Exploring Technology Integration in Islamic Character Education: Perspectives from Early Childhood Education

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Article Info	Abstract
	This study arises from the pressing need to incorporate technology within the framework of Islamic character education at Permata Bunda Early Childhood Education (PAUD), a domain that has received limited attention. As a response, this research seeks to make a meaningful contribution by promoting technology-driven approaches in early childhood education. This study aims to explore the impact of online learning media on the development of Islamic character in students at Permata Bunda PAUD, Bengkulu City. Employing a qualitative approach and a case study method, the research involves students, teachers, and parents as subjects to understand the dynamics of applying online media in Islamic character education. The findings indicate that online learning media, such as interactive videos, Islamic songs, and religious education applications, positively contribute to instilling values of honesty, discipline, compassion, and responsibility in students. However, its implementation has significant challenges, including limited technological infrastructure, teacher competency, and parental involvement. This study underscores the importance of collaboration among teachers, parents, and educational technology developers to maximize the benefits of online media in Islamic character education. Recommendations are made to enhance teacher competency, provide technological infrastructure, and involve parents in supporting the learning process.

INTRODUCTION

Islamic character education for early childhood plays a vital role in nurturing individuals with strong cognitive abilities and commendable morals (Abubakar et al., 2023; Sani & Kadri, 2016). Islam places great importance on embedding moral values from a young age, viewing childhood as a pivotal phase in individual growth. By integrating character education rooted in Islamic principles, children are guided toward a profound understanding of integrity and the practical implementation of religious values in daily life (Taufik, 2020; Wasehudin et al., 2024). Islamic character-building aims not only to create intellectually intelligent generations (Nurfazri et al., 2024; Rahman, 2017; Yusuf et al., 2023) but also to provide a strong moral foundation. This impact

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is expected to manifest in social interactions and daily behaviors, reflecting steadfast religious values. Islamic values such as honesty, compassion, discipline, and responsibility must be taught through various religion-based educational methods (Fitri et al., 2022; Khobir et al., 2023; Shalahuddin et al., 2024). This is consistent with Majid & Andayani (2012) perspective, emphasizing the integration of these values into the educational process to shape students' character through Islamic teachings.

However, in the era of digital transformation, early childhood is increasingly exposed to technology that may lack proper guidance (Güneş, 2022). Without integrating Islamic values into technology-based learning, there is a significant risk of moral degradation that could affect children's social and spiritual development in the long term (Kamaludin et al., 2021; Rahman, 2017; Rusydiyah et al., 2019). Therefore, it is crucial to leverage technology as a tool to instill Islamic values in ways that are engaging, age-appropriate, and pedagogically sound.

Integrating character values in the learning process can be assisted by technology (Balontia & Iskandar, 2022; Hilyana & Hakim, 2018; Rahmawati et al., 2022). Technology opens up opportunities to teach Islamic values in engaging and easy-to-understand ways to children (Barkati & Cahyadi, 2024; Hoerudin et al., 2023; Khosla & El-Yunusi, 2024; Lasmini & Husain, 2023). For example, religious materials can be delivered through interactive stories, songs, or videos containing Islamic moral values (Kurniasih & Pratama, 2022; Yumna et al., 2024). However, the application of technology in education requires sufficient competence from educators as well as the availability of supporting infrastructure in educational institutions (Aziz et al., 2022; Sholeh & Efendi, 2023; Tumiran et al., 2024).

Based on pre-research conducted previously at Permata Bunda PAUD Bengkulu, efforts to integrate online learning media have begun to be implemented to enhance students' learning experiences. For instance, teachers use YouTube Kids to teach letters and numbers, introduce arts, and share Islamic stories (Sari et al., 2020). Facebook is utilized as a communication tool with parents about children's activities and creativity (Chugh & Ruhi, 2018; Downing et al., 2017), and Zoom is used for online webinars related to kindergarten education (Shabani et al., 2022). However, several challenges are evident in the implementation of online learning media, such as limited technological facilities, insufficient teacher competency in utilizing technology, and the lack of relevant online learning materials tailored to Islamic character development. Therefore, to overcome these challenges, it is important to examine more deeply the extent to which the application of learning media can support early childhood character development.

These challenges are particularly pressing in the context of global educational shifts toward technology integration. In many Muslim-majority countries, integrating Islamic values into digital education is still an underexplored area despite its potential to serve as a model for religious education worldwide. This is due to the disparity that exists in areas with limited access to technology, hindering the widespread implementation of digital education integrated with Islamic values (Ahuja, 2023; Vishnu et al., 2022). Without such integration, opportunities to embed moral and religious teachings into early childhood education may be missed. Therefore, it is important to examine more deeply the extent to which the application of learning media can support early childhood character development (Elyana & Utanto, 2019).

Several previous studies have examined the application of technology for character education. Such as examining the impact of integrating metaverse technology for character education in China (Yu & Ma, 2024), the effects of technology in student character-building (Arwen & Puspita, 2020; Suci et al., 2020), the application of information and communication technology in character education models (Saptatiningsih et al., 2021), and distance technology-based teaching in character learning (Xu et al., 2022). However, these studies focus on character education and not specifically on character education for Islamic values. The subjects observed were also not in early childhood. So, this research fills the void of previous research. Therefore, the purpose of this study is to explore the impact of online learning media on the development of Islamic character in students at Permata Bunda PAUD, Bengkulu City.

METHOD

In qualitative research with a case study approach, several theories can be used to deepen the understanding of the phenomena under investigation, particularly in the context of education or character development (Handoko et al., 2024). This study focuses on an in-depth exploration of one or more cases within real-life contexts. The case study approach provides a comprehensive understanding of the dynamics of a phenomenon within social, cultural, or educational contexts (Yuliani & Supriatna, 2023). Yin (2009) stated that case study research allows researchers to delve deeper into complex real-world problems by collecting data from various sources. This approach is suitable for studies requiring detailed understanding and strong contextual insights, such as character education through online media.
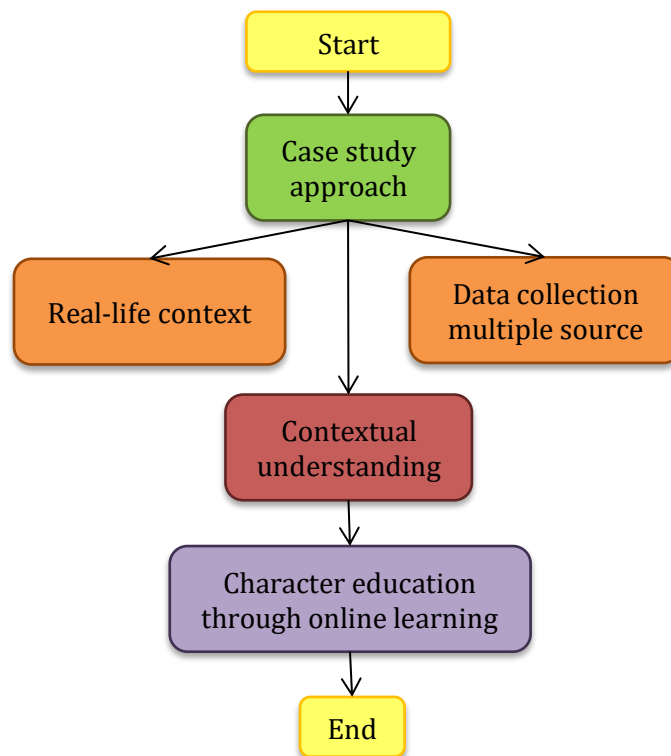

Figure 1. The Flowchart Research

The flowchart illustrates the research flow that aims to explore how technology can be integrated into Islamic character education, particularly at the early childhood education level. The research begins by using a case study approach, which allows researchers to study this phenomenon in depth in a real-life context. This approach is relevant because Islamic character education requires adapting to existing situations in society.

The next step involves collecting data from the research subjects, namely 75 students, two teachers, and 10 teaching staff at Permata Bunda PAUD. Data collection techniques were conducted using interviews, direct observations, and documentation studies. The data obtained helped to provide a more complete and in-depth picture of how technology is used to support character education. After the data were collected, the qualitative data analysis stage was carried out using Thematic Analysis and Descriptive Analysis. Thematic analysis is used to identify, analyze, and report patterns (themes) in qualitative data, such as interviews (Najmah et al., 2023). In the research context, thematic analysis is very effective for organizing interview data systematically and providing a deep understanding of the meanings and experiences expressed by participants. Meanwhile, descriptive analysis is used to describe or analyze data collected through observation without changing the data. The main purpose of descriptive analysis is to provide a better understanding of the data obtained.

Ultimately, this research focuses on the implementation of character education through online learning. This shows that technology is not only used as a tool but also as the main medium

to teach Islamic values, such as honesty, responsibility, and discipline. With this structured flow, the flowchart shows the logical relationship between each stage, from planning to the final result, which is a recommendation for the development of character education through technology in online learning. The indicators for this research are listed in Table 1.

Table 1. The Research Indicators

No	Indicator	Sub-Indicator	Questions
1	General Identification of Media and Platforms	- Name of the Learning Platform/Media: - Type of Platform (Website, Application, Others): - Name of the Media (e.g., Video, Module, Quiz, Forum, etc.): - Key Features Provided (e.g., Interactive Videos, Discussion Forums, Quizzes, etc.): - Access Level (Free/Paid): - Date of Use:	-
2	Platform Design Aspects	- User Interface (UI): Responsiveness to Devices	- Is the platform design child-friendly and easy to navigate? - Are the colors and fonts suitable for PAUD audiences (e.g., large fonts and bright colors)? - Are there instructions or navigation guides that help children and parents? - Can the platform be accessed well through various devices (computers, tablets, phones)?
3	Content and Media Quality	- Visual and Audio Quality - Alignment with PAUD Curriculum - Interactivity and Child Engagement - Learning Features for Children	- Do the images and videos have good visual quality and are appropriate for PAUD audiences? - Is the audio clear and easy for children to understand? Does it use age-appropriate language? - Is the presented material aligned with the PAUD curriculum, especially those based on Islamic character? - Are the themes relevant to the moral and spiritual development of children (e.g., noble character, faith, Islamic values)? - Does the material include interactive elements that encourage children to think or participate (e.g., quizzes, questions, practical activities)? - Are there features that assist children in understanding (e.g., animations, visual stories, everyday examples)? - Does the platform provide materials that are easy to understand for PAUD children and support learning based on Islamic character?
4	Parental Involvement and Supervision	- Features for Parents - Parent-Teacher Communication Facilities	- Does the platform provide reports or feedback for parents on their child's progress in using the platform? - Are there instructions for parents to guide their children while using the learning media? - Does the platform provide easy communication

No	Indicator	Sub-Indicator	Questions
			facilities between parents and teachers?
5	Security and Privacy	- Platform Security - User Privacy	- Is the platform safe for children to use (e.g., free from inappropriate ads or harmful links)? - Are there access controls that limit children's personal information? - Is user data well protected and in compliance with child privacy regulations (e.g., GDPR, CCPA)?
6	Evaluation and Feedback	- Platform Performance Evaluation - Improvements and Updates	- Does the platform have a system to assess its effectiveness in helping children learn (e.g., quizzes or continuous assessments)? - Does the platform provide features to collect feedback from parents or children? - Is the platform regularly updated with content or features to enhance user experience?

RESULTS AND DISCUSSION

The Impact of Online Learning Media on Building Islamic Character in Students at Permata Bunda PAUD

Online learning media has a significant impact on building the Islamic character of students at Permata Bunda PAUD. Through various interactive digital platforms, children are exposed to Islamic values such as honesty, discipline, respect, and social care (Balontia & Iskandar, 2022; Darimi, 2018). These media enable more flexible and engaging teaching by presenting Islamic materials that can be accessed anytime and anywhere. This approach also provides students with opportunities to learn independently, develop social skills, and deepen their understanding of religious teachings more comprehensively (Suci et al., 2020).

The research findings indicate that the online learning media implemented at Permata Bunda Kindergarten serves multiple purposes beyond just facilitating learning. They also function as platforms for communication and information sharing with parents, utilizing Facebook and Instagram groups, as well as platforms for professional development, such as Zoom meetings or webinars. These professional development activities include online seminars for principals and teachers on early childhood education topics, such as the *Merdeka Belajar* curriculum, learning tools, creating interactive and innovative lessons with the help of modern technological applications, and more.

The use of online learning media by teachers at Permata Bunda PAUD integrates Islamic values into the teaching materials through various online media. These include educational videos on themes such as self-awareness, health and personal hygiene, emotions and feelings, animals, plants, vehicles, professions, and nature. Religious themes are also incorporated through exemplary stories about righteous children, Islamic songs, and Islamic-based applications introducing letters and numbers. These media are used to teach fundamental Islamic concepts such as prayer, etiquette, and noble character. Teachers instill values such as mutual respect, sharing, and honesty through examples and Islamic stories conveyed during online learning sessions.

Parents are also involved in the online learning process by providing moral support and accompanying children during sessions. Through this guidance, Islamic values can be reinforced at home and within the family environment (Abubakar et al., 2023). Parental support plays a critical role in reinforcing the Islamic values taught at school. Parental involvement in learning activities accelerates the process of internalizing these values into children's daily lives. So, the perception and internalization of these values lead to improved academic performance. (Cheung & Pomerantz, 2015; Suizzo et al., 2016)

Although online learning offers flexibility, there are challenges in instilling Islamic values, particularly due to the limited direct interaction between teachers and students. Values such as patience, perseverance, and etiquette are difficult to instill without physical presence, which allows for direct teaching. The following Table 2 presents the impact of using online learning media.

Table 2. The Impact of Online Learning Media on the Formation of Islamic Character in Permata Bunda PAUD Students

Research Aspect	Research Findings
Use of Online Learning Media	- Online learning media is utilized for education, communication, and professional development through platforms such as Zoom, Facebook, and Instagram. - These media deliver Islamic values through educational videos, Islamic stories, Islamic songs, and Islamic-based applications.
Application of Islamic Values in Learning	- Values such as mutual respect, honesty, and sharing are applied through Islamic stories and examples in learning.
Role of Parents	- Parents accompany children during online learning, provide moral support, and help instill Islamic values at home.
Limitations of Online Learning	- Limited direct interaction makes it challenging to instill values such as patience and ethics. - Technological obstacles such as poor internet connectivity.
Role of Technology in Teaching Islamic Values	- Islamic-based educational applications help children understand Islamic values through games and interactive videos.
Integration of Character Education in Learning	- Learning focuses not only on academic aspects but also emphasizes Islamic character education such as trust in God (*tawakkal*), brotherhood (*ukhuwah*), and excellence (*ihsan*).
Teachers' Perceptions of the Effectiveness of Online Media	- Online media is effective for delivering materials with visual and audio support. - Challenges include limited devices and insufficient parental involvement.
Parents' Perceptions of Online Media	- Online media provides engaging and diverse learning experiences, but some parents are concerned about its impact on children's social development.
Barriers in Implementing Online Media	- Limited internet access and inadequate devices hinder the learning process. - Parents face difficulties in using technology.

Teachers' and Parents' Perceptions of the Effectiveness of Online Media

Many teachers feel that online media facilitates the delivery of learning materials to children, particularly by utilizing various interactive platforms that support visual and audio-based learning. However, some teachers note that limitations in technological infrastructure at students' homes pose challenges, such as unstable internet connections and inadequate devices. This is in line with previous research, which states that internet connection is still a major obstacle in the online learning process (Aziz et al., 2022; Rosli et al., 2023). Teachers also highlight that the effectiveness of online learning heavily relies on the active role of parents in accompanying their children during the learning process. The online learning environment requires more parental guidance and intervention to ensure the child's success (Bower et al., 2023; Chen et al., 2019). Many teachers expect parents to be more involved in supervising children while using online learning media.

Parents acknowledge the advantages of online media in providing diverse learning experiences that introduce children to various topics and skills. They also view it as an enjoyable and interactive method for children. However, some parents express that their children struggle to adapt to online learning, which requires extended focus in front of screens. Moreover, an unfavorable home environment will worsen students' focus (Lau & Lee, 2021; Salame et al., 2023). Additionally, some parents worry about the negative impact on their children's social development. Parents who are more actively involved in accompanying their children during online learning tend to feel satisfied with the progress achieved. However, some parents find it challenging to balance their work commitments with guiding their children.

Challenges in Implementing Online Learning Media

The study identified several technical constraints affecting the online media-based learning process at Permata Bunda PAUD, including that most students at Permata Bunda PAUD face difficulties in accessing online learning due to inadequate internet access. This issue is particularly evident among parents living in areas with poor internet quality. Limited data quotas also restrict distance learning processes, especially since most parents have low incomes.

Many parents lack adequate devices to support online learning. Some children have to share devices with siblings or use outdated equipment, disrupting the quality of the learning experience. This hinders effective interactions between students and teachers or the provided learning media, many parents, especially those unfamiliar with technology, face difficulties in assisting their children with online learning devices. Although teachers provide guidance, these challenges remain significant obstacles to the optimal implementation of online learning.

Technical Challenges Identified in This Study

The technical challenges found in this study align with previous research, which stated that inadequate technological infrastructure can affect the quality of online learning (Badiuzzaman et al., 2021; Rosli et al., 2023). Therefore, solutions that can be implemented include providing training for parents and enhancing collaboration with relevant stakeholders to ensure better internet access and adequate devices for students. Online media offers a variety of interactive methods that can help children better understand the material visually and practically (Ariandini & Ramly, 2023; Aulia et al., 2024; Jewitt, 2005). Teachers can use videos, educational games, and fun applications tailored for children (Brouwer, 2022; Deutsch et al., 2022; Gordillo et al., 2021). Parents also perceive that online learning allows children to study more flexibly at home without being limited by space and time. One of the biggest challenges faced by teachers and parents is technological limitations. Unstable internet connections and limited devices hinder the effectiveness of online learning. Furthermore, a lack of understanding of technology usage among some parents can also obstruct the effectiveness of the learning process. To provide a clearer picture of these challenges and their impact, the author presents Table 3, summarizing the key aspects discussed in this document, focusing on the influence of online learning media on the development of students' Islamic character.

Table 3. The Influence of Online Learning Media on Building Students' Islamic Character

No	Aspect	Description	Example of Implementation
1	Instilling Islamic Values	Utilizing online media to teach Islamic values such as honesty, discipline, respect, and social care.	Educational videos on how to perform prayer. Islamic songs about compassion and responsibility.
2	Interactive Islamic-Based Materials	Media such as videos, applications, or educational games designed to engage children while conveying Islamic values.	Islamic educational apps with interactive games.
3	Role of Teachers in Learning	Teachers guide students in understanding Islamic values through online learning media.	Teachers delivering Islamic stories through online videos.
4	Parental Involvement	Parents accompany children during online learning sessions to strengthen the instillation of Islamic values at home.	Parents monitoring children's activities while using Islamic learning applications.
5	Evaluation of Child Development	Evaluations are conducted on changes in students' attitudes and behaviors reflecting Islamic values after online learning.	Teachers record students' Islamic character development through daily behavior observations.
6	Challenges in Online Learning	Challenges such as technological limitations and lack of direct interaction affect the effectiveness of instilling Islamic values.	Students without internet access or adequate devices face difficulties participating in online learning sessions.

The Role of Parents

The role of parents in accompanying children during online learning is crucial to maintaining their focus and ensuring they understand the material. When parents actively participate, children tend to be more focused and gain greater benefits from online learning. However, not all parents have the time or capability to provide intensive support, which can impact the learning outcomes of their children.

Long-Term Impact

Online learning can have positive long-term effects, especially in developing children's digital skills. However, excessive use of media may lead to children becoming more passive or less adept at direct social interactions, which are vital aspects of early childhood development (Schwarzer et al., 2022). To mitigate these effects, parents and educators can implement a balanced approach by incorporating offline activities that promote social skills and physical interaction, such as group play, storytelling, and collaborative problem-solving tasks. Setting screen-time limits and ensuring that online learning is supplemented with face-to-face interactions and hands-on experiences can help foster a well-rounded development in children (Panjeti-Madan & Ranganathan, 2023).

Additionally, integrating outdoor activities such as sports, nature exploration, and community engagement projects can help children practice real-world social and emotional skills. Schools can design hybrid curriculums that combine the benefits of online learning with traditional classroom methods, ensuring children experience peer interaction in structured settings. Parents can also model positive media use by demonstrating healthy digital habits and encouraging family time without screens. Providing children with opportunities to participate in extracurricular activities like art, music, or drama can further enhance their creativity, communication skills, and confidence in social settings. Finally, open communication between parents, teachers, and children about the impacts of media usage can help create awareness and support children in achieving a balanced lifestyle.

LIMITATIONS

This study acknowledges several limitations that may affect the generalizability of its findings. First, the research was conducted in a single early childhood education institution, which may not fully represent the broader application of online learning media in Islamic character education across different cultural and geographical contexts. Second, the qualitative case study approach limits the ability to make broad generalizations, as the data is context-specific. Third, the technological constraints experienced by participants, including limited internet access and inadequate devices, posed challenges to obtaining consistent and comprehensive data. Lastly, the study's reliance on self-reported data from teachers and parents could introduce biases that may affect the accuracy of the findings.

CONCLUSION

Instilling Islamic values through online learning in early childhood education is vital for shaping good character from an early age. While challenges such as limited interaction, inadequate internet access, and insufficient devices persist, appropriate technological media and active parental involvement can significantly support this process. Collaboration between educators and parents is crucial to ensure that Islamic values are consistently integrated into children's daily lives. To address these challenges, several strategies can be implemented. Educators at Permata Bunda PAUD could focus on developing simpler, age-appropriate content that emphasizes Islamic values to ensure young learners can easily understand and apply the lessons. Parents also play a critical role in this process, as workshops designed to enhance their role in character education at home can strengthen the alignment between school and home environments. Moreover, improving technological infrastructure and providing educators with training on optimizing technology for Islamic character education are essential steps to bridge existing gaps. By fostering a supportive collaboration between educators, parents, and relevant stakeholders, Islamic values can be more effectively instilled in children, both during and beyond online learning sessions.

AUTHOR CONTRIBUTIONS

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