis (Magdalena et al., 2024). Based on a general analysis of students' abilities during the learning process they have not been able to understand the differences in historical relics such as statues, sites, yoni, phallus and patirtaan. Students call all historical relics

with a Hindu-Buddhist style a temple. Even though the functions of these objects are different. This is because the learning process is still focused on explanations from lecturers alone without adding other learning resources.

b) Design

After completing the analysis stage, the next stage in this research is design. The first step is material study. The material that will be displayed on the Android application is Hindu-Buddhist heritage in four districts. Hindu-Buddhist relics scattered in Ponorogo, Magetan, Ngawi and Madiun Regencies include yoni, linga yoni, patirtaan, sites and inscriptions. The teaching materials that will be displayed in the application are in the form of images, descriptions of historical heritage, and quizzes. The second step is designing the media.

Class In Hole teaching materials are designed using the Microsoft PowerPoint application. Several applications must be installed on a laptop or computer(Prismanata, 2021): 1) **Microsoft PowerPoint**, the application commonly used to create presentation slides. It is recommended to use version 2010 and above so that it has good support for other supporting applications. 2) **ISpring Suite 9**, this application is used to convert PowerPoint projects (ppt or pptx) into HTML files (file format for websites). This application will be automatically integrated into the Microsoft PowerPoint application. 3) **Java**, this application is used as a prerequisite for the Web 2 Apk Builder application. If this application is not installed, the consequence is that the Web 2 Apk Builder application cannot be used. 4) **Web 2 Apk Builder**, this application is a converter or package changer from html format to *.apk so that it can be installed and opened on Android. Conceptually, the application resulting from these changes is in the form of a webview of the PowerPoint slides that have been created.

The first step is to create a design or appearance plan for each educational mobile page that you want to present via the Microsoft PowerPoint application.The settings in the Microsoft PowerPoint application that must be made before we design an educational mobile display are Slide Size or slide size. This is done so that the display is suitable for the screen ratio on the smartphone. How to set the Slide Size in Microsoft PowerPoint is as follows: 1. In the Microsoft PowerPoint application, open the Design tab > Select Custom Slide Size. As shown in the following image. Figure 1: Initial Design of Class In Hole Teaching Material. 2. Select the ISpring Suite 9 tab > Player (this feature appears in Microsoft PowerPoint after the laptop has ISpring Suite 9 installed). In this step, we first set the player form that will be used, select None (Slide Only).

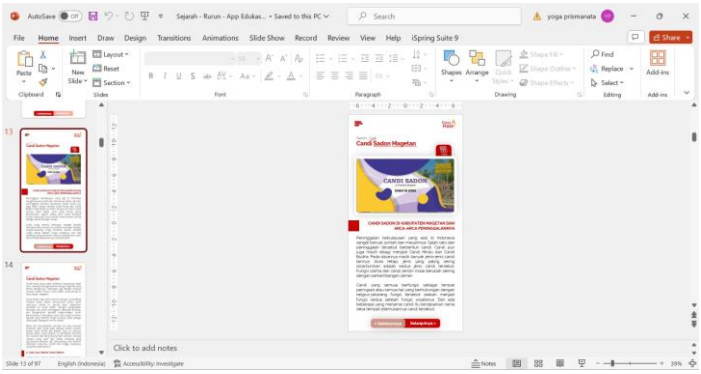

Figure 1: Initial Design of Material for the Class In Hole Application

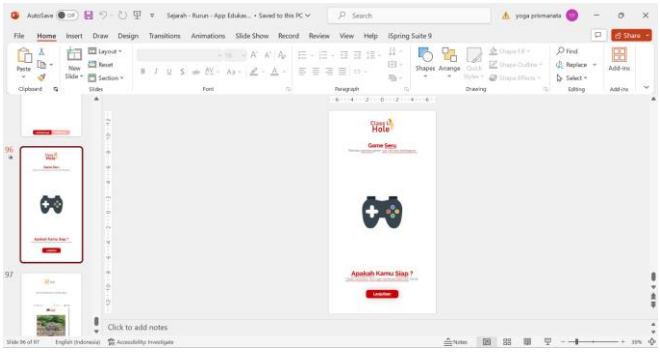

Figure 2: Initial Quiz Design for the Class In Hole Application

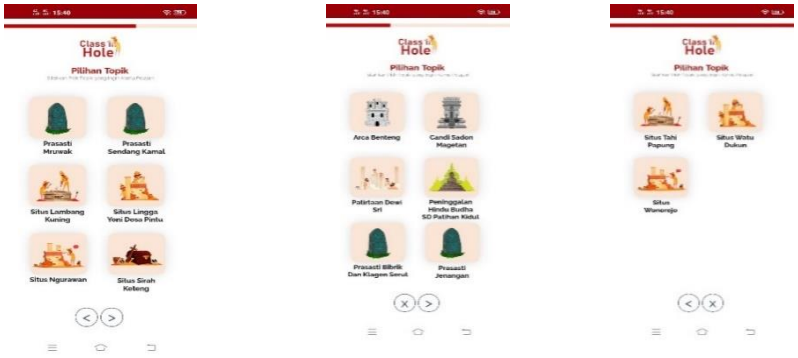

Figure 3: Menu options from Hindu-Buddhist historical heritage

c) Development

When the planning stage has been completed, it continues with the development stage. At this stage, a series of processes for developing draft teaching materials are carried out which consist of requests for validation from validators who are competent in their fields and can provide suggestions/input to obtain teaching materials that will be included in the Android application. The aim of the development stage is to develop the design of teaching materials into teaching materials that aim to increase students' historical awareness. Development here is completing the application for the validation process. Based on the assessment of suggestions and input from the validator, the researcher revised the draft teaching material which was ready to be tested on Tadris IPS class 2020 class A and B students. Validation of the Class In Hole teaching material product was tested by four experts, consisting of 2 material experts learning, 2 learning media experts. The criteria for determining an expert subject are experience in the field and status as a lecturer. The results of expert validation are described as follows

1. Learning Material Expert Validation Results

The material in this teaching material was assessed by two material experts with lecturer status. From the results of material expert validation, data was obtained as in the table below;

Table 1 Feasibility Test Results For Class In Hole Teaching Materials

No	ASPEK	Validator 1		Validator 2	
		Hasil	Kelayakan	Hasil	Kelayakan
1	Kualitas Materi	88,235%	Sangat layak	82,353%	Sangat layak
2	Kemanfaatan Materi	80,000%	layak	93,333%	Sangat layak
Total		**87,000%**	**Sangat layak**	**84,000%**	**Sangat layak**

Based on the table above, the aspects asked on the validation sheet show the feasible and very feasible categories. The results from validator 1 obtained values of 88.23% and 80%. For validator 2, very decent results were obtained, namely 82.353% and 93.333%. The total number of material experts is 87% and 84%, so Class In Hole teaching materials are very suitable for use by students.

2. Learning Media Expert Validation Results

The media in the Calss In Hole teaching materials were assessed by two learning media experts who have lecturer status. From the results of media expert validation, data was obtained as in the table below

Table 2 Feasibility Results for Class In Hole Learning Media

No	ASPEK	V2		V2	
		Hasil	Kelayakan	Hasil	Kelayakan
1	Pengenalan Program	90,000%	Sangat layak	100,000%	Sangat layak
2	Kontrol Pengguna	86,667%	Sangat layak	100,000%	Sangat layak
3	Tampilan Program	83,333%	Sangat layak	87,500%	Sangat layak
4	Bantuan Program	80,000%	layak	80,000%	layak
5	Akhir Program	86,667%	Sangat layak	80,000%	layak
6	Prinsip Desain Multimedia	80,000%	layak	83,333%	Sangat layak
Total		**83,721%**	**Sangat layak**	**87,907%**	**Sangat layak**

Based on the table above, the aspects asked on the validation sheet show the very feasible category. The value results from validator 1 obtained a value of

83.721%. For validator 2, a very decent result was obtained, namely 87.907%. So it can be concluded that Class In Hole teaching materials are very suitable for use by students.

d) Implementation

Implementation is the stage after completion of the development stage. Of course, until the product being developed has been validated by experts. Products that have been revised are based on assessments, criticism and suggestions for improvement from expert validators and then enter the implementation stage. At this stage, the revised product was tested on students majoring in Tadris IPS, Faculty of Tarbiyah and Teacher Training, IAIN Ponorogo in the Tadris IPS A and Tadris IPS B Semester 5 classes, which included 61 students. This stage consists of pretest and posttest.

Several stages were taken in developing the Android-based Calss In Hole teaching materials to increase students' historical awareness, including analyzing the needs and appropriate themes to optimize students' concepts of historical awareness, in addition to analyzing the needs for teaching materials for the Classical Indonesian History course. After carrying out the needs analysis, the next step is designing the product, implementing the product and then analyzing the research results. The aim of this development research is to increase students' historical awareness with research samples from the 6th semester IPS A and IPS B classes to determine whether or not there is an influence of using Class In Hole teaching materials on students' historical awareness.

Data collection is adjusted to the student's class schedule in the first week. Before lectures begin, students are given a pretest of five descriptive questions related to the Hindu-Buddhist heritage in the area where the students live. The same treatment in classes A and B. In the 4th week, students were given posttest questions using Calss In Hole teaching materials.

In the analysis of pretest and posttest data collection, the researcher used Paired Sample T-Test. The data analyzed is divided into two, the first as a requirement for conducting paired sample t test analysis and the second to test the research hypothesis. The analysis requirements are a data normality test. Data normality test using Kolmogorov-Smirnov. The data above is student test result data. Before being tested using the Paires Sample T-Test, the data is analyzed first to find out whether what will be tested is normally distributed or not using the Kolmogrov Smirnov test.

Table 3 Normality Test Results

Tests of Normality			
Kolmogorov-Smirnov[a]			
	Statistic	df	Sig.
Pretest	0,093	61	.200*
Posttest	0,096	61	.200*

Based on the output table above, it is known that the degrees of freedom for the pretest and posttest are 61. So the Kolmogorov – Smirnov technique is used to detect data normality in this research. Then from the output the Sig value is known. For the pretest it is 0.200 and the Sig value. For the posttest it is 0.200. Because the Sig value for the pretest and posttest is > 0.05, then as is the basis for making decisions in the Kolmogorov-Smirnov normality test above, it can be concluded that the results of the student's pretest and posttest scores are normally distributed.

Test Results Table 4 Paired Samples Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-29.60656	12.18370	1.55996	-32.72695	-26.48617	-18.979	60	.000

Based on the 'paired samples test' output table above, the Sig value is known. (2-tailed) is 0.002<0.05, then H0 is rejected and Ha is accepted. So it can be concluded that there is an average difference between the pre-test and the post-test, which means that there is an influence of Class in Hole teaching materials in increasing students' historical awareness. So it can be concluded that the calculated t value (18.979) > t table (2.00). It can be concluded that the use of Class In Hole teaching materials to increase students' historical awareness has a significant effect.

e) Evaluation

The fifth stage of the ADDIE development model is the evaluation stage. During the trial process, suggestions and input from validators are collected to be used as improvements and revisions to the teaching materials being developed. Various improvements made are related to the appropriateness of the content of teaching materials. This evaluation stage consists of student pre-tests and post-tests on the textbook products that have been prepared. The conclusion is that there is an increase in understanding of concepts after using Class In Hole teaching materials.

D. CONCLUSION

Research into the development of Android-based Class In Hole teaching materials to increase students' historical awareness uses the ADDIE research model. The materials (analysis), the design stage, the Android-based Class In Hole teaching development stage to increase students' historical awareness which has been developed by researchers are

declared feasible, both in terms of learning materials and learning media. The percentage of assessments on aspects of learning material in validator 1 was 87% and validator 2 was 84%. From these results the learning material is very suitable for students. For learning media on validator 1 the results were 83.721% and for validator 2 it was 87.907%. Seeing this presentation, learning media is very suitable for students. This application is used by Tadris IPS students in the classic Indonesian History course. with. The Class In Hole application is used on Hindu-Buddhist heritage material from the 9-14th century AD, namely from the Medang Kamulan Kingdom to the Majapahit Kingdom. The Android-based Class In Hole teaching materials to increase students' historical awareness have an effect on increasing students' understanding of concepts based on the results of the "Paired Samples Test". The use of Class In Hole teaching materials to increase students' historical awareness has a significant effect.

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