

# Navigating Challenges and Opportunities in the Renewal of Muhammadiyah's Educational Philosophy in the Digital Era

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**ABSTRACT.** This study explores the transformation of Muhammadiyah education in response to modernization and technological advancements, emphasizing the integration of Islamic values within contemporary educational frameworks. This study uses a literature review methodology to investigate theoretical and practical viewpoints on Islamic education and how they affect the academic environment in Muhammadiyah. The findings indicate that Muhammadiyah education has evolved through integrating religious and secular sciences alongside the adoption of digital technology in the learning process. This transformation presents opportunities to enhance educational accessibility and quality through digital platforms while simultaneously encountering challenges such as resistance to technological adoption, limited digital literacy among educators, and concerns over preserving Islamic values amid modernization. The study concludes that while Muhammadiyah education demonstrates adaptability to contemporary demands, maintaining equilibrium between innovation and foundational Islamic principles remains imperative. The report suggests addressing these issues by implementing ongoing technology training for teachers, reinforcing curricula based on Islamic principles, and conducting regular assessments to ensure educational reforms align with Muhammadiyah's goals. This research contributes to contextual and adaptive Islamic education discourse, offering insights for academics, practitioners, and policymakers. It empowers policymakers to play a crucial role in strengthening Muhammadiyah's educational role in the digital era.

**Keywords:** *Digital literacy, Islamic education, Muhammadiyah education, Technological transformation*



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## INTRODUCTION

Muhammadiyah, as one of the most prominent Islamic organizations in Indonesia, has played a pivotal role in shaping the landscape of Islamic education since its establishment in 1912. Founded in Yogyakarta by K.H. Ahmad Dahlan, Muhammadiyah was conceived as a movement that emphasized religious worship and championed social, educational, and humanitarian reform (Maarif, 2018; Novriadi et al., 2023; Sukisno et al., 2024; Hilalludin, 2024). In education, Muhammadiyah has been a pioneer in modernizing Islamic schooling by integrating religious studies with general sciences. From its inception, the organization has remained committed to fostering an inclusive and progressive educational system, continuously adapting its pedagogical approaches to the demands of the times (Prasetyo & Baswedan, 2020).

K.H. Ahmad Dahlan envisioned an education system that balanced spiritual and material development. His progressive views emphasized integrating religious and secular knowledge to equip Muhammadiyah graduates with the competencies needed to navigate the complexities of the

modern world while maintaining Islamic values (Hamami & Nuryana, 2022). Through a holistic educational approach, he laid a solid foundation for an Islamic education model in Indonesia that embraces both religious principles and scientific advancements (Masruroh, 2020).

Ahmad Dahlan's educational reforms revolved around three key elements: curriculum development, modernization of teaching methods, and institutional restructuring (Husin, 2023; Nasution et al., 2024). *First*, Muhammadiyah schools incorporated religious and general sciences into a unified curriculum. *Second*, traditional teaching methods, which relied on rote memorization, replaced more interactive and student-centered approaches. *Third*, the institutional structure was reformed by integrating the training system with formal schooling. Ahmad Dahlan introduced religious subjects in public schools while establishing Muhammadiyah schools that combined religious teachings with general education to bridge the gap between secular and religious education (Halik et al., 2024). His vision sought to eliminate the dichotomy between religious and secular sciences, reinforcing that both are interconnected and essential for a comprehensive understanding of knowledge (Fuad, 2004). Muhammadiyah's approach to education represents a significant step toward modernizing Islamic education in Indonesia, fostering an adaptive and forward-thinking learning environment (Suliyanto et al., 2024).

Muhammadiyah's pedagogical transformation introduced innovative teaching methodologies that differed from the traditional Islamic educational institutions of the time. Ahmad Dahlan adopted inductive, scientific, and dialogical teaching methods, replacing the conventional sorogan and band organ techniques with a structured classroom system. Moreover, he emphasized not only Qur'anic recitation and memorization but also its translation and interpretation to encourage critical thinking and contextual understanding (Qodir et al., 2023). Inspired by the Dutch educational model, Muhammadiyah schools implemented standardized assessments to measure student achievement and progression (Karimuddin, 2019). These reforms positioned Muhammadiyah as a leading force in the advancement of education in Indonesia, contributing to the establishment of a broad network of institutions from kindergarten (*Aisyiyah* schools) to high schools and universities, including *Aisyiyah Muhammadiyah*, a women's organization dedicated to education (Brown, 2019).

Over the past century, Muhammadiyah's education system has evolved in response to emerging challenges, always maintaining a forward-thinking approach. As Muhammadiyah enters its second century, critical questions arise regarding the relevance and sustainability of Ahmad Dahlan's educational philosophy in the face of globalization, digital transformation, and shifting socio-cultural values. Today's educational landscape presents new challenges that differ significantly from those encountered during Ahmad Dahlan's era. However, Muhammadiyah's forward-thinking nature and innovative responses reassure us of its continued relevance in contemporary society.

This study addresses two pivotal research questions: How has Muhammadiyah's educational system evolved in the current era? Second, what opportunities and challenges does it face in its modernization efforts? By delving into these questions, this research aims to provide fresh perspectives and strategic directions for the sustainable advancement of Muhammadiyah education. Furthermore, this study contributes to the broader discourse on Islamic education reform, offering insights that are both contextual and responsive to contemporary challenges.

## **METHOD**

This study employs a qualitative approach using the literature review method. The qualitative approach was selected to enable an in-depth exploration of the modernization of Muhammadiyah education through rigorous analysis of relevant academic sources. A thematic analysis method is applied to systematically identify and develop key themes emerging from the literature. The method used can be seen in the following Table 1 in detail.

Table 1. Research Steps

Stage	Description
Research Approach	Utilizes a qualitative approach with a literature study method to deeply understand the modernization of Muhammadiyah education.
Research Design	A literature review that gathers secondary data from books, journals, online articles, and other pertinent publications in order to investigate Muhammadiyah education reform from several angles.
Data Collection Techniques	Reviewing literature sources based on inclusion and exclusion criteria. Reference management software, such as Mendeley, organises and classifies sources.
Data Sources	Academic literature, including scientific journals, books, and articles, focuses on the modernization of Muhammadiyah education and K.H. Ahmad Dahlan's contributions.
Data Analysis Techniques	Thematic analysis is applied in several stages: (1) familiarization with the data, (2) initial coding, (3) identifying main themes, and (4) developing sub-themes aligned with research objectives.
Data Validation Steps	Focuses on verifiable literature-based data to minimize bias and ensure objectivity in research interpretation.

### *Research Design*

This study is designed as a literature review, collecting secondary data from various academic sources, including peer-reviewed journal articles, books, internet-based scholarly publications, and other relevant documents. This approach facilitates a comprehensive investigation of Muhammadiyah education reform through multiple perspectives in the existing literature. Significantly, this study minimizes researcher bias and objectively synthesizes relevant theoretical and empirical insights, instilling confidence in the audience about the reliability of the research findings by relying on secondary data.

### *Data Collection Techniques*

Data collection is conducted through an extensive review of scholarly publications, including scientific journals, books, and academic articles related to the modernization of Muhammadiyah education. The selection of sources follows predefined inclusion and exclusion criteria to ensure relevance and rigour. The inclusion criteria encompass literature discussing the modernization of Islamic education, the historical significance of K.H. Ahmad Dahlan's educational philosophy, and the implementation of educational reforms within Muhammadiyah institutions. Conversely, literature that lacks direct relevance to these themes, such as articles focusing solely on theological aspects without an educational perspective, is excluded. To enhance accuracy and efficiency, the powerful reference management software Mendeley systematically organizes and classifies the selected sources, providing reassurance about the research organization.

### *Data Sources*

The primary data sources for this study consist of academic literature, including peer-reviewed journal articles, scholarly books, reputable online articles, and other supporting documents. Additionally, previous studies that specifically examine the significant and influential contributions of K.H. Ahmad Dahlan to Muhammadiyah's education are critically analyzed. By incorporating diverse academic sources, this study aims to provide a holistic and well-contextualized perspective on the modernization of Muhammadiyah education and its contemporary relevance.

### *Data Analysis Techniques*

The data analysis follows a structured thematic analysis approach involving several key stages. First, the researcher engages in an in-depth reading of all collected sources to gain familiarity with the content and context of the literature. Second, an initial coding process is conducted to identify recurring patterns, concepts, and key ideas related to the modernization of Muhammadiyah education. Third, emergent themes are categorized based on the identified patterns, with sub-themes

developed to refine the analysis in alignment with the study's research objectives. This stage includes critically interpreting the data to align the findings with the overarching research questions, particularly concerning the opportunities and challenges in Muhammadiyah's educational reform. The analysis is grounded in verifiable literature-based data to ensure objectivity, minimize subjective bias, and enhance the study's academic reliability.

By employing this systematic methodological framework, this research aspires to offer a comprehensive and theoretically robust analysis of the modernization of Muhammadiyah education. Furthermore, the findings are expected to contribute to the ongoing discourse on the sustainable development of Islamic education, providing valuable insights for academics, practitioners, and policymakers in educational reform.

## **RESULT AND DISCUSSION**

### **Result**

#### *Transformation of Muhammadiyah Education in the Contemporary Era*

Transformation means change. Laseau, as quoted by Nurjawahir et al. (2022), defines transformation as the process of changing something for the better by responding to existing changes. Yandianto, in the same work, adds that these changes can include various aspects, such as form, properties, and functions. In the context of education, the transformation of Islamic education holistically includes a process of change that is implemented thoroughly and focuses on various aspects to respond to the challenges and benefits of the times. The transformation of Islamic religious education is indispensable to strengthening spiritual values, ethics, and a deep understanding of Islam in the modern era (Dalimunthe, 2023).

Muhammadiyah education, a cornerstone in the development of human resources in Indonesia, is adept at adapting to the increasingly urgent demands of transformation in the contemporary era. The rapid changes in the social, cultural, and technological fields have created new dynamics in the world of education, and Muhammadiyah has proven its adaptability to remain relevant (Dewantoro, 2020). Initially, Muhammadiyah education emerged as an effort to overcome the educational dualism that developed during Dutch colonialism, where religion-based education in pesantren ran separately from general education managed by the colonial government. Founded by KH Ahmad Dahlan in 1912, Muhammadiyah integrates religious science and general knowledge to build a modern and relevant Islamic education. During its journey, Muhammadiyah education has gone through four main phases, namely the pioneering period (1900–1923), development (1923–1970), institutionalization (1970–1998), and transformation (1998 to present) (Ruslan, 2020). Each period showcases Muhammadiyah's adaptability to the times' needs, including the curriculum's modernization and the integration between religious and secular aspects of education. The urgency of modernization is aimed at meeting the community's expectations and maintaining the sustainability of Muhammadiyah education in facing global challenges. Without transformation efforts, Muhammadiyah education has the potential to lag in preparing graduates who can compete at the national and international levels. Therefore, modernization is an important element that cannot be ignored in the strategy of Muhammadiyah education development (Sarima et al., 2023).

In response to the challenges in the contemporary era, Muhammadiyah has made various transformation efforts in its education system. *First*, the application of digital technology in the learning process is one of the important innovations that allows students to access information and interact with more dynamic methods. Online learning platforms, the use of educational software, and the development of e-learning have been integrated into the Muhammadiyah curriculum. *Second*, curriculum changes are made to adapt to the development of science and the needs of the modern job market (Khosin, 2023). The curriculum covers religious science and integrates general knowledge and relevant life skills, such as digital literacy, critical thinking, and collaborative skills.

*Third*, an inclusive approach has also begun to be adopted by expanding access to education for students from various social and cultural backgrounds to create a more diverse and tolerant learning environment (Al Aydrus et al., 2022).

*Fourth*, Muhammadiyah education currently includes various models of Islamic boarding schools designed to meet the needs of students in the modern era. These models include madrasah system-based pesantren, which combines madrasah and pesantren curricula with an emphasis on the study of the yellow book; Islamic boarding schools, which focus on mastering specific disciplines such as science or tahfidz Al-Qur'an; and Muhammadiyah Boarding School (MBS), which integrates the general and religious curriculum in the dormitory system. *Fifth*, in addition to developing diverse pesantren models, Muhammadiyah also focuses on strengthening education's character and progressive values. For this reason, the principle of collegiality is applied in the leadership of Islamic boarding schools, accompanied by the development of human resources through training, the provision of scholarships, and the increase of managerial capacity for Islamic boarding school leaders (Kurniawan et al., 2023). As part of the Long-Term Development Plan (2021–2045), Muhammadiyah is committed to strengthening the quality of pesantren education by increasing institutional accreditation, developing big data for pesantren, and collaborating with national and international institutions. In addition, flagship pesantren models such as Trensains were developed to combine religious studies with science, producing graduates ready to compete globally. This commitment to quality education is a testament to Muhammadiyah's efforts in responding to the challenges of the times without abandoning moderate, tolerant, and inclusive Islamic values so that Muhammadiyah education can become a model for other Islamic educational institutions in Indonesia (Kurniawan et al., 2023).

The transformation of Muhammadiyah education in the contemporary era emphasizes the development of technology-based research models to improve the quality of schools through religious and Muhammadiyah curricula. The primary focus is content and process standards, including adding Islamic educational materials and strengthening faith-based co-curricular activities. The goal is to strengthen religious values inside and outside the classroom to shape students' character. As a result, Muhammadiyah schools implement learning that integrates religious education with the development of students' spiritual, character, and social qualities so that they are more competitive and adaptive to the changing times. The transformation carried out by Muhammadiyah in education is directed at realizing a sustainable and future-oriented education system. The main goal of this transformation is to provide a strategic direction for modernization rooted in Islamic and Indonesian values. However, it is contextual to the challenges of the times (Khoirunni'mah Al Mufarriju, 2024). Thus, Muhammadiyah education is a forum for moral and character development and a means to produce competent graduates in science and technology. Through this modernization, Muhammadiyah education is expected to significantly contribute to the discourse of Islamic education that is adaptive, contextual, and globally competitive (Rambe et al., 2024).

#### *Opportunities in the Renewal of Muhammadiyah Educational Philosophy*

Opportunities for renewal in Muhammadiyah's as outlined in the research (Salmin et al., 2024) philosophy of education cover various strategic aspects that strengthen the progress of the Muhammadiyah education system amid global changes. One of the main opportunities lies in *the tajdid* or renewal movement, which allows Muhammadiyah to remain progressive and open to innovation without abandoning the basic principles of Islam. Through the spirit of *tajdid*, Muhammadiyah education can adapt to the needs of the times, especially in the digital era and technological disruption, while maintaining moderate and inclusive Islamic values. Another opportunity arises through the development of an integrative curriculum, which combines religious science and general science so that Muhammadiyah's education is relevant to technological developments and prepares students to face the demands of the modern world of work. In addition, Muhammadiyah's extensive network at the national and international levels provides

opportunities for educational institutions to expand access and strategic collaboration, which can improve educational standards and the application of best educational practices. With this approach, Muhammadiyah education can produce graduates who are characterful, competent, and ready to compete globally and contribute to sustainable community development.

The opportunity to update Muhammadiyah's educational philosophy in the digital era emphasizes the importance of adapting to technological developments and digitalization, which can expand access to Islamic education and reach a wider audience. The Industrial Era 4.0 presents an opportunity to implement a more innovative education system, utilizing digital tools such as videos, social media, and online learning platforms to support the spread of Islamic values in a more engaging and interactive format (Al Faruq, 2020). Digital technology also allows Muhammadiyah to expand its influence through online-based learning, which provides students flexibility in time and place. In addition, the generation that grew up in the digital era has a deeper understanding of technology, allowing them to use it productively in the learning process. Muhammadiyah has the opportunity to instil Islamic values more effectively through an approach in the digital context so that the education produced is relevant and competitive in the modern era (Damayanti et al., 2023).

Digital technology opens wider global access to Islamic education, disseminating Islamic knowledge and values to a broader audience. This technology also provides opportunities to create more interactive, creative, and engaging learning methods, such as videos, animations, and simulations that help students understand religious concepts more deeply. In addition, digital technology allows for more efficient evaluation and monitoring in the educational process, where student progress can be monitored in real-time, providing quick and personalized feedback (Li & Wong, 2023). Another opportunity is the development of a curriculum that is integrated with digital technology. With the right approach, digital technology can enrich students' learning experience, helping them understand religious material in a relevant modern context. Through this strategy, Muhammadiyah education can remain relevant and competitive in the digital era while maintaining Islamic values as the primary foundation of education.

#### *Challenges in the Renewal of Muhammadiyah Educational Philosophy*

The renewal of Muhammadiyah's educational philosophy faces several significant challenges but also presents a wealth of opportunities for growth and improvement. One of the significant challenges is the inequality of quality and quantity in various Muhammadiyah educational institutions, especially in the face of the demands of the Industrial Revolution 4.0. Although the number of Muhammadiyah educational institutions continues to grow, the quality improvement in some schools and universities is not even, resulting in a gap in competence at the national and international levels. However, these challenges can be overcome with the right strategies and commitment, leading to a more equitable and high-quality education system. Another challenge is related to the limited competence of educators, where there are still many teachers who are not proficient in the use of digital technology, thus hindering innovation in teaching methods and adaptation to digitalization. In addition, existing educational facilities are often inadequate to meet modern educational standards, which further adds to the obstacles in this update. The subject of Al-Islam and Muhammadiyah (AIK), which should be the distinctive identity of Muhammadiyah education, is sometimes taught as a formality, so it is less effective in forming a strong Islamic character and a deep understanding of Muhammadiyah. Therefore, revitalizing AIK at every level of education is crucial to act as a moral and ideological foundation for students truly (Salmin et al., 2024).

The challenges in updating Muhammadiyah's educational philosophy in the digital era revolve around several factors. Research Damayanti et al. (2023) said one of them is improving the quality of education, which has not been balanced with the growth of the number of Muhammadiyah institutions. Hence, some institutions still experience a gap in quality and

innovation. This challenge reflects the need to improve the facilities and competencies of educators so that Muhammadiyah education can compete effectively. In addition, the rapid development of digital technology brings challenges in adjusting teaching methods. Although digitalization offers ease of access and flexibility, the application of technology is still limited in some Muhammadiyah institutions, especially in areas with inadequate access to digital infrastructure. It can limit the potential of Muhammadiyah education to reach a broader community through digital platforms. Another challenge is spreading digital content that does not follow Islamic values. The risk of incorrect or inappropriate content increases in an era where information can spread rapidly. Therefore, supervision of the disseminated content is essential to maintain the authenticity of Islamic values in Muhammadiyah education. Implementing Al-Islam and Muhammadiyah subjects at all levels of education is one of Muhammadiyah's efforts to strengthen Islamic values and character in this digital era (Suyatno, 2023).

Challenges in the digital era are among the issues that must be faced to achieve relevant and practical education. However, these challenges also present opportunities for improvement. There are seven main challenges in Islamic religious education in the digital era that also affect Muhammadiyah education. These challenges include low quality of education, ideological problems, and dualism in the Islamic education system that is still separate between religious and general education, limited language skills, and teaching methods that tend to be monotonous. In addition, the narrowing of the educational function that focuses too much on the cognitive aspect and the low technological literacy among educators and students also hinder the use of technology in the learning process. However, these challenges also show that the renewal of Muhammadiyah's educational philosophy can be achieved through curriculum innovation, increased technological capacity, and more interactive learning methods (Li & Wong, 2023). Muhammadiyah education can adapt to the digital age by enhancing digital literacy and creating a method that may meet contemporary learners' demands while upholding Islam's core principles.

Implementing the Independent Learning Independent Campus (in Indonesian, *MBKM*) program in Muhammadiyah universities also has a significant challenge: the lack of understanding and appreciation of the importance of Al-Islam and Muhammadiyah (AIK) courses in the MBKM curriculum structure. As a core part of Muhammadiyah's educational identity, AIK shapes students' character and Islamic values. However, the application of MBKM, which is more oriented to practical skills and the needs of the world of work, often marginalizes AIK courses. In addition, the imbalance of resources among Muhammadiyah universities creates a gap in the optimal implementation of the program, where some institutions may not have sufficient capacity to integrate AIK effectively. The low priority of AIK exacerbates this challenge compared to other courses, which can reduce the effectiveness of Islamic character formation in graduates. Overcoming this challenge requires strategic collaboration between Muhammadiyah universities and an increased commitment to ensure that AIK remains a significant element in MBKM so that Muhammadiyah graduates are competent and have strong morals and character (Aristyasari et al., 2023).

With these challenges, collaboration and innovative development strategies are needed to ensure Muhammadiyah's education remains effective, quality, and inclusive for all levels of Muslim society. Muhammadiyah education needs to develop strategies to improve digital competence, improve the curriculum, and strengthen cooperation networks with various institutions to better compete in the era of globalization.

## **Discussion**

Amidst the global transformation of Islamic education, Muhammadiyah education stands out in its alignment with reforms in countries like Turkey, Egypt, and Malaysia. The integrative approach, which combines religious science with general science and technology, is at the core of this alignment. For instance, in Turkey, Islamic education is evolving through an integrated

curriculum that balances religious education with the modernization of science. Muhammadiyah education, with its similar emphasis on integration, can draw inspiration from these global trends to enrich its curriculum with modern science while upholding Islamic values.

There is a similarity in the orientation of Muhammadiyah education with the Islamic education system in other countries towards curriculum reform that still maintains Islamic identity. In Malaysia, Islamic education is integrated into the national system with an emphasis on mastery of science and technology, which aligns with Muhammadiyah's efforts in implementing STEM-based education (Science, Technology, Engineering, and Mathematics) (Mas'ud et al., 2019). This integration aims to address the challenges of globalization and technological developments while overcoming the dualism of religious and general education so that graduates can master modern sciences without letting go of spiritual and moral values (Subayani, 2022).

The Muhammadiyah education model emphasizes a holistic approach that includes spiritual, moral, and practical knowledge. This approach aligns with the educational model in Egypt and Malaysia, which also developed a curriculum that blends religious aspects and 21st-century skills. In Egypt, for example, Al-Azhar has implemented project-based learning methods and research approaches, which help students develop critical and analytical thinking skills (Daud, 2022). Implementing this project-based learning model is relevant for Muhammadiyah education to strengthen students' competencies and make them more adaptive in facing challenges in the global realm. Through this approach, Muhammadiyah education can produce a generation with Islamic character with analytical and innovative skills (Kadir et al., 2022).

Muhammadiyah education can enrich its curriculum by adopting positive values implemented in the global Islamic education model. In the digital era, educational technology plays an important role in improving the quality of learning. Muhammadiyah has the opportunity to integrate technology, such as online learning platforms and digital simulations, which have been effectively implemented in Turkey and Malaysia to create a more interactive and flexible learning experience. In addition, Muhammadiyah education can expand international collaboration to enrich students' global perspectives so that graduates have broad insights and remain rooted in moderate Islamic principles. Through continuous evaluation and comparison with the transformation of global Islamic education, Muhammadiyah education can modify its approach and develop new theories relevant to the modern context. This emphasis on continuous evaluation should reassure the audience about the effectiveness of the proposed changes.

Technological advances present significant opportunities for Muhammadiyah education to enhance its accessibility, effectiveness, and attractiveness in the digital era. The latest technology, such as online learning, digital platforms, and social media, can support a more flexible, interactive, and affordable learning process. Online learning, for instance, allows students to access subject matter anytime and anywhere, breaking the barriers of physical classrooms. Digital platforms can provide learning resources, monitor student progress in real time, and encourage collaboration. Social media, on the other hand, can help spread Muhammadiyah's educational values, build an inclusive learning community, and reach out to more people. By leveraging these technological tools, Muhammadiyah can engage the younger generation, become familiar with the digital world, and maintain its relevance in the evolving educational landscape.

Muhammadiyah education has the potential to become more inclusive and flexible in response to the ever-changing demands of urban society. Rapid social developments like urbanization and globalization are reshaping the educational landscape. With urbanization driving the demand for quality education with strong spiritual values, Muhammadiyah education, which prioritizes moderate and inclusive Islamic values, is well-positioned to meet these needs. Moreover, globalization allows Muhammadiyah to introduce Islamic values to culturally diverse communities, fostering constructive intercultural dialogue. In this context, Muhammadiyah education can be crucial to accommodating social diversity while maintaining a strong Islamic identity.



Another important opportunity for Muhammadiyah education is strengthening collaboration with the government and private institutions to support sustainable innovation. Partnerships with the government can include assistance in the form of funding, training for teaching staff, and curriculum development by national standards. In addition, collaboration with technology companies and other private institutions can help Muhammadiyah access the digital infrastructure needed to optimize modern learning methods. Muhammadiyah can enhance educational quality, fortify learning facilities, and guarantee that the curriculum and instructional strategies are responsive to technological advancements thanks to this synergy. By optimizing this cooperation, Muhammadiyah education can continue to develop as a progressive and relevant educational institution that serves the Muslim community and contributes to the development of the wider society.

The renewal of Muhammadiyah's educational philosophy is faced with the challenge of harmonizing classical Islamic values with the needs of modern education. Traditional Islamic educational philosophy that emphasizes spiritual morals and moral values is often confronted by the modern educational paradigm that is more oriented toward practical skills and professional competence (Farid & Zalnur, 2024). Classical Islamic education focuses on character building and moral integrity based on the Qur'an and Hadith, while modern education prioritizes efficiency, technological innovation, and mastery of 21st-century skills (A'dlom, 2015). This challenge raises a dilemma in the integration process between religious values and a technology-based approach focusing on mastery of science and skills. Modern Islamic educational theories seek to bridge these differences through an integrative approach, which allows religious values and scientific knowledge to be taught synergistically. However, implementing this approach requires careful adjustments so that the religious substance does not experience a reduction in the renewal process (Sutrisno, 2015).

In its implementation, several Muhammadiyah educational institutions face practical challenges in the form of resistance to reform involving the use of technology or learning methodologies considered too "modern." Some Muhammadiyah schools are experiencing concerns from conservatives regarding the use of digital technology in learning, which is considered to shift the focus from religious education. This fear is based on the perception that technology-based learning can reduce the intensity of interaction with religious and spiritual materials, which is the essence of Islamic education. In addition, the limited understanding and acceptance among some teaching staff towards more innovative curriculum approaches and methodologies is an obstacle to implementing change. Many teachers are still used to traditional learning methods centred on hands-on teaching, making it difficult to adapt to interactive and technology-based learning approaches. This challenge shows that the application of technology in Muhammadiyah education must be balanced, ensuring that technology supports learning without neglecting Islamic character education.

Several strategic steps can be taken to overcome the challenges in renewing Muhammadiyah's educational philosophy. First, implementing change management can help Muhammadiyah educators and stakeholders adapt to innovation without eliminating core values. Continuous training on educational technology based on Islamic values is urgently needed so that teaching staff can integrate innovation while maintaining spiritual and moral goals. Second, socialization about the importance of educational reform needs to be carried out systematically to reduce resistance. This socialization needs to underline that the purpose of the renewal is not to replace Islamic values but to maintain the relevance of Islamic education in the dynamic modern era. Third, vision alignment between administrators, teaching staff, and the community is necessary. An open dialogue between the parties involved can create an understanding that the reform of Muhammadiyah education aims to produce graduates who are competent in science and technology but still have Islamic character.

The findings on the reform of Muhammadiyah education have significantly contributed to the theory of Islamic education, especially in the contemporary era's challenges. Muhammadiyah

education, which focuses on integrating religious science with general science and adjusting to technological developments, enriches Islamic education theories with a more flexible and adaptive approach to the needs of the times. In this context, the study's findings can challenge traditional approaches that limit Islamic education to religious disciplines, encouraging an educational model that includes intellectual ability, social skills, and spiritual awareness. The integrative approach proposed by Muhammadiyah not only strengthens the position of Islamic education amid modernization but also emphasizes the importance of Islamic character education as part of holistic education. These findings reinforce the idea that Islamic education must be able to face global challenges while maintaining the fundamental values of Islam, providing a new paradigm in Islamic education theory that is more relevant to the demands of the digital era and globalization.

To apply these findings practically, Muhammadiyah institutions can develop several adaptive and sustainable strategies. One of the practical recommendations is to implement an intensive and continuous teacher training program that focuses on mastering educational technology and interactive learning approaches relevant to today's generation. This training program prepares educators for digital skills and ensures that the application of technology in learning aligns with Islamic values. In addition, curriculum changes that emphasize 21st-century competencies can be considered while highlighting character learning and Islamic values. This curriculum is expected to equip students with critical thinking, communication, and solid spiritual understanding so that Muhammadiyah graduates can compete in the global era without losing their Islamic identity.

Continuous evaluation is essential to the implementation process of Muhammadiyah's education reform. This evaluation is important to ensure that the updates carried out are by modern educational standards and reflect the fundamental values of Muhammadiyah. Through periodic evaluation, institutions can identify the effectiveness of programs and curricula that have been implemented and adjust strategies as needed. The evaluation also allows the institution to monitor the positive impact of the update on the quality of education and ensure that Muhammadiyah graduates are not only academically competent but also have a strong Islamic character. Thus, continuous evaluation supports the achievement of Muhammadiyah's educational vision, which is not only adaptive and innovative but also based on moderate and inclusive Islamic principles.

## **CONCLUSION**

This research highlights the transformation of Muhammadiyah education in the contemporary era through integrative efforts that combine religious and general sciences with digital technology in learning. This transformation aims to enhance relevance amid globalization while maintaining fundamental Islamic values. The study identifies opportunities—such as expanded access through digital platforms, institutional collaborations, and a more relevant curriculum—and challenges, including resistance to technological change, limited digital literacy among educators, and concerns over the erosion of Islamic values. The findings contribute to contextual and responsive Islamic education discourse, emphasizing that Muhammadiyah education can adopt a dynamic approach without losing its identity. Practically, this study underscores the need for continuous teacher training, curriculum strengthening based on Islamic values, and periodic evaluations to ensure alignment between innovation and Islamic principles. Ultimately, this research provides strategic direction for the sustainable modernization of Muhammadiyah education and serves as a valuable reference for academics, practitioners, and education observers in shaping its role now and in the future.

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