

## Digital Learning Training for Islamic Religious Education Students: A Participatory Action Research at STAI Ibnurusyd

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### Article history

Submitted: 2025/11/23; Revised: 2026/02/23; Accepted: 2026/03/05

### Abstract

This community service program aimed to improve the digital competence of Islamic Religious Education (PAI) students at STAI Ibnurusyd, who served as the main participants and partners, through digital-based learning training to support Indonesia's National Digital Education Transformation policy. The program was conducted at STAI Ibnurusyd, involving 30 PAI students, using a Participatory Action Research (PAR) approach comprising planning, action, observation, and reflection stages. Data were collected through pre-post questionnaires using a Likert scale to measure six indicators: understanding digital learning concepts, ability to use digital platforms, creativity in media design, digital literacy, collaborative attitudes, and innovation in microteaching practice, supported by observation and interview data. The results showed an average increase of 50% in participants' scores across the six indicators, moving from the "moderate" to the "high" competence category. Students demonstrated improved ability to design interactive learning media using applications such as Google Classroom, Canva Edu, and Quizizz. The main outputs of this program include a digital learning training module, examples of interactive learning media products, and a practical implementation model that can be replicated in similar institutions. To support sustainability, a digital learning community was established among students to ensure continued practice and mentoring after the program. This program contributes to strengthening prospective PAI teachers' readiness to become professional educators with digital competence and supports innovation in Islamic higher education.

### Keywords

Digital Learning; Participatory Action Research; PAI Students; Teacher Professionalism; Transformation of Education



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## **1. INTRODUCTION**

The rapid development of digital technology has significantly transformed various aspects of human life, including education. In the era of the Industrial Revolution 4.0 and the transition toward Society 5.0, higher education institutions are required to integrate digital technology into learning processes to improve quality, accessibility, and competitiveness (Abduvakhidov, Elzara, and Elvir 2021; Alenezi 2023). The Indonesian government has also emphasized this transformation through the National Education Digital Transformation policy within the 2020–2035 Education Roadmap, which encourages the use of digital platforms, interactive media, and technology-based learning resources across educational levels (Dewi 2016; Dasar 2021). In the context of Islamic Religious Education (PAI), digitalization is not only related to technological adaptation but also to the transformation of Islamic values into creative, interactive, and contextual learning experiences that are relevant to the digital generation (Nurdin 2016; Wijaya and Aini 2020).

However, the actual conditions indicate that students' digital competence, particularly that of prospective Islamic Religious Education (PAI) teachers, remains relatively limited. This situation was identified among students of the Islamic Religious Education Study Program at STAI Ibnurusyd, as the partner institution in this community service program. Based on preliminary observations and interviews with lecturers and students, it was found that most students still relied on conventional teaching media such as simple PowerPoint slides and text-based materials, with minimal use of interactive digital platforms. The participants were 30 students from semesters 4 and 6 preparing for microteaching practice. Initial assessments showed that students' abilities in digital literacy, media design, and use of learning management systems were still at a moderate to low level. These limitations may affect the effectiveness of future classroom learning when students become professional PAI teachers, especially in meeting the demands of 21st-century education.

Previous studies have demonstrated that integrating digital technology into Islamic education can improve student engagement and learning outcomes. For example, Azzahra and Prasetyo (Azzahra & Prasetyo, 2024) found that interactive digital media increased motivation and achievement in PAI learning, while Ngibad et al. (Ngibad et al., 2020) reported that e-learning training improved university students' ability to develop digital learning content. Nevertheless, most existing studies focus on formal research settings or on teacher and student training in large universities. Community service programs that specifically target PAI students in regional Islamic higher education institutions, particularly those that use a participatory approach

combining technical skills with reflective awareness of Islamic educational values, remain limited. This gap highlights the need for an applicable, contextual, participatory, and sustainable training model.

To address these challenges, a digital learning training program for Islamic Religious Education (PAI) students at STAI Ibnurusyd was implemented using a Participatory Action Research (PAR) approach. The program involved students actively in planning, practice, reflection, and evaluation activities to strengthen both technical competence and adaptive attitudes toward educational technology. The novelty of this program lies in integrating participatory training methods with Islamic educational values to develop a contextual digital learning model for prospective PAI teachers in regional higher education institutions.

Therefore, the objectives of this community service program were: (1) to improve students' understanding of digital learning concepts; (2) to enhance their skills in using digital platforms and designing interactive learning media; (3) to foster collaborative and innovative attitudes in microteaching practice; and (4) to produce practical training outputs that can be implemented sustainably within the Islamic Religious Education Study Program at STAI Ibnurusyd.

## **2. METHODS**

This community service activity employed the Participatory Action Research (PAR) method, a participatory approach that emphasizes the active involvement of participants in all stages of the program, including planning, implementation, observation, and reflection (Chevalier and Buckles 2019). This method was selected because the training aimed not only to improve students' knowledge and technical skills but also to foster collaborative, critical, and innovative attitudes toward the digitalization of Islamic education (Chevalier and Buckles 2019).

The subjects of this activity were 30 students of the Islamic Religious Education (PAI) Study Program at STAI Ibnurusyd, in semesters 5–7, preparing for microteaching practice. The sampling technique used was purposive sampling, with selection criteria including: (1) active enrollment in the PAI study program, (2) participation in academic learning activities, and (3) interest in developing digital learning media. The activity was conducted at STAI Ibnurusyd campus from March to May 2025, spanning 8 weeks and comprising workshops, guided practice sessions, and mentoring activities.

This program used a mixed-method approach, combining qualitative and quantitative data. Qualitative data were collected to explore students' experiences, perceptions, and behavioral changes related to the implementation of digital learning.

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In contrast, quantitative data were used to measure improvements in digital competence before and after the training.

The instruments used in this activity included:

Pre-test and post-test questionnaires, consisting of 24 items measured using a 5-point Likert scale (1 = very low to 5 = very high), covering six competency indicators:

- (a) understanding digital learning concepts,
- (b) ability to use digital platforms,
- (c) creativity in learning media design,
- (d) digital literacy skills,
- (e) collaborative attitudes, and
- (f) innovation in microteaching practice.

The instrument was validated through expert judgment by two educational technology lecturers. Observation sheets to record participant engagement and performance during training activities. Reflective interviews to obtain deeper qualitative insights into participant experiences. Documentation of students' digital learning products.

Data analysis was conducted using descriptive statistics, including percentages and normalized gain scores (N-gain), to determine the level of competency improvement between pre-test and post-test results. Qualitative data from observations and interviews were analyzed using thematic analysis to identify patterns of behavioral change and participant responses to the training program. The implementation stages followed the four main PAR cycles: planning, action, observation, and reflection, as presented in Table 1.

**Table 1.** Stages of Participatory Action Research Implementation

| Stage       | Activities                                                                                                           | Output                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Planning    | Needs analysis, preparation of training modules, development of instruments, and coordination with the study program | Training design and instruments           |
| Action      | Workshops on digital learning, practice using Canva Edu, Google Classroom, and Quizizz, and microteaching activities | Students' digital learning media products |
| Observation | Monitoring participation, evaluating digital products, documenting activities                                        | Observation data and documentation        |

|            |                                                                                        |                                                     |
|------------|----------------------------------------------------------------------------------------|-----------------------------------------------------|
| Reflection | Evaluation discussions, feedback sessions, analysis of results, and follow-up planning | Improvement recommendations and sustainability plan |
|------------|----------------------------------------------------------------------------------------|-----------------------------------------------------|

### 3. FINDINGS AND DISCUSSION

#### 3.1. Findings

The findings of this community service program were obtained from pre-test and post-test questionnaires administered to 30 participants ( $n = 30$ ) using a 5-point Likert scale (1 = very low to 5 = very high), supported by observation sheets, reflective interviews, and documentation of students' digital products. The questionnaire instrument consisted of 24 items covering six competency indicators: understanding digital learning concepts, ability to use digital platforms, creativity in media design, digital literacy and collaboration, innovation in microteaching, and readiness to support digital transformation policies. The percentage scores presented in Table 2 represent the average competency achievement before and after the training.

**Table 2.** Findings of the Digital Islamic Education Training Program ( $n = 30$ )

| No | Aspects Measured (Instrument Indicators)                            | Quantitative Findings (Pre-Post Training) | Qualitative Findings (Observation and Reflection)                                                         | Implications for Digital Transformation                                                                     |
|----|---------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 1  | Understanding the concept of digital Islamic Education learning     | Increase from 42% to 92% (+50%)           | Students began to understand the importance of integrating Islamic values into technology-based learning. | Paradigm shift: digitalization is not only technical but also a medium for da'wah and strengthening values. |
| 2  | Ability to use digital platforms (Google Classroom, Canva, Quizizz) | Increase from 35% to 88% (+53%)           | Students showed enthusiasm in creating digital PAI content using various applications.                    | Improved readiness to become technology-adaptive PAI teachers.                                              |
| 3  | Creativity in digital learning media design                         | Increase from 28% to 84% (+56%)           | Various innovations emerged,                                                                              | Supports the creation of interactive learning                                                               |

|   |                                                                           |                                 |                                                                                    |                                                                                     |
|---|---------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |                                                                           |                                 | including learning videos, infographics, and PAI e-modules.                        | suitable for the digital generation.                                                |
| 4 | Collaborative attitudes and digital literacy                              | Increase from 56% to 90% (+34%) | Collaborative student groups were formed in media production activities.           | Strengthens teamwork culture and digital literacy within the campus environment.    |
| 5 | Innovation in Islamic Education: Microteaching Implementation             | Increase from 30% to 86% (+56%) | Students were able to conduct teaching practice independently using digital media. | Learning becomes more effective and project-based.                                  |
| 6 | Readiness to support the National Education Digital Transformation policy | Increase from 40% to 91% (+51%) | Students demonstrated high motivation to innovate and apply digital learning.      | Builds critical awareness to support national digitalization policies in education. |

Data source: Pre-test and post-test questionnaire results (n = 30), observation sheets, reflective interviews, and documentation of participants' digital learning products developed during the training program.

### 3.2. Discussion

#### 3.2.1. Improvement in Understanding the Concept of Digital Islamic Education Learning

The training program significantly improved students' understanding of the concept of digital Islamic Religious Education (PAI) learning, as reflected in the increase in competency scores from 42% to 92%. This substantial improvement indicates that participants experienced a paradigm shift in their perception of digital technology, moving from viewing it merely as a supporting tool to recognizing it as an integral component of meaningful, value-based Islamic learning. Conceptual understanding plays a crucial role in shaping teachers' readiness, as the integration of

technology in education is not solely a technical matter but also involves pedagogical and epistemological transformations. Teachers must be able to connect technological tools with instructional objectives, learning content, and students' characteristics to create effective learning experiences (Mishra and Koehler, 2006).

From a theoretical perspective, the improvement in conceptual understanding observed in this program aligns with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the importance of integrating technological knowledge, pedagogical knowledge, and content knowledge simultaneously in teaching practice (Mishra and Koehler 2006; Walensky et al. 2023). For prospective Islamic Religious Education teachers, this integration is particularly important because religious education requires not only cognitive knowledge but also affective and spiritual dimensions. Digital learning media, when properly conceptualized, can function as a medium for conveying Islamic values in ways that are contextual, interactive, and relevant to students' daily experiences in the digital era.

Furthermore, the paradigm shift identified among participants also reflects the characteristics of learning in the Society 5.0 era, where education is expected to combine technological advancement with human-centered values (Sabandar and Ramadhani 2023; Agustina et al. 2022). In Islamic education, this perspective is highly relevant because technology should not replace human interaction but rather enhance the delivery of moral and spiritual messages. The improved conceptual understanding demonstrated by students suggests that participatory training methods can effectively foster awareness that digitalization is not contradictory to religious values but instead can strengthen the dissemination of Islamic teachings through innovative approaches. This finding supports previous research showing that integrating digital media into Islamic education can improve student engagement, motivation, and contextual understanding of religious content (Azzahra and Prasetyo 2024; Aisi, Susanto, and Isa 2025).

Another important implication of this improvement lies in the development of professional identity among prospective teachers. Understanding the concept of digital learning helps students build confidence in their ability to adapt to educational changes and technological developments. According to constructivist learning theory, knowledge is actively constructed through experience and reflection rather than passively received (Vygotsky 1978). The participatory approach used in this training allowed students to engage directly in designing and implementing digital learning

activities, thereby strengthening their conceptual understanding through experiential learning.

In addition, conceptual awareness of integrating Islamic values into digital media contributes to the development of ethical responsibility in the use of technology. Digital literacy in religious education should not only focus on technical competence but also on ethical considerations such as responsible communication, authenticity of religious sources, and respectful online interaction (Ihsan et al., 2021; Susanto et al., 2023). Therefore, the improvement in conceptual understanding observed in this program demonstrates that participatory digital training can support both pedagogical competence and moral awareness among prospective Islamic Religious Education teachers. This outcome is essential for preparing educators who are capable of responding to the challenges of digital transformation while maintaining the integrity of Islamic educational values.

### **3.2.2. Enhancement of Ability to Use Digital Learning Platforms**

The ability of students to use digital learning platforms such as Google Classroom, Canva Edu, and Quizizz increased significantly from 35% to 88%, indicating substantial development in technological skills. This improvement demonstrates that hands-on participatory training can effectively reduce technological barriers and increase user confidence in adopting digital tools. The success of this intervention aligns with experiential learning theory, which states that knowledge acquisition becomes more meaningful when learners directly engage in practical activities and reflection processes (AlGerafi et al. 2023; David Ausubel 2015). Through guided practice sessions, students were not only introduced to digital applications but also encouraged to explore their pedagogical functions in Islamic education contexts.

From the perspective of digital competence theory, the ability to operate digital platforms is part of a broader competency framework that includes information literacy, communication, content creation, safety, and problem-solving skills (Rahmatullah et al. 2022). The improvement observed in this study suggests that structured training programs can accelerate the development of these competencies among prospective teachers. Previous studies also confirm that training interventions significantly improve teachers' readiness to integrate technology into classroom instruction, particularly when participants receive mentoring and continuous support (Fauzi and Hosna 2022).

The enthusiasm students demonstrated during the training further indicates that motivation plays a critical role in technology adoption. According to the Technology Acceptance Model (TAM), individuals are more likely to adopt

technology when they perceive it as useful and easy to use (Yadi et al. 2023). The training activities provided students with opportunities to experience the practical benefits of digital platforms, including simplifying instructional design and enhancing classroom interaction. As a result, students developed positive attitudes toward educational technology, which is an essential factor for sustainable digital transformation in education.

For Islamic Religious Education, the ability to use digital platforms has strategic implications because digital media can expand access to religious knowledge and support interactive learning environments. Therefore, improving students' technological skills directly prepares future educators who are adaptable to technological change and capable of implementing innovative learning approaches.

### **3.2.3. Development of Creativity in Digital Learning Media Design**

Creativity in designing digital learning media increased from 28% to 84%, ranking among the greatest improvements across all indicators. Students produced a range of innovative outputs, including instructional videos, infographics, and digital modules for Islamic Religious Education. This finding highlights the effectiveness of participatory training approaches in fostering creativity through experiential and project-based learning activities. According to constructivist theory, creativity develops when learners actively construct knowledge through exploration, experimentation, and reflection (Bruner 1983). The training environment provided students with opportunities to experiment with digital tools, thereby enhancing their creative thinking and problem-solving skills.

Creativity is considered a core competence in 21st-century education, alongside critical thinking, collaboration, and communication (Kamal et al. 2020). For prospective Islamic Religious Education teachers, creativity is particularly important because religious content is often perceived as abstract or monotonous when delivered using traditional methods. The integration of multimedia elements, such as visuals, animations, and interactive quizzes, can make learning more engaging and meaningful. Previous studies have shown that multimedia learning enhances comprehension and retention because it combines verbal and visual information processing (Mayer 2009).

The emergence of diverse digital learning products also underscores the importance of integrating technology and pedagogy. When students understand how to combine content knowledge with digital tools, they are better able to create innovative learning resources. This finding supports research indicating that teacher

training programs focusing on digital media development significantly improve instructional creativity and innovation (Ngibad et al. 2020).

Thus, the improvement in creativity observed in this program suggests that participatory digital training not only enhances technical competence but also stimulates innovation in Islamic education practices. This outcome is crucial for ensuring that religious education remains relevant to the learning preferences of the digital generation.

#### **3.2.4. Strengthening Collaborative Attitudes and Digital Literacy**

The collaborative attitude and digital literacy indicator increased from 56% to 90%, indicating that the training program successfully fostered teamwork and social learning among participants. Collaborative learning activities during media production encouraged peer interaction, knowledge sharing, and mutual support. According to social constructivist theory, learning occurs most effectively through social interaction and collaboration, where individuals construct knowledge together through dialogue and shared experiences (Vygotsky 1978). The formation of collaborative groups in this program reflects the importance of community-based learning in developing digital competence.

Digital literacy is not merely a technical skill but also includes the ability to evaluate information critically, communicate effectively, and participate responsibly in digital environments (Nasution et al. 2023). The training activities promoted these competencies by encouraging students to work collectively in designing digital learning media, thereby strengthening both technological and interpersonal skills. Previous research also suggests that collaborative digital projects enhance student engagement and promote deeper learning outcomes (Johnson 2002).

The establishment of collaborative learning communities within the campus environment contributes to sustainability because peer support can continue beyond the training period. Such communities play a crucial role in maintaining innovation culture and continuous professional development among future educators. Therefore, strengthening collaboration and digital literacy is essential for supporting long-term institutional digital transformation.

#### **3.2.5. Innovation in Microteaching Implementation**

The implementation of innovation in microteaching improved significantly from 30% to 86%, demonstrating that students were able to apply digital media independently in teaching practice. This improvement confirms that integrating technical training with pedagogical application is essential for developing professional competence among prospective teachers. Microteaching activities allowed students to

simulate real teaching situations while experimenting with digital tools, thereby bridging the gap between theory and practice. According to pedagogical competence theory, teaching skills develop effectively when learners engage in reflective practice and receive feedback (Schon 1983).

The integration of project-based learning elements in microteaching also contributed to improved outcomes. Project-based learning emphasizes active participation, problem-solving, and authentic tasks, which are effective for developing higher-order thinking skills (Thomas, 1970). By designing digital learning media and implementing them in teaching simulations, students experienced meaningful learning processes that strengthened both confidence and competence.

For Islamic Religious Education, innovative microteaching practices are particularly important because they demonstrate how religious values can be conveyed through engaging methods. Previous studies indicate that technology-supported teaching practices improve student motivation and participation in religious education contexts (Azzahra and Prasetyo 2024). Therefore, the improvement in this indicator reflects students' readiness to implement innovative, student-centered learning approaches in their future teaching careers.

### **3.2.6. Readiness to Support the National Digital Transformation Policy**

Students' readiness to support the National Education Digital Transformation policy increased from 40% to 91%, indicating the development of positive attitudes toward educational innovation and technological adaptation. This finding suggests that participatory training programs can influence not only competence but also professional mindset and motivation. According to change management theory in education, successful transformation requires both skill development and attitudinal readiness among stakeholders (Fullan 2007). The high level of readiness observed among participants reflects the program's effectiveness in fostering awareness of the importance of digital transformation in education.

Motivation to innovate is also closely related to self-efficacy, which refers to an individual's belief in their ability to perform tasks successfully (Bandura 1986). The training experience enhanced students' confidence in using digital technology, thereby increasing their willingness to adopt innovative teaching practices. This psychological readiness is essential for ensuring the sustainable implementation of digital learning in educational institutions.

Furthermore, aligning institutional programs with national policies strengthens the relevance and impact of community service activities. The improved readiness among participants indicates that higher education institutions play a strategic role in

preparing future educators who can contribute to national educational transformation. Therefore, this program not only improves individual competencies but also supports broader national educational development goals.

#### 4. CONCLUSION

This community service program successfully achieved its objectives in improving the digital competence of Islamic Religious Education (PAI) students at STAI Ibnurusyd. The findings showed a substantial increase across six competency indicators: understanding digital learning concepts, ability to use digital platforms, creativity in media design, collaborative attitudes, innovation in microteaching, and readiness to support educational digital transformation, with an average improvement of approximately 50%. These results confirm that participatory-based digital training effectively strengthens students' readiness to integrate technology into Islamic education practices. The main contribution of this program lies in developing a participatory digital training model that integrates technological skills with Islamic educational values, serving as a practical reference for similar training initiatives in Islamic higher education institutions. This model demonstrates that combining hands-on practice, collaboration, and reflection can lead to meaningful competency development among prospective teachers.

This activity has several limitations, including the relatively small number of participants and the short implementation period, which may limit generalizability and the measurement of the program's long-term impact. Therefore, it is recommended that Islamic higher education institutions integrate digital learning training into the curriculum or regular student development programs, lecturers provide continuous mentoring through digital learning communities, and future community service programs expand participant coverage and conduct longitudinal evaluations to measure the sustainability of competency improvements in real classroom settings.

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