UTILIZATION OF DIGITAL MEDIA FOR ISLAMIC RELIGIOUS EDUCATION LEARNING BASED ON DIGITAL INTELLIGENCE (CERDIG) AT SMPI DARUNNIYAHJETIS

Irman Maulana[1], Ainul Yaqin[2], Muhammad Ali Rohmad[3]
Universitas Islam Majapahit
Email: maulanairman61@gmail.com [1], ainulyaqin@unim.ac.id[2] , alirohmad86@unim.ac.id[3]

Abstract

This study aims to develop and evaluate the effectiveness of digital learning media based on the Cerdig application in Islamic Religious Education (PAI) at SMPI Darunniyah Mojokerto. The media development method, through the stages of needs analysis, design, development, implementation, and evaluation, was carried out on students in grades VII to IX during the even semester of the 2024/2025 academic year. The results showed that the Cerdig learning media was able to significantly increase student interest and learning activities with the support of interactive features such as video, audio, quizzes, and discussion forums. Teachers and students responded positively to the use of this media, despite technical constraints such as limited internet network access and teacher skills in operating the application. This media has proven valid, practical, and effective in supporting PAI learning, while strengthening communication and collaboration between teachers and students. Teacher training and digital infrastructure support are key factors in ensuring the success of this application. This study recommends the development of more responsive features and the integration of Islamic character values to optimize digital-based learning and make it more relevant to students' needs.

Keywords: *Digital Learning Media, Islamic Religious Education, Cerdig, Interactive Learning, Educational Technology, Learning Effectiveness, SMPI Darunniyah*

Introduction

The Industrial Revolution 4.0 and Society 5.0 have had a significant impact on the current education system. Rapid changes coupled with increasingly complex human needs require education to be aligned to address all current challenges (Hasrul et al., 2019). Education in the Industrial Revolution 4.0 era is a phenomenon that addresses the needs of the Industrial Revolution by adapting new curricula to the current situation. This aligns with the nation's projection to welcome Indonesia's Golden Generation in 2045 (Ministry of Education and Culture, 2019). To achieve and realize this projection, education must be the primary tool for human development in Indonesia (Mulyasa et al., 2021). Improving the quality of human resources can begin through an educational process that encompasses cognitive abilities and psychomotor skills (Enneking et al., 2019). The national education system is certainly required to undertake reform efforts towards competitive and innovative education by updating programs and current learning media (Waty et al., 2023). One example is Islamic Religious Education (PAI) learning. In Indonesia, Islamic Religious Education (PAI) is a subject that plays a central role in character building and religious understanding for students (Hafiz & Mu'ti, 2024). Islamic Religious Education is an important education to be provided from an early age, as it directly relates to students' faith and morals, as well as aspects of Islamic worship (Maemonah et al., 2020). In general, Islamic Religious Education is often taught using conventional lecture methods that tend to be monotonous. However, in practice, students require a more innovative and creative learning approach, beyond simply internalizing Islamic values (Hasan & Hamid, 2021). This condition can cause students to feel bored and less active in participating in the learning process. Based on the research of Ayu et al., (2022) who conducted research in elementary schools, it was found that 71% of students lacked enthusiasm in participating in conventional learning, which can lead to boredom and lack of attention during the learning process. This occurs because the learning process is less interesting. Uninteresting Islamic Religious Education (PAI) learning can have a negative impact on learning

outcomes and learning quality, which ultimately affects the achievement of the main objectives of PAI learning itself. This is where technology can play an important role in developing more innovative and effective learning media. One use of technology in the field of education is through the development of learning media. Learning media is an important component in learning activities because it functions as a means of conveying messages to students, either through tools, individuals, or teaching materials (Hasrul et al., 2019). The use of this media can also stimulate and increase the effectiveness of student learning. Thus, learning media plays a role in arousing students' enthusiasm and motivation to learn, because learning motivation is an internal drive that encourages students to achieve predetermined learning objectives. One use of learning technology is the development of media based on Cerdig (Digital Intelligence). The Smart Digital Application (Cerdig) is a responsive web-based platform accessible through various devices such as Android, iOS, desktop computers, and laptops. The main objective of this application is to improve the quality of learning by utilizing information and communication technology (Kemendikbud, 2017).

Furthermore, Cerdig also provides an automatic notification feature that allows parents to monitor their children's attendance and academic progress. This application is designed to support the involvement of all parties in the educational process. With the spirit of school digitalization and educational economic empowerment, Cerdig believes that inclusive education can be realized more easily if supported by facilities and sustainable support that are equitable for all levels of society, especially in the field of education. This is in line with research conducted by Nasir (2020), who developed web-based Islamic Religious Education (PAI) learning media. The research showed that the developed media was valid and worthy of being tested. The results showed that: (1) student activities in learning ran optimally as expected, (2) teachers provided very good responses, and (3) students responded well to the media. A similar study was conducted by Maemonah (2020) who developed flashcard media for learning verses on tolerance in PAI at SMAN 1 Getasan, Semarang Regency. The results showed a significant increase in student learning outcomes. Meanwhile, Waty's (2023) research on the development of interactive e-learning-based learning media using the ClassPoint application also showed that the integration of web-based PowerPoint and Android connected to ClassPoint made the learning process more enjoyable and helped students achieve learning objectives better.

Research methods

This study uses the ADDIE quantitative research and development method, which aims to produce a website that can be applied in Islamic Religious Education (PAI) subjects. The development model used in this study refers to the model developed by S. The research model used is the ADDIE research and development model (Analysis, Design, Development, Implementation, and Evaluation), which is explained as follows. stage First, Analysis focus on identification need learning And analysis problem Which faced student in understand material Education Religion Islam (PIE). Analysis This done through survey or interview with student And Teacher For know difficulty Which experienced in learning PIE as well as aspects Which need repaired. Besides That, stage This Also aim For determine objective learning Which in accordance with need student in understand values Islam in a way more interactive through application Cerdig.

After analysis done, stage Design started with designing structure And content learning based application Cerdig. Design This covering compilation plan learning, election element interactive Which in accordance, as well as determination method evaluation Which appropriate. Material PIE will served in form Which interesting with feature interactive, like animation, quiz, And simulation, use increase interest And understanding student to draft Islam. Besides That, design application Also customized with characteristics student so that can used in a way effective in process learning. On stage Development, design Which has arranged realized in form application Cerdig. Development application This done with add various element interactive, like audio, video, And animation, For increase involvement student in learning. Process This Also covers test try beginning For ensure that application walk with Good And in accordance with objective learning. Revision done based on results test try use increase quality And effectiveness media learning.

After application Cerdig finished developed, stage Implementation done with try out application to student in class as part from process learning PIE. Testing This aim For see as far as where application can help student understand material Islam with more Good. Besides That, test try Also used For gather bait come back from student And Teacher use perfect feature And content in application. Stage final is Evaluation, Which aim For evaluate effectiveness And quality application Cerdig in support learning PIE. Evaluation done through measurement results Study student, analysis feedback from users. Process This ensure that application No only worthy used but Also can give impact positive in increase understanding student to values Islam.

Results and Discussion

The Cerdig digital media development process involved several key stages, from needs analysis, media design, development, implementation, and evaluation. The process was conducted in grades VII through IX during February and March 2025. The needs analysis revealed the need for more engaging and technology-based learning methods, given the characteristics of Generation Z students who are familiar with digitalization. Teachers encountered several obstacles in operating the application, such as limited internet access and varying experiences in adapting to technology. The development of the Learning Implementation Plan (RPP) incorporated the use of digital media, specifically the Cerdig application, as the primary learning resource in the classroom. The implementation of this media utilized group discussions and interactive activities that actively engaged students. However, teachers recognized the need to integrate strong Islamic character values so that the media did not diminish the moral development of students. Therefore, the use of digital media must be adapted to the conditions and needs of students for effective learning.

The menus and features in the Cerdig app are designed to meet digital learning needs, including school statistics dashboards, student data management, academics, online attendance, assignments, digital exams, and announcements. One of the featured features is the LMS, which allows online management of learning materials with files, videos, and digital modules. The educational quizzes provided in the app have proven effective in increasing student engagement with the learning material due to their fun and non-stressful nature. Despite the various features available, limitations remain, such as a grading system that does not yet support rubrics or direct multimedia feedback. Furthermore, the app is not yet fully responsive to smartphones and still lacks optimal Islamic interactive features such as gamification of moral values. These limitations are the focus of future development so that the app can better cover all aspects of learning and enhance the student experience. With its comprehensive features, this app provides a strong foundation for the development of digital learning media at SMPI Darunniyah.

Evaluation of the results of the use of the Cerdig application showed a positive response from teachers and students who gave very good scores for the aspects of interest, color, sound, and images in the learning materials. Teachers appreciated the ease of the online attendance process, distribution of materials, and evaluations that are automatically integrated in the application. Students tend to be active and enthusiastic in learning activities supported by digital media, so that class activities take place more dynamic and interactive. Student responses to the learning media showed 46.2% in the very good category and 49% in the good category, which means that media acceptance is quite high. This shows that digital media is able to meet students' learning needs in today's digital era. High learning activity also shows that this media can motivate increased interest and focus in learning Islamic Religious Education (Ramli et al., 2013). This digital media really helps students understand Islamic Religious Education material in an easier and more enjoyable way (Ramli et al., 2013).

The use of the Cerdig application in Islamic Religious Education (PAI) learning also has a positive impact on developing communication and collaboration skills between students and teachers through discussion forums and two-way interactions (Sugianto et al., 2023). With easy access to materials at any time, students can learn more flexibly and independently without being tied to face-to-face meetings (Sugianto et al., 2023). The learning process becomes more lively because teachers and students can ask and answer questions effectively through digital technology (Sugianto et al., 2023). However, obstacles remain related to unequal access to technology and infrastructure, preventing some students from optimally utilizing the media. Teachers' readiness to operate the application also varies, making training and mentoring crucial. This is reinforced by teachers' statements admitting to waiting for training on introducing digital media to bridge the technological gap between older and younger teachers. Therefore, synergy between schools, the government, and parents is needed to maximize the implementation of this digital learning media.

Although the Cerdig application enriches Islamic Religious Education (PAI) learning, there are pedagogical challenges that must be considered to ensure Islamic values and character are maintained throughout the learning process. Islamic Religious Education demands a sensitive approach to moral aspects, not just the technical delivery of knowledge. Learning media must be able to touch students' affective domains so that Islamic teachings are well-absorbed and sustained (Ramli et al., 2013). The use of digital media must not diminish the ethical and spiritual values that are at the core of religious learning. This challenge is a crucial concern to ensure that technology can support the formation of a holistic Islamic character. Therefore, application development must be accompanied by content that aligns with local religious and cultural values. A balanced approach between technology and Islamic values will improve the quality of education at SMPI Darunniyah as a whole (Ramli et al., 2013). From a technical perspective, the use of digital learning applications faces significant obstacles in the form of unequal distribution of internet networks and supporting devices among students. This situation makes it difficult for students in areas with poor network coverage to optimally participate in online learning. Therefore, the development of learning media

must consider accessibility and ease of use to prevent digital discrimination. Furthermore, applications must be designed to be lightweight with intuitive features so they can be accessed by all groups with varying digital literacy skills. Teacher training is key to enabling them to use these media effectively in the teaching and learning process. The government and schools need to implement ongoing programs to support teachers in adapting educational technology. Support from various parties will accelerate the successful implementation of digital-based learning such as Cerdig. The development of Cerdig-based Islamic Religious Education (PAI) learning media at SMPI Darunniyah received a significantly positive response from teachers and students. This is evident from evaluations that show the media is valid, practical, and relevant for learning activities. Digital media allows for more interactive and engaging material delivery, which can positively influence student learning (Ramli et al., 2013). Increased learning activities and the quality of material understanding are indicators of the application's success. The use of multimedia in learning also effectively stimulates student learning motivation (Ramli et al., 2013). Students' minds are more engaged because the media is able to convey difficult material more easily understood. By utilizing digital technology, Islamic Religious Education (PAI) learning is more adaptive to current developments and student needs (Sugianto et al., 2023).

This study also emphasizes the importance of collaboration between teachers to develop targeted digital learning tools. The MGMP (School Leadership Forum) serves as an effective platform for developing digital-based lesson plans that are relevant and adaptable to individual school conditions. This collaborative approach minimizes errors and enhances the suitability of lesson plans to student characteristics and available resources. The success of digital media-based learning depends heavily on school preparation and teacher readiness to utilize these technological tools. Furthermore, adequate support from facilities and infrastructure, such as computers and internet access, is a key contributing factor. The fact that students are already familiar with gadgets presents an opportunity to align education with their digital lifestyles. With careful planning and comprehensive support, the objectives of digital media-based Islamic Religious Education learning can be effectively achieved. Overall, the development of Cerdig-based learning media at SMPI Darunniyah demonstrates more active, interactive, and adaptive learning in the digital era. Digital media has assisted teachers in learning activities and facilitated classroom management, such as attendance and material distribution. Digital learning also improves communication between teachers and students with interactive discussion forums and feedback features (Sugianto et al., 2023). Despite overcoming technical and pedagogical barriers, this application opens up significant opportunities in modern religious education. Continuous improvements to the application's features and training support are needed to optimize the use of digital media. With collaboration between all parties, religious learning technology can become more inclusive and effective (SMPI Darunniyah, 2025). Finally, Cerdig-based learning media has proven valid and practical in improving the quality of Islamic education at SMPI Darunniyah (Ramli et al., 2013).

Conclusion

The development of digital learning media based on the Cerdig application at SMPI Darunniyah has successfully increased students' motivation and learning activities in Islamic Religious Education (PAI) through an interactive approach that combines multimedia and digital technology. Despite obstacles such as limited internet access, teacher readiness in operating the application, and pedagogical challenges in upholding Islamic values, the positive response from teachers and students demonstrates that this media is valid, practical, and effective. Support for teacher training and the provision of adequate infrastructure are key to the successful implementation of digital learning at this school. With the cooperation of all parties and continuous feature development, the Cerdig application can be an innovative solution to improve the quality of religious education that is adaptive to current developments and student needs.

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