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Virtual Reality-Based Interactive Learning Media For Fiqh Ibadah In Indonesian Islamic Education: A Systematic Literature Review

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Abstract

Technological advancements continue to drive innovation across various fields, including Islamic religious education. One promising innovation is the use of Virtual Reality (VR) as an interactive learning medium. In the context of fiqh ibadah, this technology offers a more immersive and applicable learning experience, particularly for worship practices such as Hajj and Umrah. This study employs a systematic literature review method to explore the implementation of VR-based learning media in Islamic education. A total of 20 peer-reviewed articles from national and international journals published within the last five years were analyzed. The selection criteria included: relevance to fiqh ibadah, incorporation of VR technology, and contextual relevance to Islamic education in Indonesia. This review examines the advantages and challenges of using VR, the relevance of VR in simulating worship practices, and the stages involved in designing VR-based interactive learning media. The findings are expected to contribute to the development of innovative, contextual, and relevant learning tools for the digital era.
Keywords: Learning Media Design, Fiqh Ibadah, Virtual Reality Technology

Kemajuan teknologi terus mendorong lahirnya inovasi di berbagai bidang, termasuk pendidikan agama Islam. Salah satu inovasi yang menjanjikan adalah pemanfaatan Virtual Reality (VR) sebagai media pembelajaran interaktif. Dalam konteks fikih ibadah, teknologi ini menawarkan pengalaman belajar yang lebih imersif dan aplikatif,

khususnya pada praktik ibadah seperti haji dan umrah. Penelitian ini menggunakan metode systematic literature review untuk menelaah implementasi media pembelajaran berbasis VR dalam pendidikan Islam. Sebanyak 20 artikel yang telah ditelaah sejawat, baik dari jurnal nasional maupun internasional yang terbit dalam lima tahun terakhir, dianalisis. Kriteria seleksi mencakup relevansi dengan fikih ibadah, keterlibatan teknologi VR, serta keterkaitannya dengan konteks pendidikan Islam di Indonesia. Kajian ini menyoroti keunggulan dan tantangan penggunaan VR, relevansi VR dalam mensimulasikan praktik ibadah, serta tahapan perancangan media pembelajaran interaktif berbasis VR. Hasil penelitian ini diharapkan dapat berkontribusi pada pengembangan media pembelajaran yang inovatif, kontekstual, dan relevan dengan kebutuhan pendidikan di era digital.
***Kata Kunci**: Desain Media Pembelajaran, Fiqih Ibadah, Teknologi Virtual Reality*

INTRODUCTION

Islamic Religious Education plays a crucial role in shaping students' character and spirituality. One of the main aspects of religious education is the study of fiqh ibadah, which includes the procedures for performing acts of worship such as ablution (wudu), prayer (shalat), almsgiving (zakat), and pilgrimage (hajj and umrah). However, in the modern era, fiqh ibadah instruction still relies heavily on conventional, text-based approaches such as printed books and lectures. These methods are less relevant to the digital habits of today's students and tend to hinder their understanding and engagement with worship practices (Fitriani, 2021).

The lack of interactive and contextual learning media contributes to difficulties in grasping abstract and procedural materials like prayer or pilgrimage, which ideally require visualization and hands-on experience. This limitation affects both cognitive and psychomotor domains, resulting in reduced motivation and learning outcomes. Furthermore, conventional media often fail to accommodate students' diverse learning needs and do not effectively support simulation-based instruction (Prasetya, 2023).These conditions highlight the urgent need for innovative learning media that are more immersive and capable of contextualizing fiqh ibadah content in alignment with students' learning characteristics in the digital age.

With the advancement of technology, information technology-based learning approaches have been implemented to address these challenges. Technologies such as Virtual Reality (VR) enable immersive worship simulations, allowing students to experience learning in a near-realistic manner. Previous studies have shown that the use of VR in *fiqh* education can significantly improve students' conceptual understanding and practical skills. However, the implementation of this technology in the context of *fiqh ibadah* remains limited, especially in formal Islamic education in Indonesia.

To support the design of effective multimedia-based learning, this study adopts Richard E. Mayer's Cognitive Theory of Multimedia Learning (CTML). This theory is grounded on three key assumptions: (1) Dual Channel, where learners process information through both visual and auditory channels; (2) Limited Capacity, which states that each channel has a limited ability to handle information at once; and (3) Active Processing, where learners actively select, organize, and integrate information into coherent mental models (Mayer, 2014). These principles emphasize the need to balance visual and auditory content to avoid cognitive overload, while promoting meaningful learning through well-structured media design.

CTML aligns well with Virtual Reality-based learning, as it encourages the integration of images, narration, and interaction in a cohesive framework. Sweller's Cognitive Load Theory further strengthens this approach by stressing the importance of managing mental effort in multimedia environments, especially when learners are exposed to complex tasks like simulating worship rituals (Sweller, 2005). By applying these theoretical foundations, the development of VR media for *fiqh ibadah* can optimize learners' cognitive engagement and enhance both understanding and retention of religious practices.

Previous research has investigated the use of Virtual Reality (VR) in Islamic education with promising outcomes. For instance, a study by Sumardani et al. (2021) titled "*The Free Hajj: Virtual Reality in Manasik Hajj Training Education*" developed a VR application to simulate Hajj rituals. The study found that the application provided a comprehensive and practical learning experience for prospective pilgrims through immersive simulations and Indonesian-language audio guidance (Sumardani et al., 2021). Similarly, Mohd Yasin et al. (2010) in "*Avatar Implementation in Virtual Reality Environment Using Situated Learning for Sa'i (Muslim Hajj Ritual)*" reported that 70% of students understood the material better through VR simulations than conventional presentations, and 80% expressed higher learning interest with 3D virtual methods (Mohd Yasin et al., 2010).

Another study by Utami et al. (2021) titled "*Immersive Virtual Reality Learning as a Stimulation for Introducing Islamic Religious Worship Places for Early Childhood*" showed that VR media significantly increased young children's interest in learning about Islamic worship spaces. Likewise, Efi et al. (2023) in "*Virtual Reality in Education: Transforming Learning through Immersive Technology*" emphasized VR's potential in enhancing student engagement and experiential learning across disciplines. However, the study also noted challenges such as high equipment costs and teacher readiness. In the Indonesian context, Zulfa et al. (2023) found that VR improved students' psychomotor skills in ritual practices like ablution and prayer.

Despite these promising findings, most prior studies are focused on isolated ritual simulations or general Islamic knowledge, without a strong connection to formal fiqh ibadah instruction or curricular integration in Indonesia. There is a lack of research that systematically designs VR-based learning media aligned with Islamic pedagogical principles, instructional objectives, and the national curriculum. Therefore, this study addresses that research gap by offering a conceptual design for VR-based interactive learning media tailored specifically for fiqh ibadah education in the Indonesian Islamic education context, aiming to bridge theoretical understanding with practical worship competence.

RESEARCH METHODOLOGY

This study employs a qualitative approach using a Systematic Literature Review (SLR) method. The review aims to explore and analyze previous research on the use of Virtual Reality (VR) technology in Islamic Religious Education, particularly for topics with similar characteristics to hajj and umrah in fiqh ibadah. The data used comprises relevant research findings obtained from nationally and internationally indexed journal articles. The study focuses on the design, development, and effectiveness of VR technology in religious-based learning, such as the teaching of prayer procedures, mosque simulations, and other materials requiring visualization.

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This method based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The review aims to explore and analyze previous research on the use of Virtual Reality (VR) technology in Islamic Religious Education, particularly for topics with characteristics similar to fiqh ibadah, such as Hajj and Umrah. Literature searches were conducted in several databases, including Google Scholar, Scopus, Web of Science, and Garuda, using combinations of keywords such as: "Virtual Reality", "Islamic Education", "Fiqh", "Hajj", and "Umrah". The search was limited to peer-reviewed articles published between 2018 and 2023 in English or Bahasa Indonesia.

The inclusion criteria for article selection were: (1) articles discussing the application of VR in Islamic education, particularly related to fiqh ibadah content; (2) articles published in nationally or internationally indexed journals; and (3) full-text articles accessible online. The exclusion criteria included: (1) articles focusing on Augmented Reality without VR components; (2) non-scholarly sources such as blogs or news articles; and (3) duplicate or irrelevant studies. From an initial pool of 103 articles, screening based on titles and abstracts reduced the number to 47, and after applying inclusion and exclusion criteria, 20 articles were selected for full analysis. The article selection process followed PRISMA guidelines to ensure transparency and methodological consistency.

The selected articles were then analyzed descriptively and thematically to extract comprehensive information regarding the design, development, and implementation of VR in religious-based learning, especially on visualization-dependent topics like prayer, ablution, and pilgrimage. The analysis focused on identifying VR's advantages in creating immersive, engaging, and contextually relevant learning environments, as well as its pedagogical impact. Furthermore, this process allowed for identifying existing research gaps, thereby establishing a strong theoretical foundation for the development of VR-based learning media that is both effective and aligned with the characteristics of fiqh ibadah education.

RESULT AND DISCUSSION

Advantages and Challenges of Using VR in Islamic Religious Education

Integrating Virtual Reality (VR) into Islamic religious education opens the door to more immersive and meaningful learning experiences. By simulating sacred spaces such as Masjid al-Haram and Arafat, VR allows students to develop a clearer understanding of religious rituals prior to experiencing them in real life (Rahmawati, 2021). This technology has shown effectiveness in conveying complex religious practices, particularly those requiring spatial and sequential understanding.

Evidence from recent studies highlights that VR fosters greater engagement and comprehension in subjects that benefit from contextual and visual reinforcement. Ismail and Hasanah (2022) report that students using VR-based media display more enthusiasm and a deeper grasp of material compared to those learning through conventional methods. Furthermore, the ability of VR to simulate procedural aspects of worship, such as ablution, prayer, and pilgrimage, supports psychomotor learning and reinforces theoretical concepts (Zulfa, 2023).

Nevertheless, significant obstacles remain. High procurement and maintenance costs often limit access, especially in under-resourced schools (Nurhidayah, 2022). Technological infrastructure, including internet reliability and access to hardware, poses further constraints. Compounding these issues is a shortage of trained educators capable

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of implementing VR tools effectively (Sari & Akbar, 2023). From a pedagogical standpoint, educators must carefully redesign learning content to maximize the technology's potential (Mulyadi, 2021)

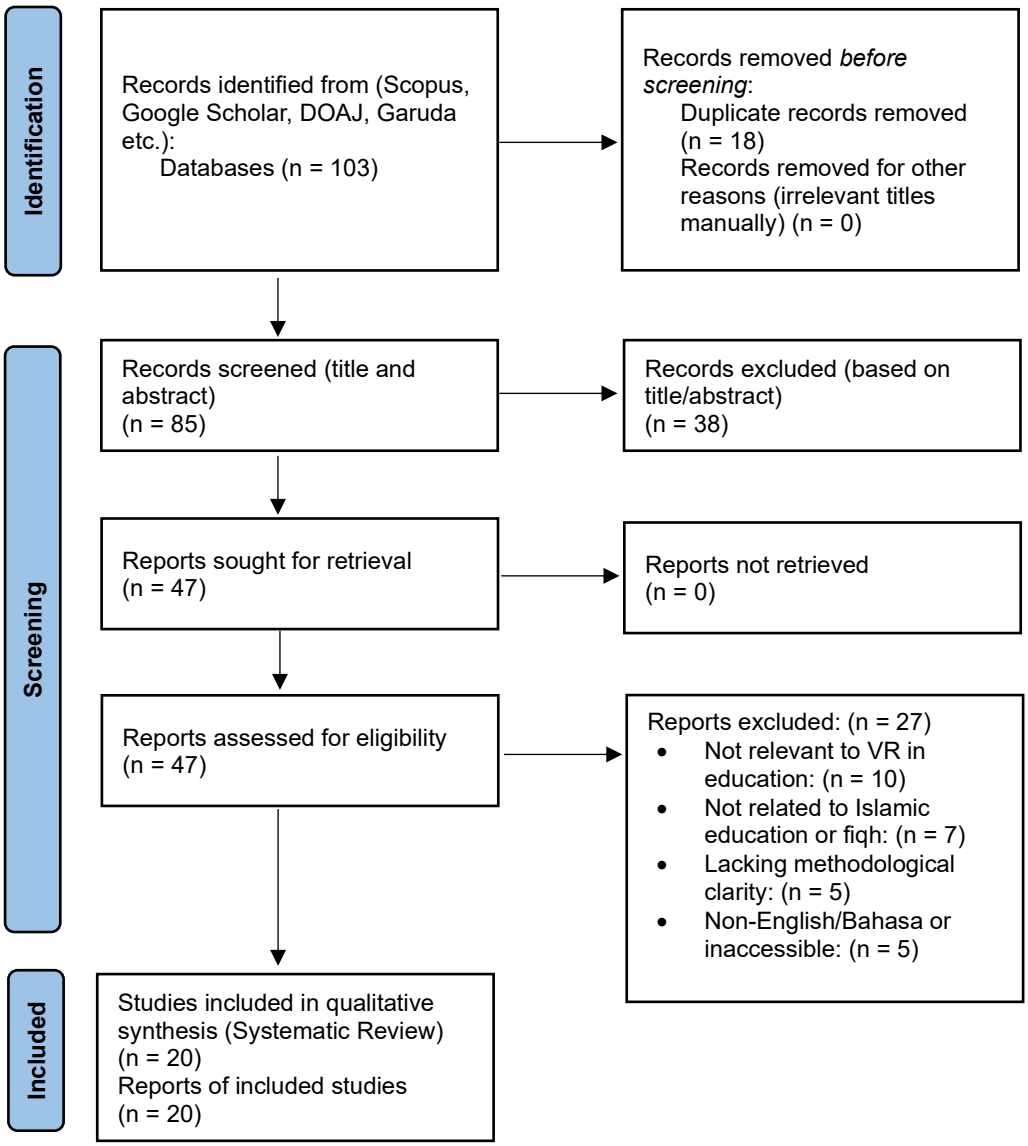

Table 1. PRISMA 2020 Flow Diagram

A total of 103 records were initially identified through systematic searches across both national and international academic databases, including Scopus, Google Scholar, DOAJ, and Garuda. After removing 18 duplicate entries, 85 records proceeded to the screening stage, where titles and abstracts were evaluated for relevance. Of these, 38 were excluded for lacking a clear connection to the research focus. The remaining 47 articles underwent full-text review to assess their eligibility. However, 27 of them were excluded due to issues such as thematic irrelevance to Virtual Reality (VR) in education, lack of focus on Islamic religious instruction particularly *fiqh ibadah* methodological inconsistencies, or inaccessibility due to language limitations.

The final 20 studies selected for synthesis offered substantial insights aligned with the objectives of this research: examining the integration of VR technology in the teaching of *fiqh ibadah* within Islamic education. Notably, although these studies addressed the use of immersive media in religious learning, few explicitly engaged with the curriculum-based application of VR in the Indonesian context. This highlights a significant gap in current scholarship, which this study seeks to address by proposing a pedagogically grounded, VR-based learning model tailored for *fiqh ibadah* education in formal Islamic settings.

No	Author(s)	Topic	Methodology	Key Findings	Contribution to Fiqh Ibadah
1	(Sumardani et al., 2021)	VR for Manasik Hajj	Descriptive Analysis	Enhanced readiness and ritual familiarity	High
2	(Mohd Yasin et al., 2010)	Sa'i Ritual with Avatar in VR	Quantitative	Increased comprehension (70%) and engagement (80%)	High
3	Utami et al. (2021)	VR for Worship Places (Early Childhood)	R&D (ADDIE)	Improved interest and learning motivation	Moderate
4	Efi et al. (2023)	General VR in Islamic Education	Qualitative Study	Elevated engagement, noted technical and cost challenges	Moderate
5	Zulfa et al. (2023)	VR in Ritual Practice Training	Mixed Methods	Improved psychomotor skill acquisition	High

Table 2. Summary of Reviewed Studies on VR in Islamic Religious Education

Table 2 presents key findings from a subset of the 20 peer-reviewed journal articles selected through the PRISMA-based SLR process described in the methodology section. These articles represent diverse applications of VR in Islamic education and illustrate their contributions to fiqh ibadah learning. This table presents 5 of the 20 studies included

in the final synthesis, selected to reflect variation in approach, educational level, and pedagogical contribution.

The studies summarized in Table 2 illustrate the increasing academic interest in immersive learning tools for Islamic education. Most notably, they provide strong evidence that VR can enhance conceptual clarity and psychomotor performance in practicing rituals such as Hajj, Umrah, ablution, and prayer. These findings reinforce the significance of designing context-specific learning media that align with Islamic pedagogical frameworks and support the integration of technology into the national religious curriculum.

Learning Aspect	Conventional Method	VR-Based Method
Visualization	Limited (Text/Image)	Realistic 3D Simulation
Engagement	Moderate	High
Psychomotor Training	Minimal	Interactive Practice
Conceptual Clarity	Varies	Contextualized Immersion
Emotional Readiness	Rarely Addressed	Improved (Anxiety Reduction)
Learning Flexibility	Fixed (In-Class)	Self-Paced, Repeatable

Figure 1. Comparison of Learning Outcomes: Conventional vs. VR-Based Methods in Fiqh Ibadah. Synthesized from sources in Table 2

The Relevance of VR in Teaching Fiqh Practices: Hajj and Umrah Simulations

Teaching fiqh, particularly Hajj and Umrah rituals, poses unique challenges as it involves hands-on practice requiring a deep understanding of procedures and conditions for valid worship. Virtual Reality (VR) offers a relevant solution to these challenges by providing immersive simulations of worship experiences, allowing students to visualize each step practically and interactively. A study by Aminah (2023) revealed that using VR in teaching Hajj rituals significantly improved students' comprehension of the procedures, enabling them to better understand each movement and prayer without being physically present at the holy sites.

Research highlights that VR provides a more realistic experience compared to conventional learning tools like books or video tutorials. For example, Nugroho and Fitria (2022) found that VR simulations can replicate the experience of standing at Arafat or performing Tawaf around the Kaaba, allowing students to feel the atmosphere of these sacred places. This not only reinforces theoretical knowledge but also internalizes the experience, enhancing students' responsibility and readiness for actual worship(Fitriani, 2021).

VR also helps reduce students' anxiety about performing Hajj or Umrah for the first time. By experiencing the rituals step-by-step through simulations, students gain confidence and clarity about what to expect when they are at the actual sites. Research by Supriyadi et al. (2021) found that VR-based learning enhances students' comfort and self-assurance in performing rituals, as they already have a clear understanding of the process.

As Wulandari and Setiawan (2022) emphasize, there is an urgent need to develop VR content that is not only technologically advanced but also accurate and aligned with Islamic teachings to avoid misconceptions. Misaligned VR content could distort students' understanding of correct rituals. Hence, close collaboration between technology experts and Islamic scholars is essential in designing VR materials. This partnership ensures that all simulations adhere to authentic sources and Islamic law. Periodic monitoring and

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evaluation by competent authorities are also necessary to maintain the relevance and correctness of VR-based learning, ensuring it provides positive impacts in teaching fiqh practices.

Furthermore, VR enables personalized learning, where students can study at their own pace and revisit materials for deeper understanding without disrupting the learning process for others. Firdaus et al. (2021) stated that VR-based learning media offers high flexibility, allowing students to tailor their learning experiences to their needs, which is often unattainable in traditional teaching methods.

The application of VR in teaching fiqh, especially in Hajj and Umrah lessons, demonstrates significant relevance by offering deeper and more comprehensive learning experiences. This innovative tool allows students to experience ritual simulations directly and immersively, facilitating a more concrete understanding of each worship stage. Compared to conventional methods, VR provides a more interactive experience by virtually simulating Hajj and Umrah processes, such as standing at Arafat and performing Tawaf, helping students visualize and practice the rituals accurately.

Another advantage of VR is its appeal to younger generations who are more familiar with technology and digital devices. Today's students tend to prefer technology-based learning that is more engaging and enjoyable. By integrating VR, complex and challenging topics like fiqh become easier to understand as students can practice them realistically and memorably. Thus, VR serves not only as an innovative educational tool but also as an effective bridge to meet the dynamic and evolving learning needs of students.

Applying Mayer's Cognitive Theory of Multimedia Learning (CTML) provides a strong framework for understanding how multimedia elements can enhance learning outcomes. This theory is particularly relevant when integrating immersive technologies, such as VR, into educational contexts, including the teaching of fiqh. Mayer's principles emphasize coherence, signaling, redundancy, and spatial contiguity, which are crucial in multimedia learning environments. When applied effectively, these principles can optimize immersive experiences, fostering deeper cognitive engagement and better retention of complex concepts like those found in Islamic jurisprudence (Klingenberg et al., 2022)

Research shows that immersive VR can boost learner engagement and motivation, critical factors for effective learning. However, studies also indicate that while VR enhances learners' enjoyment of educational experiences, it does not always lead to improved learning outcomes (Makransky et al., 2021). This discrepancy underscores the need for careful instructional design that incorporates Mayer's principles to ensure immersive experiences facilitate cognitive processing rather than overwhelm learners (Parong & Mayer, 2020).

In addition, the Cognitive Affective Model of Immersive Learning (CAMIL) demonstrates that immersive environments can lead to significant knowledge acquisition by fostering cognitive and affective engagement (Parong & Mayer, 2020). This model supports the idea that when learners are emotionally and cognitively involved, they are more likely to retain information and apply it in practical contexts, such as understanding and implementing Fiqh principles in real-life scenarios (Marougkas et al., 2023). Furthermore, integrating VR into the teaching of Fiqh can leverage the principle of spatial continuity, enabling learners to interact with virtual representations of legal scenarios, thus enhancing their understanding of complex legal concepts through experiential learning (Makransky & Mayer, 2022). The ability to simulate real-world situations in a

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controlled environment allows students to practice critical thinking and decision-making skills essential for applying Fiqh in various contexts (Veras et al., 2022).

Applying Mayer's Cognitive Theory of Multimedia Learning in the context of immersive virtual reality presents a promising pathway for enhancing Fiqh teaching and learning. By adhering to Mayer's principles and utilizing the unique capabilities of VR, educators can create engaging and effective learning experiences that deepen students' understanding and retention of complex legal concepts.

Designing VR-Based Learning Media for Fiqh Worship Practices

When designing VR-based learning media for Hajj and Umrah topics, there are four main stages to consider to ensure the learning process achieves its intended goals effectively and remains relevant to students across various educational levels. These stages are as follows:

1. **Clear and Measurable Learning Objectives**

   The primary goal of using VR-based learning media for Hajj and Umrah topics is to provide a more immersive and interactive learning experience, enabling students to understand and practice the steps of these rituals realistically. By utilizing VR technology, the learning process becomes more tangible, allowing students to directly experience each stage of the rituals, such as Tawaf, Sa'i, and Wuquf, without physical travel. In this context, VR media plays a crucial role in meeting the competency standards outlined in the Islamic Education curriculum for students in elementary, middle, and high schools. For instance, for elementary school students, the learning objectives can focus on introducing the basics of Hajj and Umrah rituals, while for middle and high school students, the learning can delve deeper into the meanings, wisdom, and more complex procedures of the rituals.

   It is essential to ensure that the learning objectives for each VR session are clearly measurable. One way to achieve this is by including evaluation features in the VR application that allow students to receive feedback on their understanding and execution of the rituals. For example, after completing a ritual simulation, students can receive feedback on whether the steps they performed were correct or require improvement. These evaluation features ensure that students not only understand how to perform the rituals but also grasp their meanings and wisdom. Thus, VR-based learning can deepen students' understanding of Hajj and Umrah comprehensively.

2. **Interactive and Contextual Simulation Design**

   The simulations in VR-based learning for Hajj and Umrah rituals should be thoroughly designed so students can experience the rituals directly and realistically. Using VR technology, students can undergo various stages of the rituals, such as performing Tawaf around the Kaaba, praying at Arafah, or carrying out Sa'i between Safa and Marwah. Each simulation must be meticulously structured, emphasizing the correct steps of the rituals so that students can practice them according to Islamic guidelines. To maximize understanding, each stage of the rituals should include interactive explanations that not only provide instructions but also help students comprehend the essence of each action performed in the simulation.

   To make the learning process more contextual and relevant, it is crucial to incorporate narration features that explain the meaning and wisdom behind each ritual. The narration should be delivered in simple, easy-to-understand language for students across all educational levels elementary, middle, and high school. This approach

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ensures that students learn not just the procedural aspects of the rituals but also the spiritual and moral purposes embedded in each step. VR-based simulations not only teach the technical aspects of worship but also deepen students' understanding of the holistic and comprehensive meanings of Hajj and Umrah rituals.

3. **Integrating Islamic Values into Learning**

The simulations used in VR-based learning must be carefully designed to provide students with a profound and immersive worship experience. Through this technology, students can simulate various stages of worship, such as performing Tawaf around the Kaaba, praying at Arafah, or completing Sa'i between Safa and Marwah, offering a more realistic experience compared to conventional learning methods. Each stage should include clear, step-by-step instructions to guide students in performing the rituals correctly. Additionally, enriching the learning experience with narration features is essential to explain the meaning and wisdom of each act of worship in simple, easy-to-understand language for students across different educational levels. This ensures that students not only understand the physical steps but also internalize the spiritual significance of each worship activity.

To enhance the relevance and effectiveness of learning, the narration included in the simulation must be tailored to the students' level of understanding. Using simple and accessible language is vital to help students connect the concepts of worship to their everyday lives. Explaining the wisdom and purpose behind each ritual will provide deeper understanding, ultimately strengthening students' emotional and spiritual connection to Hajj and Umrah worship. This approach ensures that VR-based learning not only provides technical knowledge about worship procedures but also instills profound religious values, allowing students to experience the deeper meanings behind each ritual step

4. **Feedback and Evaluation Features**

To enhance the effectiveness of VR-based learning, it is essential to incorporate feedback and evaluation features that provide objective assessments of students' understanding and execution of the rituals. After completing simulations, such as Tawaf or Sa'i, the VR system can provide evaluations on how accurately students followed the ritual steps. For instance, after a Tawaf simulation, the system can check whether students completed the correct number of circuits or assess whether the prayers recited align with the prescribed methods. These evaluations not only improve understanding but also help students refine their ritual steps before performing them in real life.

The immediate feedback feature allows students to recognize and correct errors during the simulation, giving them an opportunity to better understand the proper execution of the rituals while boosting their confidence before performing them in reality. These evaluation features also serve as a learning effectiveness measurement tool, assessing how well students understand the material and execute the rituals in line with Islamic teachings. Consequently, the evaluation system within VR can create a deeper learning experience and better prepare students for performing Hajj and Umrah rituals.

CONCLUSION

The application of Mayer's Cognitive Theory of Multimedia Learning in the development of Virtual Reality (VR)-based learning media demonstrates significant potential in enhancing the effectiveness of *Fiqh Ibadah* education. By applying Mayer's

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principles and leveraging the immersive capabilities of VR technology, this approach offers a more interactive, engaging, and meaningful learning experience.

Specifically, in the context of teaching *Fiqh Ibadah* notably the rituals of Hajj and Umrah VR facilitates students' understanding not only of the procedural and technical aspects, but also enriches their spiritual awareness and internalization of the values embedded in these acts of worship. VR simulations promote learning retention, reduce anxiety, and encourage experiential understanding, making it a promising tool in digital-era Islamic education.

However, this literature review is limited in several respects. First, the number of empirical studies on VR implementation in Islamic education remains relatively scarce, particularly in non-ritual topics. Second, there is limited discussion on how to ensure alignment between VR content and authentic Islamic sources, which is crucial for religious accuracy. Additionally, most studies focus on short-term learning outcomes, leaving the long-term impacts underexplored.

Future research should therefore consider conducting empirical studies that evaluate the long-term effectiveness of VR-based learning, develop standard guidelines for content validation in collaboration with Islamic scholars, and expand the application of VR to other areas of Islamic studies beyond ritual practice. Incorporating diverse learner contexts and feedback would also help improve the design and pedagogical impact of VR-based media.

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