



# Journal of Educational Sciences

Journal homepage: <https://jes.ejournal.unri.ac.id/index.php/JES>



P-ISSN  
2581-1657

E-ISSN  
2581-2203

## Implementation of an Islamic Interactive Application as an Innovative Learning Media for Islamic Religious Education: A Qualitative Case Study at SMK I Setia Darma Palembang

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### ARTICLE INFO

#### Article history:

Received: 05 Dec 2025

Revised: 31 Jan 2026

Accepted: 27 Feb 2026

Published online: 05 March 2026

#### Keywords:

Islamic Interactive Application,  
Islamic Religious Education,  
Learning Media Innovation

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#### Article Doi:

<https://doi.org/10.31258/jes.10.3.p.249-262>

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### ABSTRACT

This study aims to describe the implementation of Islamic interactive applications as an innovative learning medium for Islamic Religious Education at SMK I Setia Darma Palembang. The background of this research is based on the need for learning that is adaptive to digital technological developments and capable of increasing students' interest in religious subjects. The study employed a qualitative approach with a case study design, involving teachers and students through interviews, observations, and documentation of learning activities. The findings indicate that the implementation of the Islamic interactive application enhances learning effectiveness by increasing students' motivation, active participation, and understanding of Islamic Religious Education materials. Interactive features such as learning videos, worship simulations, quizzes, and educational games support a shift from teacher-centered instruction to student-centered learning, with teachers acting as facilitators. The study also identifies several challenges, including limited technological devices, unstable internet connectivity, and teachers' adaptation in integrating the application into lesson plans. This study contributes empirical evidence that Islamic interactive applications can function as an effective digital learning model to integrate Islamic values with technological innovation, particularly within vocational school contexts.

## 1. Introduction

Digital transformation requires the learning process to adapt to the ways of thinking and learning styles of twenty-first century learners, who are closely associated with the use of technology (Samiha & Fauzi, 2025). Learning can no longer rely solely on one-way conventional methods, but must be able to provide interactive, creative, and contextual learning experiences (Ferdino et al., 2024). In this context, teachers

hold an essential role in innovating and creating learning media that can bridge the advancement of technology with the needs of students (Monika, 2023). The educational sector faces challenges in integrating digital technology into learning. Although students are highly interested in digital devices, their use has not been effectively directed toward educational purposes (Nugraha et al., 2024). Meanwhile, many teachers still apply conventional methods that limit student engagement, creating a gap between digital learning preferences and traditional instruction. This gap contributes to low motivation, minimal participation, and suboptimal learning outcomes, especially in Islamic Religious Education (Anitawati, 2024).

In the context of Islamic Religious Education (PAI), these problems become even more apparent. The PAI subject, which should serve as a medium for character formation and the cultivation of noble morals, is often less favored by students because its delivery methods are perceived as monotonous and inconsistent with the digital world they are familiar with (Hidayati et al., 2026). This condition indicates an urgent need to present innovative learning media that are not only visually appealing but also interactive and contextual to students' lives (Nurfadilah & Ariyani, 2025). The development of Islamic interactive application-based learning media is urgent to create enjoyable and meaningful learning experiences (Ayuni & Ritonga, 2025).

Such media allow students to engage in dynamic digital exploration with multisensory interaction and immediate feedback (Nufus et al., 2025). Features such as instructional videos, worship simulations, educational games, interactive quizzes, and engaging tafsir or hadith content make PAI learning more contextual and accessible to students' daily lives. Moreover, Islamic interactive applications have strong potential to foster spiritual awareness and religious character in the era of globalization and digitalization (Aastiqomah & Lismawati, 2023). As digital learning environments can be designed to reinforce values of faith, morality, and responsible technology use.

However, there exists a core problem or research gap that is compelling to examine, namely the still limited use of digital learning media in PAI instruction, particularly those based on Islamic interactive applications. Many schools already possess technological facilities such as computers and internet networks, yet they have not utilized them optimally for religious learning activities. Some teachers still encounter difficulties in selecting or developing Islamic applications that align with the curriculum and the characteristics of their students. In addition, there is still a lack of studies that specifically examine how the implementation of Islamic interactive applications operates within the context of vocational schools, where students tend to have more practical and contextual learning orientations.

This study addresses the existing research gap by examining the implementation of an Islamic interactive application as an innovative learning medium for Islamic Religious Education at SMK I Setia Darma Palembang. The study aims to analyze the implementation process, identify supporting and inhibiting factors, and explore teachers' and students' responses to its use in learning activities. The findings are

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expected to provide practical insights for teachers in developing engaging digital-based PAI strategies, support schools in strengthening infrastructure and teacher training, and contribute to academic discourse on the integration of Islamic values into digital learning.

## **2. Methodology**

This research adopted a qualitative descriptive design to investigate the use of an Islamic interactive application as an innovative learning medium in Islamic Religious Education at SMK I Setia Darma Palembang, South Sumatra, Indonesia. The qualitative approach was employed to gain a comprehensive and contextual understanding of how the application was implemented in classroom instruction, including teaching strategies, learning interactions, and challenges encountered by both teachers and students. This design allowed the study to explore learning practices and participant experiences within an authentic educational environment.

### ***Research Setting and Participants***

The study was carried out at SMK I Setia Darma Palembang, a vocational high school that applies digital learning media in Islamic Religious Education classes. Participants were determined through purposive sampling to ensure that the data obtained were relevant and information-rich. The informants included an Islamic Religious Education teacher who directly implemented the interactive application and students who actively engaged in learning activities using the application. These participants were selected due to their direct involvement in the preparation, execution, and experience of application-based learning, enabling the study to capture perspectives from both educators and learners.

### ***Research Instruments***

Data were gathered using semi-structured interview protocols, observation guidelines, and documentation records. The interview instruments were designed to explore instructional practices, learning objectives, perceived benefits, and difficulties related to the use of the Islamic interactive application. Observation tools were utilized to document classroom dynamics, patterns of application use, and levels of student participation during learning activities. Documentation encompassed lesson plans, application content and features, learning resources, and institutional documents relevant to Islamic Religious Education instruction.

### ***Data Collection Techniques***

Data collection was conducted through observations, interviews, and documentation. Classroom observations focused on Islamic Religious Education lessons in which the interactive application was used, aiming to capture authentic instructional practices. Semi-structured interviews were conducted with teachers and students, both during and outside class time, to obtain in-depth explanations of their experiences and perceptions regarding the application. Documentation served

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to complement observational and interview data by providing supporting information related to instructional planning and learning media.

### ***Data Analysis Techniques and Data Validity***

The data were analyzed using an interactive qualitative analysis process comprising data reduction, data organization, and conclusion formulation. Data reduction involved selecting, classifying, and simplifying information derived from observations, interviews, and documentation. The processed data were then organized in narrative form to facilitate interpretation. Conclusions were drawn by identifying recurring patterns and relationships associated with the implementation and perceived effectiveness of the Islamic interactive application in Islamic Religious Education learning. To ensure the credibility and trustworthiness of the findings, triangulation of data sources and research methods was applied. Interview data were compared with observation results and documentation to verify consistency and accuracy. This triangulation strategy enhanced the reliability of the findings and reduced the potential for researcher bias.

## **3. Results and Discussion**

### ***The Concept of Islamic Interactive Applications in Islamic Education Learning***

Islamic interactive applications represent a form of innovative learning media that integrates digital technology with Islamic values (A. T. I. Jannah & Hafidz, 2025). One example of an Islamic interactive application relevant for the vocational school level is Muslim Pro. This application is designed to support the process of Islamic Religious Education learning by providing various interactive digital learning features such as instructional videos, worship simulations, Islamic quizzes, and educational games based on religious values. Through its simple and easily accessible interface, Muslim Pro can increase students' interest in religious subjects and make learning activities more lively and enjoyable (Rahmah & Anam, 2025).

The Muslim Pro application possesses characteristics that align with the needs of vocational school students. First, its interactive nature enables students to participate actively in the learning process, not only as listeners but also as learners who are directly engaged. Second, the application utilizes a combination of multimedia elements such as text, images, sound, and videos, making it capable of bridging students' diverse learning styles. Third, all content within the application is designed based on Islamic values, from material presentation to activities that cultivate ethics and proper conduct in using technology. In addition, it is easily accessible through smartphones or computers, thus supporting flexible learning both inside and outside the classroom. These characteristics make Muslim Pro highly relevant for vocational school students who are already familiar with the digital world and in need of dynamic learning media.

The use of Muslim Pro as an innovative learning media also has a strong foundation in Islamic values. In Islam, every form of innovation, including digital innovation,

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must bring benefit and strengthen faith (Rochim & Sutiah, 2024). The implementation of Muslim Pro in PAI learning reflects the principle of *tawhid*, where technology is utilized as a means to draw closer to Allah through meaningful educational experiences. In addition, the application embodies the value of *'ilm* by fostering a spirit of lifelong learning and enabling students to access religious knowledge in ways that are relevant to contemporary developments. Muslim Pro also promotes Islamic digital ethics by guiding students to use technology responsibly, avoid unbeneficial content, and engage in positive digital behavior (Yulianti et al., 2024).

The relationship between technology and PAI learning becomes increasingly evident through the use of the Muslim Pro application in vocational schools (Permadi & Achadi, 2025). Digital technology enables PAI teachers to present learning that is more engaging, interactive, and participatory (R. Jannah & Jannah, 2024). For instance, when discussing themes of worship and morality, teachers can utilize the application's simulation features to visually demonstrate the procedures of prayer or ablution, so students do not only read the theory but also understand the practice concretely. In addition, the quiz features and Islamic games provided by Muslim Pro can be used to measure students' understanding directly in a way that is enjoyable and not monotonous. This helps create a learning atmosphere that is active and positively competitive.

Furthermore, the use of technology such as Muslim Pro helps make PAI learning more flexible and personalized. Students can access materials anytime and anywhere, according to their individual learning pace. Teachers can also assign tasks or assessments through the application, making the learning process more efficient and integrated with the digital environment. The use of this Islamic interactive application is also aligned with the spirit of the Merdeka Curriculum, which emphasizes project-based and experiential learning (Azzahra et al., 2025). By utilizing Muslim Pro, Islamic Education teachers can design learning activities that encourage collaboration, creativity, and reflection on Islamic values in students' daily lives.

Thus, the implementation of the Muslim Pro application at SMK I Setia Darma Palembang not only demonstrates the ability to adapt to technological advancements but also serves as a concrete form of educational innovation aligned with Islamic teachings. This application illustrates that technology is not a threat to religious values, but rather a strategic medium for strengthening faith, knowledge, and righteous deeds. Through Muslim Pro-based learning, students do not only understand Islamic teachings cognitively but also internalize religious values in their behavior. In other words, Muslim Pro becomes a bridge between the digital world and the spiritual world, between innovation and divine values that form the essence of Islamic religious education. In the context of this study, the conceptual characteristics of Islamic interactive applications are reflected in their practical implementation at SMK I Setia Darma Palembang. The application's multimedia and interactive features enabled students to engage more actively with Islamic learning materials, supporting the theoretical view that digital media can enhance meaningful and experiential learning. This finding suggests that the effectiveness

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of Islamic interactive applications lies not only in their technological features, but also in how they are pedagogically aligned with students' learning characteristics and religious values.

### ***Islamic Interactive Applications in the Implementation of Islamic Education Learning at SMK I Setia Darma Palembang***

The implementation of Islamic interactive applications in the teaching of Islamic Religious Education at SMK I Setia Darma Palembang proceeds through several planned stages that involve collaboration among teachers, students, and school management. The implementation of the Islamic interactive application in PAI learning at SMK I Setia Darma Palembang follows three main stages: planning, classroom implementation, and evaluation (Munji, 2024). In the planning stage, PAI teachers first participate in internal training facilitated by the school to understand how the Islamic interactive application works and the potential ways it can be utilized (Alamin et al., 2022). The application used includes various features such as worship simulations (prayer, ablution, almsgiving), instructional videos, digital exegesis, and interactive quizzes on creed and morality. Based on interviews with one of the PAI teachers, "we adjusted the lesson plan to integrate the use of this application into the learning activities. For example, in the topic of prayer, students not only listen to explanations but also practice through interactive simulations in the application." This indicates that teachers play a central role in adapting technology to align with the curriculum context and the needs of students in vocational schools.

In the next stage, during the implementation of learning, students used the application collaboratively during classroom and laboratory sessions due to limited technological devices. Based on observations and interviews, the learning atmosphere appeared more dynamic and participatory. Students actively interacted with the application, discussed the content, and enthusiastically attempted to answer the quiz questions. One student stated, "learning PAI becomes more enjoyable because there are animations and videos, so we understand better than just listening to lectures." This response illustrates that the use of the application not only enhances understanding but also fosters deeper learning motivation because the learning experience feels relevant to the digital world they are familiar with.

This finding indicates that the use of Islamic interactive applications shifts the learning process from teacher-centered instruction to student-centered learning. Students become active participants who explore, discuss, and reflect on Islamic content through digital media. This transformation occurs because interactive applications provide immediate feedback and visual representations, which help students better understand abstract religious concepts. Similar findings were reported by Jannah and Jannah, Rahmah and Anam, who emphasized that digital interactivity enhances engagement and comprehension in Islamic education. The Islamic Education teacher at SMK I Setia Darma also explained that the teacher's role has changed significantly since the application was introduced. Whereas previously the teacher was primarily the main source of information, they now serve as facilitators and guides. Teachers accompany students in exploring the

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application's features, provide additional explanations, and connect the application's content with real-life contexts (Fauzi & Mustika, 2022). Teachers also noted that the use of the application helps them identify students' levels of understanding more quickly through digital evaluation features that immediately display quiz results or practice outcomes. "We can easily see who has understood the material and who is still struggling, so our guidance can be more targeted," said one teacher. This approach aligns with the principles of differentiated instruction, which is a key characteristic of the Merdeka Curriculum, where teachers provide different forms of support based on each student's learning needs.

From the students' perspective, the implementation of this application provides a more personal and meaningful learning experience (Muamanah & Suyadi, 2020). Many students mentioned that they found it easier to understand abstract material, such as the concepts of faith, excellence (ihsan), and ethics, because it was presented through visual displays and interactive examples. In addition, students also felt more confident when given the opportunity to practice worship through digital simulations before performing it in real situations. In an interview, one student stated, "we can learn wudu and prayer correctly because we can directly see the steps in the application, and then the teacher guides us to correct any wrong movements." This indicates that the Islamic interactive application is capable of bridging the gap between theory and practice in Islamic Religious Education learning.

At the evaluation stage, the teacher used two approaches: digital evaluation through the application and conventional evaluation in the form of classroom reflection. The application provides quiz results automatically, while the teacher conducts discussion sessions to review students' understanding of the moral and spiritual values contained in the material. This evaluation not only measures cognitive abilities but also assesses affective and psychomotor aspects, such as religious attitudes and worship skills. The teacher assessed that the use of the application helps improve the effectiveness of evaluation because students' learning outcome data can be viewed directly and analyzed for further instructional improvement.

Nevertheless, the implementation process is not without challenges. Some students experienced technical obstacles such as slow internet connections or incompatible devices. However, collaborative spirit among students and the support of the teacher helped overcome these barriers. Students who were more technologically proficient typically assisted their peers so they could continue to participate smoothly in learning activities. In addition, the teacher creatively organized the schedule for using the computer laboratory so that all classes had equal opportunities to learn using the application.

Overall, the results of interviews with teachers and students indicate that the implementation of the Islamic interactive application at SMK I Setia Dharma Palembang has proceeded well and has had a significant positive impact on the teaching and learning process. Learning has become more engaging, participatory, and meaningful, while Islamic values remain preserved through a contextual digital approach. This success demonstrates that the use of technology does not have to

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distance students from religious values, but can instead become an effective medium for instilling spirituality, character, and morality within the context of twenty-first-century education.

### ***Supporting Factors in the Implementation of the Islamic Interactive Application at SMK I Setia Darma Palembang***

The successful implementation of the Islamic interactive application at SMK I Setia Darma Palembang did not occur by chance, but rather resulted from a synergy of various supporting factors that complemented one another. Based on the findings of the study, this success is sustained by three main elements, namely institutional support from the school, the competence and commitment of teachers, and the enthusiasm and active participation of students. These three factors form a learning ecosystem that is adaptive to technological innovation, while simultaneously maintaining the spiritual values and religious character that constitute the core of Islamic Religious Education.

From the perspective of institutional support, the role of the principal and the management of SMK I Setia Darma Palembang serves as the key foundation in realizing the success of this program. The principal provides full support for digital-based learning innovations, especially by integrating technology-oriented activities as part of the school's strategy to improve the quality of teaching and learning (Khairani et al., 2025). Institutional support from the school plays a crucial role in facilitating the implementation of the Islamic interactive application, particularly through policy support, provision of basic technological infrastructure, and encouragement of teacher collaboration in digital learning initiatives. The next supporting factor is the competence, creativity, and commitment of PAI teachers. Teachers at SMK I Setia Darma Palembang demonstrate a high level of enthusiasm in learning and developing Islamic interactive learning media. They serve not only as facilitators but also as innovators who continuously strive to adjust instructional strategies to the characteristics of digital-generation students (Sulistriani et al., 2021). Teacher competence and commitment serve as key supporting factors, as teachers demonstrate readiness to integrate interactive applications into PAI learning and adapt instructional strategies to students' digital learning characteristics.

Meanwhile, the positive response and active participation of students become one of the most significant factors in determining the success of the implementation of the Islamic interactive application at this school. Based on interview and observation findings, the majority of students demonstrated high enthusiasm in using the application. They felt that PAI learning had become more enjoyable, interactive, and less monotonous compared to conventional instruction. Students' positive responses and active participation significantly support the successful implementation of the Islamic interactive application, as increased engagement and motivation enhance the effectiveness of digital-based Islamic learning.

In addition, a supportive school environment and parental encouragement contribute to the sustainability of digital-based Islamic learning practices

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(Baharuddin et al., 2025). Teachers support one another in using the application, while technologically skilled students assist their peers who still face difficulties. This sense of togetherness strengthens responsibility and the spirit of collective learning within the school community. Moreover, several religious extracurricular activities such as Rohis (Islamic Spirituality) have begun utilizing the interactive application for faith and moral development activities, including daily worship journals and digital Qur'an recitation, which further extends the benefits of the application beyond formal learning activities.

Another equally important factor is the integration between curriculum and technology. The school and teachers strive to align the use of the application with the learning objectives of the Merdeka Curriculum, which emphasizes project-based learning and the strengthening of the Pancasila Student Profile (Yansah et al., 2023). In the context of this, the interactive application is used as a medium to foster values of religious devotion, cooperation, and independence through reflective and participatory activities. Thus, learning does not merely produce cognitive understanding of Islamic teachings but also encourages the internalization of spiritual values in students' daily lives. Finally, the support of parents and the surrounding community also contributes to strengthening the success of the application's implementation. The school conducts outreach to parents to encourage them to support digital learning activities at home by granting permission for the responsible use of devices. Moral support from families motivates students to engage with digital media in a positive and productive way. This parental involvement also assists the school in monitoring students' device use so that it remains within the context of Islamic learning.

These supporting factors demonstrate that the success of digital-based Islamic learning is not solely determined by technology availability, but also by institutional commitment and teachers' pedagogical readiness. This finding supports previous studies emphasizing that technological innovation in education must be accompanied by supportive policies and human resource development. Overall, the successful implementation of the Islamic interactive application at SMK I Setia Darma Palembang is the result of strong cooperation among the school, teachers, students, and the surrounding community. The combination of policy support, the readiness of human resources, and high student motivation creates an innovative, relevant, and meaningful model of PAI learning. These findings demonstrate that when digital innovation is integrated with a collaborative spirit and spiritual values, religious education can develop into a more dynamic, contextual, and impactful approach to character formation in the modern era.

### ***Inhibiting Factors and Their Solutions in the Implementation of the Islamic Interactive Application at SMK I Setia Darma Palembang***

The implementation of the Islamic interactive application in PAI learning at SMK I Setia Darma Palembang is not free from various obstacles that emerged throughout the implementation process. These obstacles are both technical and non-technical in nature and affect the smooth use of the application in teaching and learning activities. Based on interview and field observation data, three main

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challenges were encountered by teachers and students, namely the limitations of technological facilities, the stability of the internet network, and the teachers' ability to integrate the application into instruction.

First, the most dominant obstacle is the limitation of technological devices. Not all students possess personal gadgets that support the interactive application, and the school's computer laboratory facilities also have a limited number of devices. This condition requires learning activities to be conducted alternately or in groups. Such limitations affect the optimal opportunity for students' individual learning and require better time management in the learning process. Second, the instability of the internet network quality becomes a recurrent technical hindrance. The Islamic interactive application, particularly those based on videos and visual simulations, requires a reliable internet connection to function optimally. When the network is slow or unstable, the learning process becomes disrupted and reduces students' concentration and enthusiasm. This situation also requires teachers to have alternative preparations in case the application becomes inaccessible online.

Third, there are challenges related to teachers' competencies concerning digital literacy and the integration of the application into learning design. Although some teachers are able to operate the application, they are not yet fully accustomed to developing lesson plans and structured learning scenarios that are grounded in the use of interactive applications. Teachers still require guidance in maximizing the application's features so that it functions not merely as a supplementary tool but becomes an integral part of the learning process. To address these challenges, the school and teachers implemented several strategic solutions.

First, the school provides a structured schedule for computer laboratory use to ensure that all students receive equal opportunities to access the application. Additionally, students who own personal devices are encouraged to share and collaborate with other group members, thereby fostering a cooperative learning environment. Second, the school strives to improve internet network quality by adding more Wi-Fi access points and regulating bandwidth allocation to support learning activities. Teachers also prepare backup materials such as videos or offline modules to anticipate potential disruptions in accessing the application. Third, training and mentoring programs are conducted for teachers to enhance their digital competencies, both through internal school workshops and collaborations with external parties such as universities or technology-based education communities. These challenges indicate that the implementation of Islamic interactive applications is an adaptive process rather than an instant transformation. Technical limitations and teachers' digital literacy constraints reflect common barriers in technology integration, particularly in religious education contexts. However, the adaptive strategies adopted by the school demonstrate that gradual institutional support and continuous teacher training can mitigate these challenges and sustain digital innovation in Islamic learning.

These training sessions help teachers understand the pedagogical not merely technical use of the application, allowing it to be integrated effectively into learning objectives and assessment of Islamic learning outcomes. With these efforts, the

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implementation of the Islamic interactive application at SMK I Setia Dharma Palembang can proceed more optimally and sustainably. The challenges that arise no longer become major barriers but instead form part of the adaptation process toward PAI learning that is more innovative and aligned with the developments of the digital era.

### ***Implications of the Implementation of the Islamic Interactive Application on Students' Character Formation and Spiritual Values***

The implementation of Islamic interactive applications at SMK I Setia Dharma Palembang has generated significant impacts, not only in improving students' cognitive understanding of Islamic Religious Education but also in fostering their character and spiritual development (Nurfajriani et al., 2024). The application facilitates the internalization of Islamic values through learning approaches that are more contextual, relevant, and aligned with students' digital lifestyles. Features such as worship simulations, reflective videos, Islamic value-based educational games, and case-based interactive activities enable students to move beyond theoretical understanding and apply religious teachings in their daily lives.

The Islamic education teachers explained that since the application's implementation, noticeable positive behavioral changes have appeared among students in the school environment. Students have become more disciplined in performing worship activities such as congregational prayers in the school's prayer hall, more polite in interacting with teachers and peers, and more responsible and honest in both academic and non-academic activities. These changes indicate that learning through the Islamic interactive application is effective in internalizing moral and Islamic ethical values, as students learn through digital experiences that touch the cognitive, affective, and psychomotor domains simultaneously. Furthermore, teachers observed that the use of this application helps bridge the gap between students' digital world and the religious values taught in PAI. Students who previously used their devices mainly for entertainment now have a positive alternative that remains relevant to their world. For example, in learning sessions on ethical behavior in social media, teachers utilized quiz features and short videos in the application to spark discussions about how Muslims should behave politely, honestly, and responsibly in the digital sphere. Thus, digital technology no longer becomes a threat to moral values but instead serves as a means to strengthen Islamic character in the modern era.

In addition, the implementation of the Islamic interactive application contributes to shaping students' religious identity in a vocational school environment, which is generally more oriented toward skills practice and the world of work. Through appealing and modern digital media, students are able to balance technological skill acquisition with the reinforcement of spiritual values. PAI teachers stated that this approach aligns with the school's vision to produce graduates who are not only technically competent but also possess noble character and strong moral awareness. In other words, the integration of the Islamic interactive application becomes a strategic step in realizing character education that harmonizes faith, knowledge, and action.

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These findings reinforce the view that digital innovation in religious learning is not a form of secularization, but rather a re-Islamization of technology, an effort to fill digital spaces with constructive Islamic values. Through the utilization of the Islamic interactive application, SMK I Setia Dharma Palembang has demonstrated that PAI instruction can be designed with modern approaches without losing its spiritual essence. This finding suggests that Islamic interactive applications function not merely as instructional tools, but as value-internalization media that integrate cognitive, affective, and psychomotor learning domains. By presenting Islamic values through digital experiences familiar to students, the application supports the internalization of religious character in a manner that aligns with contemporary students' digital culture.

#### **4. Conclusion**

This study on the implementation of an Islamic interactive application as an innovative learning medium in Islamic Religious Education at SMK I Setia Dharma Palembang demonstrates that the application was successfully integrated into the learning process, and contributed positively to students' understanding of Islamic Religious Education materials. The use of interactive features, multimedia content, and contextual learning activities encouraged active student participation and supported a more student-centered learning environment. The implementation of the application also showed potential contributions beyond cognitive outcomes. Teachers reported improvements in students' learning motivation, classroom engagement, and attitudes toward religious learning, indicating that digital learning media can support both academic and character development when appropriately designed and implemented.

These results confirm that interactive digital applications can serve as effective complementary learning media in Islamic Religious Education, particularly in vocational school contexts. However, this study was limited to a qualitative case study conducted in a single educational institution. Future research is strongly recommended to employ experimental or mixed-method approaches to measure the effectiveness of Islamic interactive applications on learning outcomes more comprehensively. Further studies may also focus on developing instructional design models for digital Islamic learning media and examining their long-term impact on students' religious understanding and character formation across different educational levels.

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How to cite this article:

Nugraha, M. Y., Azzahra, A., Ferdino, M. F., Harto, K., & Habisukan, U. H. (2026). Implementation of an Islamic Interactive Application as an Innovative Learning Media for Islamic Religious Education: A Qualitative Case Study at SMK I Setia Darma Palembang. *Journal of Educational Sciences*, 10(3), 248-262.

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