MOBILE LEARNING: FUTURE LEARNING TECHNOLOGIES FOR ISLAMIC FORMAL EDUCATION (A LITERATURE STUDY)
Miftah Hur Rahman Zh, Zahid Zufar At Thaariq*, Arief Ardiansyah
1Universitas Negeri Malang, Indonesia
2Universitas Islam Malang, Indonesia
*zahid.zufar.2201218@students.um.ac.id.

ABSTRACT
The utilization of mobile learning media is a manifestation of 21st century educational methodologies. This research is prompted by the rapid rise in the usage of smartphones, iPads, and other mobile devices. This study aims to conduct literature research on how effective the use of mobile learning is, the challenges in its implementation, and the extent of mobile learning development in the scope of Islamic religious education. To find out this, the researcher used the Systematic Literature Review (SLR) method. Data and information were collected by reviewing every article that has a relationship with the effectiveness of mobile learning in the scope of Islamic Religious Education from 2018 to 2023. The results show that mobile learning is effectively used in the scope of Islamic Religious Education by integrating several media such as Android-applications, E-books and other media, but with a note that it is necessary to hold mobile media-based content creation training for teachers.

Keywords: Mobile learning, Islamic Education

1. INTRODUCTION
The fact that technology today has advanced rapidly. According to Arjunaita (2020), human life has transitioned into the 5.0 era. As the younger generation, we, as the inheritors of the Indonesian nation, must diligently acquire knowledge from all available sources worldwide to ensure that we do not lag behind other nations (Zh, Ardiansyah, Dewi, et al., 2022).

Technology and communication play a crucial role in contemporary digital life. Within the context of education, communication technology facilitates the learning process, particularly through mobile learning or learning based on mobile devices. Mobile learning is an extension of the concept of E-learning, which encompasses computer-based, web-based, and virtual classroom learning. E-learning utilizes many technological media such as the internet, satellite broadcasting, TV, audio, radio, and others for the learning process. Unlike Mobile learning, which focuses on learning through mobile devices such as Android, smartphones, and tablets that have limited storage capacity. The learning materials in Mobile learning typically consist of text and images. However, with technological advancements, content such as videos, animations, and audio can also be incorporated into mobile learning (Kulbi, 2019).

Mobile learning is believed to enhance the effectiveness of ongoing learning processes because of its alignment with technological and informational advancements (Kusuma et al., 2022). Mobile learning emerged as a response to the rapid advancements in information and communication technology in the early 21st century (Haq & Sujatmiko, 2021). This is considered a solution to the problem of access to education through a compact and easily accessible medium. Within a short period, learners can access learning materials, complete assignments, and utilize intuitive features to enhance learning efficiency. Wulandari et al., (2019) claim that mobile learning offers an opportunity to learn without the limitations of space and time according to the flexibility of the devices used. This creates a high spirit as well as opportunities for students to learn in a new place easily, beneficially, and in an enjoyable environment. The inclusion of additional learning materials, exercises, educational videos, animations, and other features in smartphones makes learning more exciting and engaging, avoiding frustration, and enabling learners to absorb the learning material more easily.

Talking of education, Islamic Religious Education (PAI) is one of the subjects that can be found in many educational institutions in Indonesia (Zh, Ardiansyah, & Dewi, 2022). PAI is an essential element of the educational curriculum at all levels of the national education system. The purpose of this is to provide students
with the necessary knowledge, comprehension, experience, and application of Islamic teachings derived from its fundamental sources, namely the Quran and the Hadith. These efforts are carried out through guidance, teaching, training, and the application of learning experiences.

Islamic education focuses on developing students' cognitive, emotional, and psychomotor skills to foster their religious consciousness (Chanifah et al., 2021). A significant number of students describe PAI as a complex subject, mostly due to factors such as ineffective teaching methods, diverse instructional materials, and the extensive breadth of the PAI curriculum (Nusroh & Ahsani, 2019). Given these challenges, mobile learning is considered a viable method to address the issues encountered in the PAI learning process.

The conviction in the efficacy of mobile learning to address challenges in the domain of formal Islamic education is closely intertwined with the positive impact it offers. While there is a limited number of literature research discussing mobile learning as the future technology for Islamic Education, numerous earlier researches showed the effectiveness and advantages of mobile learning. A research conducted by (Nasution et al., 2021) indicates that mobile learning enhances the accessibility of learning materials, enabling students to learn at their convenience and location based on their individual requirements. In addition, research by (Cahyanto et al., 2021) shows that the use of mobile learning can increase student engagement in learning, due to interactive features and the use of attractive multimedia. The ability to personalize learning is also one of the advantages of mobile learning, as highlighted in a research by Ningshardjanti et al., (2020), who noted that mobile learning allows teachers to present learning materials according to students' individual learning styles. Thus, mobile learning not only facilitates more inclusive and affordable learning, but also increases student engagement and personalization of learning according to students' needs.

To ascertain the progress, difficulties, and efficacy of mobile learning in the PAI learning process, the researcher will employ a literature review approach, wherein the author will conduct a search for and evaluate various relevant previous research. The utilized research sources are recorded in both national and international journal indexes. Following collection, research journals conduct dissection or evaluation through the use of Systematic Literature Review (SLR).

2. METHODS

This study is a comprehensive overview, namely a Systematic Literature Review. By utilizing the 4 stages of Systematic Literature Review (SLR), one can obtain a synthesis of accurate and relevant academic literature that aligns with the research problem at hand (Moher et al., 2010). The subject of this research is mobile learning media in the context of Islamic formal education. The selection of mobile learning-based teaching in Islamic Religious Education (PAI) in this study is justified by the following reasons: a variety of purposes is to determine the extent of the development, feasibility, and effectiveness of mobile learning in the learning process.

Before conducting a review, it is essential to formulate research questions that will be subject to review. Specifically, RQ1. What is happening with the development of mobile learning in the area of Islamic religious education? RQ2. What is the viability and efficacy of mobile learning in the context of formal Islamic religious education? RQ3. What challenges and obstacles arise when trying to implement mobile learning in the context of formal Islamic religious education?

The stages of the research were conducted using a Systematic Literature Review (SLR). The literature review phase begins with:

a. Article Search: The articles chosen for review were gathered from various sources, including Research Rabbit, Google Scholar, Publish or Perish (POP), and Litmap. The initial step to get useful data for research is a literature search. The research begins by searching for relevant literature on the research subject.

b. Criteria selection: This study concentrates on conducting a search using the terms efficacy, development, mobile learning, and Islamic religious education for review.

c. Quality Assessment: This discussion is based on an article or journal published by Open Journal Systems (OJS), which has a good reputation. The researchers restrict the search for articles to those with a
minimum S4 index (Sinta 4). Subsequently, the research is conducted on the issues raised by the author by reviewing the title, followed by the abstract to ascertain the quality and relevance of the literature.

d. Data Extraction: In the data extraction phase, 13 journals were selected based on the author's chosen problem, which is about mobile learning-based instructional media in the subject of Islamic religious education. The selection was made from the past 5 years, specifically between 2018 and 2023. It includes a total of 13 journals, with 5 of them written in English and 8 written in Indonesian.

### 3. RESULTS & DISCUSSION

The analysis of the scientific article reveals that 13 journals have been identified, which are relevant to this research and focus on mobile learning in Islamic religious education. The assessment of the 13 journals revealed that 4 of them employed experimental methods, 1 journal used quantitative descriptive methods, 4 journals utilized Research and Development (R&D) methods, 2 journals employed qualitative methods, 1 journal employed a mixed method approach, and 1 journal employed a systematic review method. To enhance the findings of the review, the author incorporates several pertinent books that are directly related to the study subject.

#### Table 1. Data Extraction Results

<table>
<thead>
<tr>
<th>No</th>
<th>Author/year</th>
<th>Title</th>
<th>Journal</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Hamdani, 2021)</td>
<td>Enhancing Students’ Learning Motivation and Knowledge: Implementing Mobile Learning in Islamic Religious Education</td>
<td>Jurnal Pendidikan Agama Islam Al-Thariqah</td>
<td>Proving the impact of implementing mobile learning on the improvement of learning motivation and knowledge of students at SMK Negeri Samarinda.</td>
</tr>
<tr>
<td>2</td>
<td>(Ahmadi, 2022)</td>
<td>The Effect of Online Learning Assisted by Learning Videos to Improve Learning Outcomes of Islamic Religious Education Subjects Moderated by Student Learning Motivation</td>
<td>Jurnal Nalar Pendidikan</td>
<td>Knowing the effectiveness of online learning assisted by Zakat video to encourage learning of grade VI content students to improve learning outcomes of Islamic religious education subjects.</td>
</tr>
<tr>
<td>3</td>
<td>(Nawawi, 2019)</td>
<td>Mobile learning based on Html 5 in Islamic Religious Education Subjects</td>
<td>Jurnal Perspektif</td>
<td>Examining the efficacy of implementing HTML 5-based mobile learning to enhance student academic performance in PAI subjects.</td>
</tr>
<tr>
<td>6</td>
<td>(Kusuma et al., 2022)</td>
<td>The impact of mobile application-based media learning on students' learning motivation</td>
<td>International Journal of Evaluation and Research in Education</td>
<td>Understanding the learning conditions during the pandemic and the development of mobile application-based learning media.</td>
</tr>
<tr>
<td>No.</td>
<td>Authors</td>
<td>Title</td>
<td>Conference/Proceedings</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>7</td>
<td>Yusro et al., 2022</td>
<td>The utilization of m-PAI as a mobile learning media for Islamic Religious Education courses at Universitas Negeri Jakarta.</td>
<td><em>Proceedings of the 5th International Conference on Current Issues in Education (ICCIE 2021)</em></td>
<td>Developing mobile learning for Islamic Education and assessing its suitability at Universitas Negeri Jakarta</td>
</tr>
<tr>
<td>8</td>
<td>Hanafi, 2019</td>
<td>Designing an Islamic Religious Education Learning Media based on an Android Application for Grade XI Vocational High School Students, focusing on the topic of Funeral Management.</td>
<td><em>Atthulab</em></td>
<td>Developing PAI learning material using an Android application with the topic of funeral management.</td>
</tr>
<tr>
<td>9</td>
<td>Sibilana et al., 2020</td>
<td>Mobile learning Development Based on Android Application for Islamic Education</td>
<td><em>Letters in Information Technology Education (LITE)</em></td>
<td>Developing an Android-based learning media for Islamic religious education subject in grade XI at SMA Negeri 2 Malang.</td>
</tr>
<tr>
<td>10</td>
<td>Kulbi, 2019</td>
<td>Android-based Mobile Learning as a media for Islamic Religious Education</td>
<td><em>Nazhruna: Jurnal Pendidikan Islam</em></td>
<td>Describe Android-based mobile learning as a learning medium for Islamic religious education in vocational schools.</td>
</tr>
<tr>
<td>11</td>
<td>Zakaria et al., 2020</td>
<td>Integrating 21st Century Skills in the Teaching and Learning of Islamic Education: An Innovative Approach</td>
<td><em>ICOCIT-MUDA</em></td>
<td>Investigating the feasibility of utilizing mobile technology in the area of Islamic education. Outline the difficulties and obstacles encountered by users in their quest to locate resolutions for these issues.</td>
</tr>
<tr>
<td>13</td>
<td>Salsabilla et al., 2021</td>
<td>The Benefits of Technology for Islamic Education Subjects During the Covid-19 Pandemic</td>
<td><em>Edunesia : Jurnal Ilmiah Pendidikan</em></td>
<td>Examining the advantages of utilizing technology for PAI individuals within the Covid-19 epidemic.</td>
</tr>
</tbody>
</table>

RQ 1 : Development of Mobile Learning in Islamic Religious Education Area.

Mobile learning is a development of the concept of E-learning, encompassing computer-based, web-based, and virtual classroom learning. There are various types of mobile learning that can be developed in the learning process, such as applications, mobile websites, hybrid applications, and E-Books. (Reiser & Dempsey, 2018).

Media development refers to the systematic process of either producing new media or enhancing existing media by conducting a thorough analysis of demands. Media functions as a means of transmitting messages from a sender to a recipient and functions as educational material to enhance the process of learning. The adoption and advancement of mobile learning became prevalent with the onset of the global covid-19 pandemic. (Aeni et al., 2022). Despite the widespread use during the COVID-19 pandemic, mobile learning can still be seamlessly integrated now, in accordance with the assessment of technological advancements and the current characteristics of students. In the area of Islamic education, numerous endeavors have been conducted to develop mobile learning and incorporate it into the educational process. These include the creation of android-
based applications, HTML-based mobile learning, mobile-based movies, digital Qur'an development, and the production of e-books. (Kusuma et al., 2022; Salsabilla et al., 2021; Sibilana et al., 2020; Yusro et al., 2022).

The research undertaken by Yusro et al., (2022) focused on developing learning media using the M-PAI application. This program was created in response to the rapid advancement of the digital world, with the purpose of enhancing the student learning experience. In order to develop this media, researchers utilize the ADDIE model by including software, namely Android Studio 4.0.1 for the development of mobile applications, and Microsoft Visual Code as an editor for the creation of web applications.

In addition, Hanafi (2019) did research that resulted in the development of an android application specifically designed for managing corpse-related materials. This development was undertaken with the aim of generating a cutting-edge learning innovation by including the utilization of mobile devices. In the development of this product, researchers employed the ADDIE approach, utilizing Adobe Flash Pro CS 6.0 with the action script 3.0 programming language, which was backed by Adobe Air as the primary software. Furthermore, researchers employ supplementary software applications such as Adobe Photoshop, Adobe Premier, and Any Video Converter.

Furthermore, in the research conducted by Sibilana et al., (2020), an Android-based application titled "Awaken and Rise, Islamic Warriors" was developed. This development is carried out due to the widespread use of mobile devices by students in schools, with nearly all students at SMAN 2 Malang owning a mobile device, reaching a 99% index. This research was conducted using the Borg and Gall development methodology, utilizing Adobe Flash CS 6 action script 3.0 as the main software tool.

In their recent study titled "Mobile application-based media learning and its effect on students' learning motivation," Kusuma et al., (2022) developed a learning application in response to the widespread transmission of the COVID-19 virus throughout that year, which significantly disrupted the mobility of learning activities. This application is designed as a precise solution for innovative and creative learning for Gen Z. The development is carried out using the Alessi and Trollip development process, which consists of 3 stages: planning, design, and product development. The application is developed using three supporting software, including designing the application with Powerpoint, then converting it to HTML5 using Ispring Suite 9, and finally converting it into an application using WEB2APK builder.

From various forms of mobile learning that can be developed, it can be concluded that Android-based applications have dominated development in the past 5 years. The development of Android-based applications has been fueled by the evolving trends in technology utilization and the complexity inherent in these applications. Additionally, the availability of easily accessible software for application development further supports this growth.

RQ 2: The Feasibility and Effectiveness of Mobile Learning in Islamic Religious Education.

Based on the analysis of literature review on 13 journal articles, it is found that the use of mobile devices or media can be considered effective in supporting formal Islamic religious education. This is supported by findings from the analysis of 13 articles, which indicate a positive effect of mobile devices on PAI learning activities.

Mobile learning is a versatile media that can be used in various educational contexts, including Islamic religious education (PAI). Mobile learning is considered suitable for facilitating learning activities because of its various advantages. (Hanafi, 2019; Kusuma et al., 2022; Sibilana et al., 2020; Yusro et al., 2022). In addition to being appropriate to use in mobile learning activities, it may also enhance the effectiveness of learning in terms of various aspects and learning objectives. According to a study conducted by Hamdani (2021), it is found that mobile learning can enhance the effectiveness of learning, as evidenced by its significant impact on students' motivation and knowledge. The impact on students' learning motivation increased by 34% in the middle category, while the increase in students' knowledge was 70% in the high category. This increase is caused by the stimulation and appeal of the devices provided by mobile learning to students.

Furthermore, in a study conducted by Nawawi (2019), HTML 5-based mobile learning is utilized in the PAI learning process for the thaharah subjects. The results indicate that student learning outcomes in the subject
of Thaharah can be enhanced by the utilization of HTML 5-based mobile learning. Also, in the research conducted by Ahmadi (2022), it was found that distance learning assisted by mobile-based video learning, moderated with good student motivation, can enhance student learning outcomes if the videos are infused with creative and adaptive innovations to maximize student learning results.

The positive outcomes provided by mobile learning extend beyond only enhancing student motivation and learning outcomes. According to the study conducted by Muanas et al., (2021), it is known that mobile learning has an impact on students' self-directed learning, as evidenced by an average research result of 76%. Furthermore, in a study conducted by Purwowidodo (2023), it is said that one type of mobile learning that may be utilized in the learning process is M-learning-E-Book. The implementation of M-learning-E-Book is still not widely conducted by researchers in Indonesia, and their studies are limited to examining the impact of this model on students' learning outcomes. The research findings indicate that M-learning-E-Book has a significant impact on the achievement of higher-order thinking skills, retention, and learning motivation. Furthermore, it demonstrates that M-learning-E-Book is one of the suitable learning alternatives that meet the demands of the 21st century.

Based on the previous studies, it is understood that combining mobile learning into the PAI learning process presents efficiency and effectiveness to students, as demonstrated by the enhancement of student learning motivation, learning outcomes, critical thinking skills, and independent learning abilities.

RQ 3 : Challenges in Implementing Mobile Learning in Islamic Religious Education

Although the implementation of mobile learning for the subject of Islamic Religious Education presents various advantages, both students and educators commonly face some challenges in harnessing its potential. In a study conducted by Kulbi (2019), it is mentioned that several challenges can be encountered in the mobile-based learning process, including: 1) The need for vigilant supervision from teachers to avoid the inappropriate utilization of mobile-based media, such as engaging in gaming activities. 2) The internet network sometimes presents challenges, impeding the learning process. 3) The time available for learning through mobile learning platforms is limited in comparison to PAI learning since educators and students may lack proficiency in information technology. Furthermore, there are parents who view the incorporation of android devices in PAI learning as detrimental and express their disapproval towards mobile learning. They harbor concerns that children may exploit android technology for malicious intentions.

Another challenge frequently encountered in implementing mobile learning in Islamic religious education (PAI) is the insufficient competence of teachers in creating and utilizing technology-based media, which leads to many teachers relying solely on printed books as the primary medium (Hamdani, 2021; Zh, Ardiansyah, Dewi, et al., 2022). In addition, Reiser & Dempsey (2018) state that an essential characteristic of m-learning is its reliable connectivity, meaning that mobile devices used for m-learning must have the ability to connect to a network or the internet with a reliable connection. This can be achieved through cellular networks, wi-fi, or cable connections. Furthermore, it is important to note that m-learning cannot be effectively incorporated or executed in educational settings that are disadvantaged, such as areas classified as 3T regions.

The challenges in implementing m-learning in the process of PAI learning can be prevented through several solutions, such as organizing workshops for teachers on the application or development of mobile learning in the era of education 4.0, and educators can consider mobile learning as an alternative in selecting a learning model by adapting to the characteristics of the material.

4. CONCLUSION

From the various discussions above, it may be concluded: the discussions above, it becomes evident that mobile learning has undergone extensive development within Islamic Religious Education, embracing various formats like Android-based applications, HTML-based modules, mobile videos, digital Quran tools, and e-books. Despite the diversity, the predominant focus in the past half-decade has shifted towards the complexity of Android-based m-learning solutions. The integration of mobile learning in teaching PAI has proven advantageous, fostering increased student motivation, improved learning outcomes, enhanced critical thinking, and self-directed learning capabilities. While mobile learning holds promise for enriching official Islamic religious education, its successful implementation necessitates addressing potential challenges. Accessibility stands out as a major
obstacle, particularly in disadvantaged educational settings such as 3T regions. Despite this hurdle, the anticipated positive impact of m-learning on Islamic religious education remains promising. Looking ahead, it is expected that researchers will continue to explore the broader implications of mobile learning beyond the realm of PAI, extending its potential to address various educational challenges.

5. ACKNOWLEDGMENTS

The author extends appreciation to everyone who contributed to the writing process, including the Master's lecturers in Educational Technology at Universitas Negeri Malang, fellow students from the Educational Technology Master's program at Universitas Negeri Malang in 2023, the Indonesia Bangkit-LPDP Scholarship which provided support throughout the course, and particularly to the entire Heutagogy Team for their constant companionship in every circumstance.

REFERENCES


