IMPROVING ISLAMIC RELIGIOUS EDUCATION TEACHERS' PEDAGOGICAL COMPETENCE THROUGH EDUCATIONAL TECHNOLOGY TRAINING: A CASE STUDY IN SURAKARTA MADRASAH

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Abstract

This study aims to describe the experiences of Islamic Religious Education (IRE) teachers in implementing educational technology after participating in training. This research employed a descriptive qualitative approach based on a case study design, with data collected through observation, interviews, and documentation. The study involved 12 Islamic Religious Education teachers namely Ihksan Yulianto, Mustamik, Joko Nugroho, Nuruddin, Pujiyono, Nunik, Mulyadi, Ria Isngadi, Teja, Ivan, and Rohmadi who teach at four madrasahs in Boyolali Regency. These participants were selected purposively to represent variations in teaching experience, age, and school context. The findings suggest that educational technology training has contributed to enhancing teachers' pedagogical competence in several aspects. Teachers reported becoming more confident and capable of utilising digital media such as interactive PowerPoint, Canva, Google Classroom, YouTube, Kahoot, and Google Forms to make learning materials more varied and engaging. They also demonstrated the ability to integrate technology systematically into lesson plans to design more innovative and contextually relevant learning activities. Furthermore, teachers observed an improvement in student participation and creativity during lessons involving digital tools. While these findings are based on the participants' experiences within the studied schools, they provide valuable insights into how educational technology training can support pedagogical improvement in Islamic Religious Education without generalising beyond the studied context.

Keywords: Islamic Religious Education, educational technology, teacher training, digital learning tools, pedagogical competence

INTRODUCTION | مقدمة

Education plays a crucial role in national development, particularly in the era of globalisation and technological advancement, which demands a superior generation with noble character and the ability to compete globally. One of the determining factors for educational success is the quality of teachers, who act as instructors, facilitators, motivators, and inspirators (Sijabat et al., 2022). Teacher quality can be measured by their competence and work discipline, which encompasses pedagogical, social, personality, and professional competencies (Damanik, 2019). According to Law No. 14 of 2005, competence is a set of knowledge, skills, and behaviours that teachers or lecturers must possess, internalise, and master in carrying out their professional duties (Damanik et al, 2019).

Pedagogical competence is a key aspect of the learning process (Jahidi, 2017). In the context of Islamic Religious Education, this competence is crucial for conveying Islamic values not only theoretically but also through the affective and psychomotor domains of students. However, various studies and observations indicate that the pedagogical competence of Islamic Religious Education teachers remains low, particularly in the planning, implementation, and evaluation of innovative and effective learning. Core competencies of a professional teacher include developing pedagogical materials, mentoring students, developing educational curricula, and developing private clients (Jaya et al., 2023). One cause is the lack of optimal utilisation of educational technology, resulting in a monotonous and less engaging learning process for students (Triyono, 2018).

Another emerging issue is the lack of relevant and sustainable training in educational technology, particularly contextual and applicable training. Limited access to training and low teacher motivation—which can be influenced by age, work culture, and school facilities and infrastructure—also hinder technological mastery. As a result, many Islamic Education teachers are unable to integrate technology into their learning due to current demands. However, educational technology training can be a strategic solution because it provides teachers with practical experience in utilising various digital applications, media, and platforms (Nindiati et al., 2024). Technology can enliven the learning environment, facilitate evaluation, and increase learning effectiveness (Effendi, 2019; Mulyani, 2021; Anam, 2021; Permana et al., 2024). Although several agencies and local governments have conducted training, its effectiveness still requires further study, particularly regarding its impact on improving the pedagogical competence of Islamic Education teachers.

This condition is increasingly important to consider in the implementation of the Independent Curriculum, which demands creativity, adaptation, differentiated learning, and project-based learning. Teachers are required to be able to utilize technology as an integral part of learning (Goldan & Schwab, 2020; Maulidan et al., 2025). Therefore, improving pedagogical competence through educational technology training is not merely an effort to develop teachers' professionalism but also a strategy for adapting to the transformation of 21st-century education (Atmojo et al., 2024).

METHOD | منهج

Education plays a crucial role in national development, particularly in the era of globalization and technological advancement, which demands a superior generation with noble character and the ability to compete globally. One of the determining factors for educational success is the quality of teachers, who act as instructors, facilitators, motivators, and inspirators (Sijabat et al., 2022). Teacher quality can be measured by their competence and work discipline, which encompasses pedagogical, social, personality, and professional competencies (Damanik, 2019). According to Law No. 14 of 2005, competence is a set of knowledge, skills, and behaviours that teachers or lecturers must possess, internalize, and master in carrying out their professional duties (Damanik et al, 2019).

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RESULT | نتائج

Educational technology training supports improving teachers' pedagogical competence in Islamic Religious Education

Educational technology training significantly contributes to the skills of Islamic Religious Education teachers in utilising digital learning media. (Arikarani, Y. 2024). Before the training, most teachers relied solely on conventional lecture methods, whiteboards, and textbooks as their primary learning resources. This made the learning process less varied and less engaging for students. After the training, teachers are able to use various digital media, such as Google Slides, Canva for Education, Kahoot!, Quizizz, and Learning Management System platforms, to deliver materials on Aqidah Akhlak, Fiqh, and Islamic Cultural History visually and interactively. This mastery is not limited to the use of tools, but also includes the ability to select media appropriate to learning objectives, material characteristics, and student ability levels. This allows teachers to be more creative in designing materials by combining text, images, audio, and video, allowing abstract concepts in Islamic teachings to be conveyed more concretely and easily understood. For example, in discussing the pillars of faith, teachers can utilise animated videos about angels and their duties, or show documentation of the history of the development of Islam in various parts of the world. These findings indicate that the digital media utilisation skills acquired by teachers after the training have enriched the variety of learning strategies, increased the appeal of the material, and facilitated the delivery of religious education messages with moral and spiritual values. (Delvia et al., 2025).

The results indicate that educational technology training encouraged Islamic Religious

Education teachers to systematically integrate technology into their lesson plans. Before the training, teachers' use of technology was incidental and not clearly stated in lesson plans. For example, teachers sometimes played videos or opened PowerPoint presentations without instructions on how to use them in the lesson plan. Post-training, teachers began to incorporate technology use into every component of the lesson, from the introductory, core, and closing activities. In the introductory activities, technology was used to provide apperception through short videos or interactive quizzes based on online applications. In the core activities, technology was utilised to present material in the form of infographics or simulations and to facilitate online group discussions. Meanwhile, in the closing activities, teachers utilised quiz-based evaluation applications to directly measure student understanding. This integration also made teachers more aware of the importance of selecting applications or media relevant to learning objectives. They can adapt methods and media to student characteristics, both in face-to-face and distance learning. This allows lesson planning to be more structured, measurable, and flexible, adapting to technological developments and student needs. (Koiri, M. 2025).

Educational technology training has a direct impact on increasing student interaction and participation in Islamic Religious Education (IS) learning. Previously, student participation tended to be low because learning was one-way, with the teacher being the centre of information while students were merely passive recipients (Ritonga, 2025). Once teachers mastered the technology post-training, the interaction pattern shifted to active learning. Teachers utilised interactive quizzes, online discussion forums, app-based educational games, and collaborative projects that required students to search for, process, and present information. For example, when discussing the topic of morality toward parents, students were asked to create a short video about practising respect for parents at home and then upload it to a learning platform for class discussion. Students also became more confident in asking questions and expressing their opinions because the learning media used facilitated two-way communication. Applications such as Mentimeter or Padlet allow students to provide anonymous responses, allowing even shy students to actively participate. In addition to improving understanding of the material, this active participation also develops 21st-century skills, such as critical thinking, collaboration, creativity, and digital literacy, all of which support the mission of Islamic Religious Education to shape individuals who are faithful, knowledgeable, and have noble morals. (Marpaung, 2025).

Thickness 1. Educational Technology Training in Improving the Pedagogical Competence of Islamic Religious Education Teachers

Key Findings	Finding Indicators	Information
Improving Skills in Utilising Digital Learning Media	Teachers' ability to use technology-based learning media and platforms	After the training, Islamic Religious Education teachers are more confident in using digital media such as interactive PowerPoint, Canva, Google Classroom, and YouTube, so that the presentation of material is more varied than before when only using a blackboard and books.
Technology Integration in Learning Implementation Plans (RPP)	Learning planning that integrates educational technology	Islamic Religious Education teachers are now integrating technology into their lesson plans, such as Kahoot quizzes, illustrative videos, and Google Form assignments, so that technology becomes a planned part of a more targeted and optimal learning strategy.
Increasing Student Interaction and Participation	Student engagement in technology-based learning	The use of technology makes students more interested in learning, active in discussions, creative, and able to work together through digital quizzes, application presentations, and collaborative projects.

The conclusion from this table is that the training provided to Islamic Religious Education teachers significantly impacted the quality of learning. First, teachers' skills in utilising digital media improved, resulting in more varied and engaging material delivery. Second, teachers began

to integrate technology in a planned manner into lesson plans, making it part of the learning strategy, not just an add-on. Third, technology-based learning successfully increased student interest, participation, and creativity, as well as fostering collaboration in the classroom (Auliyah et al., 2025).

Experience of Islamic Religious Education teachers in implementing educational technology after attending training

The educational technology training attended by Islamic Religious Education teachers has had a significant impact on improving their skills in operating technological devices and utilising learning applications. Before the training, most Islamic Religious Education teachers were still at a basic level in using technology. They generally only used projectors to display simple presentations or show previously downloaded videos. Many teachers were unfamiliar with creating their digital learning content and tended to rely on materials from printed textbooks or readily available resources. After the training, there was a significant jump in skills. Teachers became proficient in creating interactive learning media using Microsoft PowerPoint with animation features, Canva for educational graphic design, and Google Sites for creating material portals. Some teachers were even able to utilise Learning Management Systems such as Google Classroom, Moodle, and Edmodo to manage virtual classes, assign assignments, automatically correct students, and interact with students outside of face-to-face hours. (Firdaus, et al., 2024).

The training also introduced teachers to techniques for recording learning videos using mobile phones or laptops, then uploading them to YouTube or the class WhatsApp group. This made it easier for students who were unable to attend to continue following the material. These changes demonstrate that teachers are not only mastering the tools but also understanding how technology can be a means to reach students more broadly and flexibly. The training encouraged Islamic Religious Education teachers to rethink their learning strategies. While previously technology was merely a supplement, it is now an integral part of lesson planning. In developing Lesson Plans, teachers are starting to add a dedicated column for the use of media and technology. For example, Introduction: Teachers utilise short, inspirational videos from YouTube to build student motivation. Core Activities: Using Padlet or Mentimeter for online group discussions that can still be accessed after the lesson is over. Closing: Conducting quizzes using Kahoot or Quizizz to directly assess student understanding. Teachers are also starting to utilise digital infographics to explain complex material such as the history of Islam, the pillars of faith, or the concept of noble character. With engaging visual displays, students can grasp the material more quickly and retain it longer. Additionally, teachers are combining technology with active learning methods such as the flipped classroom, where students learn material through videos or digital modules at home, then use face-to-face classroom activities for discussion, practice, or problem-solving. This creates a more in-depth and interactive learning experience (Wicaksono et al, 2025).

The most noticeable impact of post-training technology implementation is increased student participation and motivation. The varied learning media make students more interested in participating in lessons. They feel that Islamic Religious Education learning is no longer monotonous or boring, but rather enjoyable and relevant to everyday life. When teachers use Kahoot for quizzes, the classroom atmosphere becomes more lively. Students compete healthily to achieve the highest scores while learning in a fun way. When using Padlet, students freely express their opinions without feeling embarrassed, as they can write anonymously. (Saidah, 2025). Student creativity also increases. For example, when the teacher assigns them to create a short Islamic preaching video using their mobile phones, students are able to combine religious

material with creative visuals, music, and touching narratives. Some also create digital posters about noble morals using Canva and then share them on school social media. This increased motivation is also evident in the number of students accessing digital materials outside of class hours. They take the opportunity to review lessons, rewatch learning videos, or try interactive practice questions. This shows that technology encourages more continuous learning that is not limited to school hours (Wibowo, 2023).

Table 2. Experiences of Islamic Education Teachers in Implementing Educational Technology after Participating in Training

Key Findings	Indicator	Information
Digital media skills enhancement	Ability to use learning platforms	Teachers are more confident in using digital media such as interactive PowerPoint, Canva, Google Classroom, and YouTube compared to previously only using blackboards and books.
Technology Integration in Learning Activity Plans	Technology-based learning planning	Teachers integrate technologies such as Kahoot, illustrative videos, and Google Forms into their Learning Activity Plans to make learning more focused.
Increased student interaction	Student participation in digital learning	The use of technology makes students more active, creative, and collaborative through digital quizzes, presentations, and joint projects.

Based on the findings in the table, it can be concluded that educational technology training has had a significant positive impact on Islamic Religious Education teachers. First, teachers' skills in utilising digital learning media have improved, making them more confident and creative in presenting material. Second, teachers are able to systematically integrate technology into their Learning Activity Plans, making learning more focused and varied. Third, the use of technology has resulted in increased student interaction and participation, as evidenced by their enthusiasm, creativity, and collaborative skills during learning. This demonstrates that technology not only facilitates the delivery of material but also creates a more active and enjoyable learning environment (Afini et al, 2025).

DISCUSSION | مناقشة

Research results indicate that educational technology training plays an important role in enhancing the pedagogical competence of Islamic Education (PAI) teachers. Teachers' pedagogical competence is related to their ability to design, implement, and evaluate effective and meaningful learning. The training provided encourages teachers to transform from conventional approaches to more interactive, adaptive, and relevant digital-based learning that meets the needs of 21st-century students. Before participating in training, most Islamic Education (PAI) teachers relied solely on lecture methods and the use of simple media such as blackboards and textbooks. This condition made the learning process one-way and less engaging for students. After the training, teachers showed significant improvement in their ability to use various digital media such as Google Slides, Canva for Education, Kahoot!, and LMS. These media not only enrich the variety of material presentation but also help teachers concretize abstract concepts in Islamic teachings through visual and interactive approaches (Arikarani, 2024; Delvia et al., 2025).

In addition to improving technical skills, training also impacts teachers' ability in planning technology-based learning. Before the training, the integration of technology in the Lesson Plan (RPP) was incidental and unstructured. However, after the training, teachers began systematically including the use of digital media at every stage of learning. For example, using videos for aperception, infographics for presenting core material, and online quiz applications for learning assessment. This systematic integration reflects an increased teacher awareness of the

importance of technology in achieving effective and efficient learning objectives (Koiri, 2025; Wicaksono et al., 2025). Another significant improvement can be seen in student interaction and participation. Technology enables more active two-way communication between teachers and students. Through applications such as Padlet and Mentimeter, students can express their opinions without fear, creating a more inclusive and democratic classroom atmosphere. Project-based learning activities and interactive quizzes also enhance students' motivation and collaborative skills. Students not only understand religious material cognitively but are also able to internalize Islamic values through creative activities such as creating dakwah videos or digital posters (Marpaung, 2025; Saidah, 2025).

Furthermore, this technology-based learning also develops 21st-century skills in students, such as critical thinking, creativity, collaboration, and digital literacy. Islamic Education teachers act as facilitators who guide students not only to understand Islamic teachings theoretically but also to relate them to the context of modern life. This aligns with the view of Firdaus et al. (2024) that teachers' ability to utilize technology contributes to the creation of contextual and relevant learning. Overall, the results of this study reinforce previous findings which state that educational technology training can enhance teacher professionalism, particularly in pedagogical aspects and digital literacy (Auliyah et al., 2025; Afini et al., 2025). With teachers' increased ability to design technology-based learning, the quality of the PAI teaching and learning process becomes more engaging, meaningful, and impactful on the development of students' character who are faithful, knowledgeable, and morally virtuous.

CONCLUSSION | خاتمة

From the results of the study and discussion regarding improving teachers' pedagogical competence through educational technology training in Islamic religious education, two conclusions can be drawn. Educational technology training has been proven to significantly improve the competence of Islamic religious education teachers, both in terms of skills and lesson planning. Teachers not only become more proficient in using various digital media such as interactive PowerPoint, Canva, Google Classroom, and YouTube, but they are also able to integrate them in a planned manner into their lesson plans through the use of digital quizzes, illustrative videos, and online platform-based assignments.

This increased competence has a direct impact on a more engaging, participatory, and collaborative learning environment, resulting in more enthusiastic, creative, and active students in the learning process. Thus, educational technology serves not only as a tool but also as a learning strategy that can optimise student engagement and learning outcomes. Schools need to provide stable internet facilities and allocate weekly time for teachers to develop and refine digital learning media. Training should be continuous rather than one-time, with follow-up mentoring sessions to ensure sustained implementation and improvement. Collaboration among teachers should be encouraged through digital learning communities or peer-sharing sessions to exchange experiences, media designs, and best practices in technology integration.

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