

Development of Augmented Reality-Based Islamic Religious Education Learning Media

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Abstract

In today's modern era, information is one of the basic needs and sources of knowledge for all people, and archives are one of the sources of information. In this period, the archival function becomes increasingly important because archives provide evidence of organizational accountability. Learning occurs effectively when all influential components support each other to achieve learning goals. To advance teaching and learning activities, especially in Islamic Religious Education (PAI) subjects, teachers should prepare teaching materials so that students can easily understand the subject matter. Therefore, appropriate learning support is needed, such as support using augmented reality (3D). Augmented reality (3D) is an application that connects the real world and the virtual world in two or three dimensions and simultaneously projects it into the real environment. The purpose of using augmented reality technology in the PAI learning model is to support the teacher's learning process as well as to increase students' interest in following the learning process. The method used in this research is the research and development method developed by Walter Dick and Lou Carey to produce certain products. The results of the research are presented in the form of augmented reality applications that can be run on Android smartphones.

Keywords: learning media, Islamic education, augmented reality

A. Introduction

Technology is developing so rapidly that it affects all aspects of life. It is developing so fast that it affects all aspects of life. The learning process is part of education. Education is one of these areas. The learning process is part of education. The most crucial factor in improving students' critical thinking skills is the learning experience. Improving students' critical thinking skills is the learning experience. There are three main goals for learning: conveying knowledge, developing attitudes, and developing students' skills. To attract students' interest and motivate them to learn, this approach needs to be innovative. To motivate them to learn, this approach needs to be innovative. It is impossible to separate the process of teacher and student interaction with each other using different strategies to achieve learning goals from talking about learning. It is impossible to separate the process of teacher and student interaction with each other while using

different strategies to achieve learning goals from talking about learning . The main objectives form learning objectives: imparting knowledge, developing attitudes, and developing students' skills.(Latifah et al., 2021)

The intended learning objectives are intended to assist students in helping with problems that arise in their daily lives. Students in solving problems that arise in their daily lives. Teachers must of course provide varied and creative learning by using models, approaches, methods and media according to students' needs in order to help students achieve learning goals. Learning uses models, approaches, methods and media according to students' needs to help students achieve learning goals. . Students' learning motivation can be increased and their level of boredom can be reduced with various learning methods. Increased and their level of boredom can be reduced with various learning methods.(Universitas Nurul Jadid (UNUJA) & Hakim, 2018)

The insights learned from PAI are absorbed by the latest advances.progress. Even instructors find PAI learning boring because of its repetitive procedures combined with traditional teaching media and techniques. Due to the repetitive nature of procedures combined with traditional teaching media and techniques. One of the factors that influences how much an educator innovates or changes to make their PAI learning process truly innovative is how innovative their learning tactics and media are. In the modern era of information development, learning media innovation is a fundamental and very relevant learning milestone. In its development, learning media innovation is a fundamental and very relevant learning milestone.(Eliwatis & Sabarullah, 2021)

Media functions as a learning bridge between teachers and students. Between teachers and students during the teaching and learning process. During this, it can build connections, disseminate information, and channel messages to facilitate an efficient and successful learning environment. The teaching and learning process. This can build connections. , disseminate information, and channel messages to facilitate an efficient and successful learning environment . Learning media is a very important tool to help the learning process, and its use can have a significant impact on the success of the process. Media is a very important tool to help the learning process, and its use can have a significant impact on the success of the process. The integration of technology into the educational process presents new challenges for the educational sector. Technology into the educational process presents new challenges for the educational sector. Augmented reality is an ideal tool for the learning process. Augmented reality is an ideal tool for the learning process.(Alim, 2021)

B. Methods

Researchers use the research and development research approach to conduct their investigations. ADDIE (Analysis, Design, Development, Implementation and Evaluation) is the development model that is employed. Both qualitative and quantitative data collection techniques are then used in the data collection method. The results of an assessment questionnaire in the form of descriptions, recommendations, and feedback from research trial participants—material specialists, media experts, and students—are the qualitative data gathering technique. collected as category values—5, 4, 3, 2, and 1—through a trial questionnaire. These categories were then transformed into qualitative data using a Likert scale.

C. Discussion

Making Learning Media Applications

There are measures that need to be taken before developing a learning media application in order to create content that can both reach all students and make up for the deficiencies of the trainer or practicum module that was used. When developing a learning media application, the following steps must be taken into account:

- 1) deciding on the concept and format of the learning media;
- 2) figuring out the fundamental skills that students will acquire;
- 3) deciding on the content that will be covered in the learning media; and
- 4) deciding on the assessment method to determine how successful the learning media is.

There are steps involved in developing a learning media application, as stated by Legya (2015). Wherever this needs to be done, it will ensure that the learning media application we develop meets the planning aim and functions as best it can. (Romadan, n.d.) The following actions need to be taken:

a. User Requirements Specification Collection Stage

1. Needs Analysis

At this stage, identification of what needs are needed in designing learning media is carried out. Teachers need to make thorough observations of the subjects that will be taught to students, the basic competencies to be achieved in learning,

2. Examination of Hardware

The hardware analysis step entails determining the hardware requirements needed to develop the learning media application and launching the program as a test. Computer hardware specifications and smartphone specifications are included in hardware analysis.

3. Software Analysis

Software as support for developing learning media needs to be identified. In developing Augmented Reality multimedia, you will be introduced to several software commonly used to create Augmented Reality applications, such as Unity3D, ARToolKit, FLARToolKit, Junaio, IN2AR, D'Fusion Studio, OpenSpace3D, and Qualcomm. Some of this software is intended for commercial and non-commercial purposes. However, researchers use the software needed to build this learning media, including: Unity 3D, Vuforia SDK, Java JDK, Corel Draw X7, Adobe Photoshop CC2015, Format Factory, Star UML. (Anggara & Fahlevi, 2021)

a. Stages of System Architecture Planning

This is the point where the system's architectural design is completed. Use case diagrams, activity diagrams, and sequence diagrams all describe the system design.

b. Stages of System Component Design

At this point, the learning media application's components are designed. Analysis of hardware, software, requirements, and system architectural

planning are all included in the term "design." The storyboard is used to create the application design. A storyboard is a sketch-based visual representation of how instructional materials will appear.

c. Stages of Interface Design Creation

The interface design serves as the basis for creating the interface. Storyboards made during the interface design process are the foundation upon which the interface is constructed. Currently, software for graphic design is :

1. Symbols

To symbolize the learning media application on the main menu, the icon displays a little graphic. Usually, the symbol is located on the home screen of the smartphone.

2. The splash screen

The home page that loads first is the splash screen. When the application is run, this page shows up to let you know it has begun to function.

3. Home Page of the Main Menu

This is the primary menu page that users can visit when using learning media. This page has choices for materials, assessment, augmented reality, and basic competencies. The abilities that must be attained after utilizing this learning media are displayed in the basic competency option. The menu known as "augmented reality" is created by simultaneously merging virtual and real objects. Evaluation menu, as an independent evaluation carried out by students, to determine the extent of absorption of the material delivered through the media used. (Mustaqim, Ilmawan & Kurniawan, 2017)

a) Menu of Basic Competencies

The fundamental competencies found in PAI learning resources are available on this menu. The minimal proficiency that students must attain in every topic is known as basic competency. The syllabus's core competencies serve as a guide for teachers for the learning objectives that must be met. For instance, having the ability to reconcile with one's surroundings and other issues. The primary competency in this study is prayer, specifically the ability of pupils to comprehend proper prayer practices and perform movements in line with the Hadith and Koran. (Resnawati & Arifin, 2023)

b) Menu for Augmented Reality

This page has a collection of Augmented Reality that the researcher has previously produced. For example, the AR image we are displaying is about prayer movements. The researcher has collected AR on proper prayer movements, which are also included in PAI learning materials. In actuality, there is a lot more content that is comparable to this AR media, particularly in regards to PAI learning. Examples include protocols for pilgrimages, purification, correctly writing Arabic, and other topics where there is a movement in favor of Augmented Reality.

c) The Materials Menu

The purpose of this material menu is to store educational resources, particularly those related to Islamic religious education (PAI). For example, we use prayer materials that include movements that students need to be more familiar with. These movements can be converted into augmented reality format. With the use of Augmented Reality (AR) technology, it is hoped that individuals who are just beginning to learn

prayer movements and reading will become more enthusiastic and interested in prayer guidance. The feature that users find most significant is that they can view authentic images of prayer movements that closely resemble the original. This can be used for information other than just prayer movements, such as instructions on Hajj rituals, how to.

d) The Assessment Menu

This page serves to enhance learning materials that have not met learning objectives or have not met learning goals related to Islamic Religious Education. Students will improve their understanding in this evaluation menu, particularly on content they do not comprehend, and there is also an exam or test to determine whether the evaluation has been carried out, if they do not understand the prior material or if their marks are not as expected. attain the anticipated value; if not, more assessment will be conducted.

e) The Page of the Profile

A brief bio of the learning media developers is displayed on this page. Thus, the name, address, birthdate, educational background, and experiences the developer had while creating this augmented reality application are all listed on this page. In addition to further information about using augmented reality, this page may include instructions on how to use AR applications that teachers or students may not have previously understood or appreciated.

d. Stages of Program Creation

The interface design phase and different programming language applications are combined to create a program. This step culminates in a system that operates as anticipated. At this point, there are three things that must be done: (1) asset preparation, which involves installing Unity 3D as the primary program on the computer; (2) creating a marker to serve as the installation location for the virtual object; and (3) uploading. four: make a new project in Unity 3D using the markers you made in Vuforia for verification (Mustaqim, Ilmawan & Kurniawan, 2017).

Initially, load the designed design into the Unity 3D project to develop the main menu. Each button has a set of actions that activate when it is pressed. Programming doesn't stop until every aspect of the design may be utilized on a smartphone.

D. Conclusion

Based on the given description, multiple inferences can be made. Media for learning is an essential component of education. This is due to the fact that the learning media utilized has an impact on how well the teacher presents the content. Obtaining educational media is undoubtedly quite simple in the present era. In addition to being simple to get, you must exercise caution while selecting the media to be employed. The media needs to be accessible to all pupils and provide a different approach to addressing their lack of interest in studying. Using media based on augmented reality (AR) is an appropriate medium.

Teachers can employ augmented reality to develop engaging, interactive, and user-friendly learning materials. Virtual or online learning modules that are now unavailable in schools can also be replaced by augmented reality.

Despite being in virtual form, students can still see and utilize the module in the same way as before. With the help of this recent development, an increasing number of learning media variations—particularly for PAI learning—can be produced to enhance classroom instruction.

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