Mobile Learning Applications for Islamic Studies: A Systematic Review of Design Principles and Learning Outcomes

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Informasi Artikel	Abstract
           Keywords: mobile learning, Islamic studies, app design, learning outcomes, systematic review	The advancement of digital technology has paved the way for the emergence of various mobile learning applications increasingly used within the context of Islamic education. This phenomenon not only reflects the trend of integrating technology into modern learning systems but also raises fundamental questions about how these applications are designed and how far they impact learners' experiences and learning outcomes. This article presents a systematic review of scholarly studies discussing the use of mobile applications in Islamic studies education. The review focuses on two key aspects: the design principles employed in application development and the learning outcomes achieved following their use. The review involved selecting literature from the past six years using specific inclusion criteria, including content relevance, source credibility, and its connection to mobile learning practices in Islamic education. Analysis reveals that designs considering cultural appropriateness, user interface interactivity, and integration of Islamic values positively influence students' emotional engagement, motivation, and content comprehension. Learning outcomes also extend into affective and spiritual domains, not merely cognitive. These findings serve as an initial foundation for developers and educators to build an adaptive, meaningful, and value-based Islamic mobile learning ecosystem.

Abstract

Kemajuan teknologi digital telah membuka jalan untuk munculnya berbagai aplikasi pembelajaran mobile yang semakin banyak digunakan dalam konteks pendidikan Islam. Fenomena ini tidak hanya mencerminkan tren integrasi teknologi ke dalam sistem pembelajaran modern, tetapi juga menimbulkan pertanyaan mendasar mengenai bagaimana aplikasi-aplikasi tersebut dirancang dan sejauh mana dampaknya terhadap pengalaman belajar dan hasil belajar peserta didik. Artikel ini menyajikan tinjauan sistematis terhadap studi-studi ilmiah yang membahas penggunaan aplikasi mobile dalam pendidikan studi Islam. Tinjauan ini fokus pada dua aspek utama: prinsip desain yang digunakan dalam pengembangan aplikasi dan hasil belajar yang dicapai setelah penggunaannya. Tinjauan dilakukan dengan memilih literatur dari enam tahun terakhir menggunakan kriteria inklusi tertentu, termasuk relevansi konten, kredibilitas sumber, dan keterkaitannya dengan praktik pembelajaran mobile dalam pendidikan Islam. Analisis menunjukkan bahwa desain yang mempertimbangkan kesesuaian budaya, interaktivitas antarmuka pengguna, serta integrasi nilai-nilai Islam memiliki pengaruh positif terhadap keterlibatan emosional, motivasi, dan pemahaman konten siswa. Hasil belajar juga mencakup ranah afektif dan spiritual, tidak hanya kognitif semata. Temuan ini menjadi landasan awal bagi pengembang dan pendidik untuk membangun ekosistem pembelajaran mobile Islam yang adaptif, bermakna, dan berbasis nilai.

Kata Kunci: pembelajaran mobile, studi Islam, desain aplikasi, hasil pembelajaran, tinjauan sistematis

INTRODUCTION

Over the past decade, the rapid growth of digital technology has significantly transformed global education systems. One of the most tangible impacts of this transformation is the emergence of mobile-based learning, widely known as mobile learning. This phenomenon is not only growing in general education but has also begun to penetrate the field of Islamic studies (Budiarto et al., 2024). The existence of mobile learning applications specifically designed for Islamic content is a response to the needs of a tech-savvy generation seeking flexible, interactive, and digitally compatible learning methods (Basyiroh et al., 2024).

Islamic education today faces dual challenges: on the one hand, it must preserve the integrity of spiritual and local cultural values, and on the other, it must adapt to the inevitable acceleration of technology. Mobile learning applications offer a potential solution to these challenges. However, critical questions arise: Have these applications been designed using appropriate pedagogical principles? To what extent can they produce learning outcomes that touch not only the cognitive but also affective and spiritual dimensions?

These questions necessitate a systematic review of the design and effectiveness of mobile learning applications for Islamic studies. Prior research indicates that successful learning applications are not solely determined by the technology used, but also by how consistently user-oriented design principles are applied (Alvarado, 2025; Bangerl et al., 2024). In the context of Islamic studies, these principles must be aligned with religious values, sharia-compliant content, and educational approaches that maintain etiquette and morality throughout the learning process (Norman et al., 2025).

This review is important as limited research specifically maps out the design characteristics of mobile learning applications used in Islamic education and their influence on learning outcomes. A thorough understanding of both is crucial for developers, educators, and policymakers to ensure that technological innovations remain grounded in the core values of Islamic education (Rusman et al., 2025). Moreover, this study responds to the need for contextual and relevant Islamic learning systems in the digital age. Rukmana et al. (2024) emphasize that the success of technology integration in Islamic education strongly depends on accompanying value awareness and spiritual orientation.

Using the Systematic Literature Review (SLR) approach, this article seeks to filter and synthesize recent research relevant to the topic, particularly from academic publications between 2018 and 2024. The main focus lies in two areas: first, the design principles used in the development of mobile learning applications for Islamic studies; and second, the learning outcomes arising from their use. With this focus, the article aims to provide a solid foundational perspective for developing mobile learning applications that are not only technically effective but also spiritually meaningful.

METHOD

This study adopts the Systematic Literature Review (SLR) approach to obtain a comprehensive overview of trends, patterns, and findings related to mobile learning app design and learning outcomes in Islamic studies. SLR is chosen for its capacity to systematically and evidence-based synthesize a broad range of prior research (Yusif & Hafeez-Baig, 2024). This approach is also suitable for addressing conceptual and exploratory research questions, particularly in identifying app design practices and their impacts on learning within Islamic education.

The main stages of the process include: (1) formulating the study focus, which is divided into two aspects app design principles and learning outcomes; (2) searching for relevant scholarly articles; (3) filtering based on inclusion and exclusion criteria; (4) extracting key data from the selected articles; and (5) thematic analysis to identify patterns and conclusions. The inclusion criteria were as follows: articles published between 2018–2024, using empirical or descriptive-qualitative methods, and discussing mobile applications used in real Islamic education settings. Articles not in English or Indonesian, not fully available, or irrelevant to the core topic were excluded.

The search was conducted using academic search engines such as Google Scholar and open databases like DOAJ and GARUDA, using keywords including "mobile learning," "Islamic studies education," "app design," "learning outcomes," and "Islamic education technology." A total of 38 articles were initially identified, narrowed down to 16 articles that met the criteria and were analyzed in depth.

Analysis was conducted using a thematic approach, categorizing data into two broad groups: first, app design characteristics and principles; second, the forms and domains of reported learning outcomes. This approach follows Braun & Clarke (2023) method, allowing the grouping of data based on recurring patterns of meaning.

Through this methodology, the review aims not only to present a summary of findings but also to offer a conceptual basis for the contextual and Islamic development of mobile learning apps aligned with digital pedagogical advances (Firdaus et al., 2023).

RESULTS AND DISCUSSION

The advancement of digital technology particularly mobile learning applications has significantly transformed educational practices worldwide, including in Islamic education. One of the main advantages of mobile learning is its ability to provide flexible, interactive, and accessible learning anytime and anywhere (Fields et al., 2021; Husnita et al., 2023). In the Islamic education context, such applications offer solutions to geographical and social limitations and provide methods that align with the digital lifestyle of Millennials and Gen Z learners (Putri Nur Habibah et al., 2024; Sanusi, 2024).

As learning media, mobile applications present not only textual and video content but also offer high interactivity through features such as quizzes, worship simulations, and instant feedback. These features align with active pedagogical principles that place learners at the center of the learning process(Hailikari et al., 2022). Research shows that Islamic learning applications that apply user-friendly design principles and cultural relevance can enhance students' emotional engagement and learning motivation (Ahmadi & Saad, 2024; Asri et al., 2024). In this context, cultural and religious alignment is crucial to ensure the content is not only scientifically accurate but also accepted psychologically and spiritually.

However, not all Islamic mobile learning applications are developed to the same standards. Some available apps on the market fail to meet Sharia-compliant and Islamic value-based content criteria. This raises serious concerns due to the potential for misinformation and misunderstanding (Khozin et al., 2021). Therefore, supervision and certification by credible Islamic educational or religious institutions are essential to ensure the reliability and benefit of these apps.

Regarding learning outcomes, the literature reveals that mobile applications in Islamic education contribute not only to cognitive development but also positively impact students' affective and spiritual domains. Applications integrating digital content such as dhikr (remembrance), supplications, and moral habituation can improve students' religious awareness and moral attitudes (Mustafidin et al., 2024; Sugianto, 2024). This indicates that mobile learning apps serve not only as knowledge transfer tools but also as means for character and spiritual formation.

The use of mobile technology in Islamic education also presents its own challenges. One major issue is the limitation of infrastructure and digital access. Despite increasing internet penetration in many regions of Indonesia, certain areas still suffer from poor connectivity, limiting the effectiveness of online-based mobile learning (Gazi et al., 2023; Rayuwati, 2020). This condition demands that developers create lightweight applications that work offline and are compatible with various devices, ensuring Islamic education through technology remains inclusive.

Furthermore, digital literacy is a key factor in the successful implementation of mobile learning applications. Both educators and learners must possess adequate digital competencies to utilize the applications effectively (Falloon, 2020; Robandi et al., 2025; Setiasih et al., 2023a; Zabolotska et al., 2021). Teachers, as facilitators in Islamic education, must master digital literacy while upholding Islamic values to guide learners in using technology in alignment with religious principles. Thus, technology becomes not just entertainment but a meaningful and effective educational tool.

In terms of design, ideal Islamic mobile learning applications should embody Islamic pedagogical principles by integrating cognitive, affective, and psychomotor domains (Arfani, 2024; Pranajaya et al., 2023). These apps must present content in an easily understandable manner and contain values such as monotheism (tawhid), noble character (akhlaq), and worship (ibadah). For instance, interactive features like chatbots for Qur'an reading practice, prayer simulations, and engaging multimedia-based Islamic history lessons can enhance appeal while reinforcing practical internalization of Islamic values.

The importance of this holistic approach is supported by Moslimany et al. (2024), who emphasized that digital Islamic curricula should balance knowledge acquisition with character and spiritual development. Mobile applications can serve as a bridge to integrate these three aspects into a sustainable learning process. Thus, technology-based Islamic education can address modernization challenges without sacrificing its foundational religious values.

Equally essential is an ethical framework to govern the use of technology in Islamic education. Solihin et al. (2020) asserts that Islamic learning application development must be rooted in strong moral responsibility. This includes content monitoring, protecting learners' data privacy, and preventing misinformation. An ethical approach provides the foundation to avoid negative impacts such as dehumanization or the loss of spiritual values.

Moreover, literature highlights that blended learning combining face-to-face and digital learning is a highly effective model for Islamic education (Qamar et al., 2024; Setiasih et al., 2023b; Setiawan, 2019). This model allows for personal teacher-student interaction while leveraging technological advantages. In this setting, the teacher remains a murabbi or spiritual guide who directs and exemplifies Islamic values.

Philosophically, reconstructing an Islamic education paradigm responsive to the digital era requires a shift in mindset and action rooted in tawhid. Tawhid should not merely be taught as content but should serve as the foundation for designing education systems, curricula, and learning technologies (Hadi, 2019; Robandi & Setiawardani, 2025; Rusman et al., 2025). This new paradigm combines the authenticity of Islamic teachings with technological innovation without sacrificing spiritual essence.

In addition, the concept of "digital spirituality" emerges as a new competency to be developed in modern Islamic education. Digital spirituality refers to the ability to use technology meaningfully without losing spiritual awareness and orientation. This concept includes ethical awareness in app usage, the selection of educational content, and the development of applications that nurture Islamic values (Apriyanto et al., 2021; Rabbianty et al., 2023; Setiawardani et al., 2021; Wahab Syakhrani et al., 2023). Consequently, Islamic education can produce a generation that is not only tech-literate but also spiritually grounded and morally upright.

Finally, collaboration among app developers, educators, and religious institutions is essential to create a healthy and high-quality mobile learning ecosystem. Governments and Islamic educational institutions need to set standards for application development that not only keep up with technological advances but also safeguard the authenticity and integrity of Islamic teachings (Elihami et al., 2024). This approach is key to sustaining Islamic education amid digital challenges without losing its identity and core values.

CONCLUSION

Mobile learning applications in Islamic studies offer strategic opportunities to enhance access and quality of Islamic education in the digital era. With flexible use and interactive features, these applications meet the learning needs of today's generation who seek adaptive and contextual learning methods. However, the success of mobile learning in Islamic education is not solely dependent on technological sophistication but hinges on how the applications are designed with a holistic Islamic pedagogical approach integrating cognitive, affective, and spiritual dimensions.

Developing mobile learning applications infused with Islamic values such as tawhid, noble character, and worship not only deepens content understanding but also strengthens value internalization and character building among students. This spiritual dimension becomes the key differentiator of Islamic learning apps compared to general educational applications. Therefore, oversight and certification by competent educational and religious institutions are essential to ensure content quality and credibility.

Infrastructure challenges and limited digital literacy must also be addressed in mobile learning app development. Applications that can function offline and on low-end devices will reach a broader range of learners across society. Additionally, educators play a critical role in integrating these apps effectively into learning while guiding students to use technology in line with Islamic values.

A robust ethical framework is a prerequisite to prevent technology from undermining spiritual and moral values. Islamic education in the digital era must maintain a balance between technological

innovation and the authenticity of divine revelations that form the foundation of Islamic education. A blended learning approach combining face-to-face and digital modes proves effective in fulfilling these needs.

Moreover, the paradigm of Islamic education needs reconstruction by placing tawhid as the primary foundation in designing curricula and learning technologies. Islamic education must foster digital spirituality competencies so that students can live meaningfully in digital environments without losing spiritual direction. Ethical awareness and educational content selection are key to ensuring that mobile learning applications support the vision of Islamic education that is faithful, knowledgeable, and morally virtuous.

Overall, the development of mobile learning applications for Islamic studies must be grounded in synergy among developers, educators, and religious institutions. This aims to build a digital learning ecosystem that is not only effective and efficient but also responsive to contemporary demands while preserving the integrity of Islamic teachings. In this way, Islamic education can continue to evolve and thrive amid technological dynamics without losing its essence as a means for forming morally excellent individuals.

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