



AUGMENTED REALITY TECHNOLOGY-BASED PAI LEARNING MODEL: POTENTIAL AND CHALLENGES IN MODERN ISLAMIC EDUCATION

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Abstract:

The rapid development of digital technology is driving the world of education to continuously adapt, including in the teaching of Islamic Religious Education (PAI). Technology-based innovations such as Augmented Reality (AR) provide new opportunities to deliver more interactive, contextual, and engaging learning for students. Through AR integration, abstract religious concepts can be visualized in three dimensions, making them easier to understand and internalize. This study aims to analyze the potential, capabilities, and challenges of implementing AR in PAI learning as part of efforts to modernize Islamic education in the digital era. The method used is a literature study with a descriptive qualitative approach through a review of various journals, scientific articles, and relevant previous research results. The results show that the application of AR can increase student interest in learning, strengthen understanding of spiritual values, and create meaningful and enjoyable learning experiences. However, the implementation of this technology still faces several obstacles such as limited digital infrastructure, a lack of technological literacy among PAI teachers, and the unequal readiness of Islamic educational institutions to integrate technology into the curriculum. Therefore, teacher training, policy support, and the development of AR content that aligns with Islamic values are needed for optimal and ethical implementation.

Keywords: *Islamic Religious Education, Augmented Reality, Learning Innovation, Educational Technology*

INTRODUCTION

Islamic Religious Education (PAI) plays a crucial role in shaping students' character and personality, fostering faith, piety, and good morals. However, amidst the rapid development of globalization and digitalization, traditional teaching methods based on lectures and memorization are beginning to feel inadequate. Today's younger generation is growing up in a technology-rich environment, where information, images, and visual interactions are essential to everyday life. Therefore, Islamic Religious Education (PAI) teachers are expected to keep pace with these developments and utilize technology to ensure the learning process remains relevant, engaging, and meaningful for students. In modern education, Augmented Reality (AR) is one technological innovation that can be used to enhance students' learning experiences.

This technology combines the real world with computer-generated virtual objects, creating a more interactive and realistic learning environment.

In Islamic Religious Education (PAI) learning, AR can be used to present abstract concepts such as angels, miracles, or Islamic history in three-dimensional forms that are easier for students to understand. In addition to being engaging, the use of AR in learning also supports a student-centered learning approach, where students are actively involved in the learning process. This approach aligns with the principles of Islamic education, which encourage a learning process based on reflection, exploration, and critical thinking. However, the implementation of technologies such as AR in the context of Islamic education still faces several challenges. Issues such as a lack of supporting devices and facilities, teachers' low digital skills, and a lack of support from education policy are often major obstacles.

Against this backdrop, this study aims to explore the potential and challenges of implementing AR-based learning media in Islamic Religious Education (PAI) subjects. This study is expected to provide a deeper understanding of how modern technology can be used effectively and ethically to improve the quality of Islamic religious learning in schools and madrasahs.

RESEARCH METHODS

This research uses a descriptive qualitative approach with a library research method. This method was chosen because it is relevant for examining concepts and phenomena that have been discussed by various previous researchers. Data were obtained from scientific journals, books, articles, and research reports related to the application of Augmented Reality technology in the context of Islamic Religious Education (PAI) learning.

The first stage of the research began with the process of collecting secondary data from various credible sources, both national and international. The data was then categorized based on its relevance to the research theme, namely the potential and challenges of implementing AR in Islamic Religious Education (PAI) learning.

In the next stage, the data was analyzed thematically to identify common patterns emerging in the literature. The analysis was conducted by examining how AR is used in the learning process, the resulting benefits, and the factors hindering its implementation. Data validity was maintained through a process of source triangulation, where findings were compared between different literature sources to ensure consistency of information.

Through this method, the research not only yields a conceptual understanding of AR integration in PAI but also offers new insights into how technology can be utilized to strengthen moral and religious education without compromising its transcendent values.

RESULTS AND DISCUSSION

Islamic Education Learning in the Digital Era: Challenges and the Need for Innovation

Islamic Religious Education (PAI) today faces significant challenges, primarily due to rapid technological developments. Students now live in a digital world filled with images and interactivity. Traditional teaching methods, often based on speeches or memorization, often fail to engage a generation accustomed to digital media. As a result, their enthusiasm for learning declines, and they struggle to grasp abstract concepts such as Islamic beliefs, etiquette, and history. Therefore, innovation is needed in the PAI learning process. One promising solution is the application of Augmented Reality (AR) technology.

This technology combines the real world with digital objects, creating a more enjoyable, engaging, and contextualized learning experience. With AR, concepts that are difficult to explain through words alone can be presented visually. This way, students can "see" and "experience" Islamic values directly in a dynamic learning environment.

Concept and Characteristics of Augmented Reality in Islamic Education

Augmented Reality (AR) is a technology that allows the integration of digital objects, such as 3D images, videos, or text, into the real world through devices such as mobile phones, tablets, or AR glasses. In Islamic religious education, AR can be used to display learning simulations that are relevant to the subject matter, such as how to perform ablution (wudu), prayer movements, the Prophet Muhammad's journey of hijrah (migration), or the structure of the Grand Mosque in 3D that can be interacted with. The use of AR not only makes students more interested in learning, but also facilitates experiential learning, where students learn by directly interacting with the objects and learning context. This technology makes Islamic Religious Education (PAI) learning more meaningful, not just memorizing, but also understanding its values and meaning. Thus, AR can be a means of connecting religious knowledge with the needs of education in the 21st century.

The Potential of AR in Improving the Quality of Islamic Education Learning

The use of AR in Islamic Religious Education (PAI) learning has enormous potential. First, AR can help understand difficult concepts by presenting clear and realistic images. For example, students can see three-dimensional images of the Kaaba, historical sites in Islam, or the steps of prayer, assisted by audio explanations. Second, AR can increase student enthusiasm for learning and engage them. Engaging learning experiences make them more enthusiastic and eager to learn. Third, AR can train critical thinking and collaboration skills, as students often work in groups to solve problems or understand religious matters through digital media. Fourth, AR allows each student to learn at their own pace and in a way that suits them. For teachers, AR can be a creative tool for explaining material without relying on existing physical teaching aids. These four advantages make AR a crucial innovation in promoting modern Islamic education.

Augmented Reality-Based Islamic Education Learning Model

The Islamic Religious Education (PAI) learning model using AR in this study was created by combining constructivist learning principles and direct experience. Learning begins with the teacher providing an initial explanation to connect the subject matter to students' everyday situations. Students then use an AR application to explore the material, for example, simulating how to worship or depicting Islamic history. Afterward, students engage in small group discussions to analyze their findings. The teacher also assists in value reflection sessions, enabling students to understand the spiritual and ethical significance of their learning experiences. Assessment is carried out through practical knowledge tests, observations of worship practices, and assessments of student attitudes and reflections. This model not only encourages understanding of knowledge but also fosters meaningful morals and religious experiences.

CONCLUSION

Augmented Reality (AR)-based Islamic Religious Education (PAI) learning models have significant potential for enhancing students' understanding and motivation to learn through interactive visualizations that make religious concepts more concrete and engaging. This technology can connect Islamic values with digital developments, making learning more contextual and relevant to current needs. However, its success depends on teacher preparedness, supporting facilities, and school policies for ethical technology management. Despite challenges such as limited infrastructure and digital literacy, AR still offers significant opportunities for creating innovative, meaningful Islamic Religious Education (PAI) learning that remains grounded in Islamic values.

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