

## THE RESILIENCE OF E-LEARNING BASED MERDEKA CURRICULUM TRAINING EFFECTIVENESS FOR ISLAMIC RELIGIOUS EDUCATION TEACHERS IN IMPROVING LEARNING QUALITY AT MAN LANDAK

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### Abstract

*Although existing literature on e-learning in PAI (Islamic Religious Education) often highlights its effectiveness, available insights remain limited regarding the resilience aspect of training programs, especially for teachers implementing the Merdeka Curriculum in resource-constrained 3T (frontier, outermost, and underdeveloped) regions. Thus, the purpose of this research is to analyze the resilience and effectiveness of e-learning-based training for the implementation of the Kurikulum Merdeka in improving the quality of learning by Islamic Religious Education teachers at MAN Landak. This research employs a qualitative descriptive approach, with data collected through observation, in-depth interviews, and documentation. The findings reveal that e-learning training significantly improves the pedagogical and professional competencies of PAI teachers. The training has proven resilient to changes in educational contexts and contributes positively to learning quality, as evidenced by increased student engagement, diverse teaching methods, and improved learning outcomes. The study highlights that such training demonstrates significant resilience to change, leading to improved PAI learning quality. Specifically, the e-learning program not only enhanced teachers' technical skills but also cultivated a new learning culture, fostering reflective, innovative, and continuously self-developing teachers prepared for 21st-century educational challenges. Furthermore, the e-learning method was found to be highly effective, especially within the Merdeka Belajar framework where practice is integral. This was evidenced by high student learning interest and increased engagement through practical application, which provided meaningful and in-depth learning experiences. The implementation of e-learning is deemed highly effective in delivering learning within the framework of the Kurikulum Merdeka.*

**Keywords:** Resilience; Kurikulum Merdeka; Islamic Religious Education Teachers; Learning Quality

## **A. Introduction**

The development of information and communication technology has brought significant changes in the world of education, including in the learning of Islamic Religious Education (PAI). According to Kemendikbudristek (2022), the rapid digital transformation demands all educational elements to adapt, not only in the use of learning media but also in the process of developing teachers' competencies. The Merdeka Curriculum, implemented by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, emphasizes learning that is more flexible, participatory, and student-centered. This curriculum requires teachers to be able to develop adaptive learning strategies according to individual student needs as well as local social and cultural dynamics.

In the context of Islamic Religious Education (PAI), this challenge becomes an opportunity to design learning that is more relevant to the needs of the times. The use of digital technology in PAI can enrich teaching methods and media, making them more interesting and contextual for digital-native students. PAI teachers are not only required to master the subject matter but also need to have pedagogical and digital competencies to be able to present meaningful and transformative learning. According to Huda (2022), the integration of technology in religious learning can be a means to instill Islamic values with an approach that is more interactive and in line with the characteristics of the current generation. Therefore, strengthening teacher capacity through technology-based training is very important, in line with the spirit of the Merdeka Curriculum which provides space for innovation and freedom in the learning process (Munir, 2017).

To support the implementation of this curriculum, e-learning-based training for PAI teachers is crucial. E-learning is considered an innovative solution in teacher professional development because it can reach a wider audience, provide training materials flexibly, and enable collaboration and independent learning. This training is expected to improve teachers' professional competence in designing and implementing effective, contextual, and innovative learning according to the principles of the Merdeka Curriculum. E-learning becomes a strategic solution in teacher training because it is flexible in terms of time and place, and is able to reach wide areas. In the PAI context, e-learning allows the integration of religious values with digital approaches relevant to the character of today's students (Slamet, 2021b). Through e-learning, PAI teachers can access various up-to-date learning resources based on real needs in the field, including training modules, learning videos, discussion forums, and digital-based assessments. Thus, the training process is no longer one-way, but more interactive and collaborative. In addition, this training model encourages teachers to develop learning independence, reflect on their teaching practices, and adapt to ever-evolving social and technological dynamics. This aligns with the goals of the Merdeka Curriculum which emphasizes strengthening teacher competence as transformative learning facilitators who are pro-student (Prasojo & Mulyani, 2020).

However, the effectiveness of such training is not only determined by the quality of the materials and methods used but also by the resilience of the training itself in facing various challenges and dynamics of change. The resilience referred to includes the ability of the training to remain relevant, applicable, and able to answer real needs in the field, including adaptation to digital technology developments, changes in educational regulations, and differences in the social and geographical backgrounds of students. For this reason, a dynamic, contextual, and needs-based training design is needed for teachers in various regions. Training must be able to accommodate field challenges flexibly and sustainably, as well as provide space for teachers to innovate and reflect on their learning practices. According to Triningrum (2020), the success of training is largely determined by the extent to which the material provided can be applied in real situations, not just being theoretical. In addition, participatory and technology-based training approaches are proven to be more effective in building teacher professional resilience amidst the changing times (Mardapi, 2019). Therefore, the preparation of training programs needs to involve needs analysis, utilization of digital technology, and sustainable policy support so that training is not only academically relevant but also contributes to improving the quality of education at the educational unit level.

Although existing literature on e-learning in (Islamic Religious Education) often highlights its effectiveness, available insights remain limited regarding the resilience aspect of training programs, especially for teachers implementing the Merdeka Curriculum in resource-constrained 3T (frontier, outermost, and underdeveloped) regions. Therefore, this study is theoretically vital for developing more nuanced and context-aware teacher professional development models, and practically crucial for generating targeted, evidence-based strategies to ensure the sustainable improvement of PAI quality amidst the challenges in these often-overlooked educational settings. Through this research, it is hoped that a deeper understanding of the characteristics, challenges, and impacts of e-learning training on improving the quality of learning in the madrasah environment can be found. This research also aims to provide concrete recommendations in developing training that is more contextual, sustainable, and based on the real needs of teachers in the field.

## **B. Method**

This study uses a qualitative descriptive approach, which is a method aimed at describing and understanding phenomena that occur naturally and contextually without manipulating variables (Creswell, 2015). This approach was chosen because this research focuses on an in-depth exploration of the resilience and effectiveness of e-learning-based Merdeka Curriculum training implemented by Islamic Religious Education (PAI) teachers in an effort to improve the quality of learning. Qualitative research is considered relevant because it provides space for researchers to delve into events, experiences, and subjective perspectives of informants comprehensively and holistically (Sugiyono, 2019).

This research was conducted at MAN Landak, West Kalimantan, which was chosen because this madrasah has been actively implementing e-learning-based Merdeka Curriculum training for Islamic Religious Education (PAI) teachers. This location is considered representative for studying the effectiveness and resilience of training in the context of areas with limited digital infrastructure but with a high spirit in adapting to new national education policies. The research was conducted over three months, from January to March 2025, covering the processes of data collection, analysis, and reporting. In conducting observations for this study, the researcher adopted the role of a non-participant observer. The researcher observed the research subjects externally, without actively participating in the activities or interactions being observed. The researcher acted as a "spectator" or an independent observer. The purpose of this approach was to enable the researcher to maintain objectivity in observations without influencing the observed conditions.

Informants were selected primarily through purposive sampling, based on criteria such as participation in e-learning training and active implementation of the Merdeka Curriculum, with the curriculum coordinator or vice principal for curriculum affairs included as additional key informants. The initial target was four main teacher informants, with the possibility of expanding this through snowball sampling to access other individuals with relevant experience. Data collection methods included direct observation of learning processes and teaching methodologies at MAN Landak, particularly concerning Merdeka curriculum implementation; documentation of learning activities using photos and videos; and questionnaires administered to 39 respondents. These respondents comprised 35 grade XI students experienced with e-learning in the Merdeka curriculum framework and 4 teachers at MAN Landak who utilize e-learning in their teaching.

To analyze the effectiveness of the data obtained from questionnaires, observations, and interviews with both student and educator respondents, the researcher employed a Method Triangulation approach. This Method Triangulation is an approach combining quantitative and qualitative data collection and analysis techniques (Sugiyono, 2019). The responses from both student and educator respondents (from the questionnaires) were categorized as very effective, effective, fairly effective, less effective, and not effective. Then, after obtaining these results, one individual representing each key category of response was selected for an interview.

Interviews were conducted semi-structurally, allowing the researcher to explore information flexibly and openly, while still referring to the main question guide. This technique was used to explore teachers' experiences in participating in training, the challenges they faced, the learning strategies applied, and their perceptions of the resilience and effectiveness of e-learning training.

Observations were made directly during classroom learning, to determine the extent to which teachers implement the results of the training into teaching practices,

especially in the use of digital media, the application of active learning methods, and student involvement in the learning process (Sugiyono, 2019). Meanwhile, document studies were used to supplement data obtained from interviews and observations. Documents reviewed included e-learning training materials, Merdeka Curriculum modules, lesson plans (RPP), training reports, and other learning tools directly related to curriculum implementation.

Data analysis in this study refers to the interactive model of Miles and Huberman (1994), a qualitative approach that emphasizes a cyclical, continuous, and interactive analysis process, often occurring concurrently with data collection. This model involves three main interrelated components: first, data reduction, which is the process of selecting, focusing, simplifying, and transforming raw field data through coding, summarizing, categorizing, and memoing to manage data volume and sharpen the analysis. Second, data display, which involves organizing reduced data into various forms such as narratives, tables, or matrices to facilitate the identification of patterns and relationships among information. Third, conclusion drawing and verification, where the researcher begins to identify themes, patterns, and propositions from the displayed data, then meticulously tests and verifies the validity of these initial conclusions through various techniques such as data review, negative case analysis, triangulation, member checking, and peer debriefing. These three analytical activities are not linear but rather occur interactively and iteratively to produce a comprehensive understanding and verified, in-depth conclusions. In addition, the member checking process was carried out by reconfirming the researcher's interpretations to the informants, to avoid bias and ensure the accuracy of information (Creswell, 2015). With this comprehensive approach, it is hoped that the research results can provide an in-depth, objective, and academically justifiable picture.

### **C. Finding and Discussion**

This research was conducted at MAN Landak from January to March 2025, involving four Islamic Religious Education (PAI) teachers who had participated in Merdeka Curriculum e-learning training. Data were obtained through in-depth interviews, learning observations, and document studies. Based on findings in the field, the results of this research can be categorized into several main points.

#### **1. Learning Resilience**

Learning resilience, as proposed by experts, refers to the capacity of a learning system – whether at the individual, educator, or institutional level – to survive, adapt, and develop in the face of various challenges and changes, such as pandemics, curriculum changes, or technological developments. The research at MAN Landak provides an empirical overview of the manifestation of this resilience within the context of Merdeka Curriculum e-learning training for Islamic Religious Education (PAI) teachers.

##### **a. Implementation and Resilience of Merdeka Curriculum E-Learning Training**

Research findings indicate that e-learning training at MAN Landak was conducted through online platforms provided by the Ministry of Religious Affairs (Kemenag), such as SIMPATIKA and Pusaka SuperApp, which are designed to facilitate effective and flexible distance learning. The training materials covered crucial aspects of the Merdeka Curriculum, ranging from its philosophy, the development of teaching modules based on learning outcomes, differentiated learning, diagnostic and formative assessments, to the integration of Islamic values in active learning. This finding confirms that the platforms and materials provided by Kementerian Agama (2021) have been adopted and implemented at the madrasah level. The majority of teachers reported that the training was beneficial in enhancing their understanding, which aligns with the training's objective to strengthen teacher competencies in designing responsive learning experiences.

However, this implementation was not without challenges. Technical constraints such as unstable internet signals and limited devices were reported by participants, a finding that reinforces Kementerian Agama (2022) warning regarding technological infrastructure challenges in underdeveloped regions. Nevertheless, the resilience of the e-learning training proved to be high. The flexibility of platform access confirms Slamet's (2021b) argument that accessibility in terms of time and place in e-learning is effective in enhancing pedagogical and digital competencies, even in conditions of limited infrastructure, as also indicated by Slamet (2021a) regarding the resilience of e-learning to facility limitations. The sustained relevance of the materials, owing to the adaptive philosophical foundation of the Merdeka Curriculum (Kemendikbudristek, 2022; Kementerian Agama, 2022), as well as the teachers' motivation for independent post-training learning, demonstrates the program's effectiveness and endurance. This supports Rangkuti's (2024b) view on the importance of continuous learning and teacher self-development after training.

#### b. Impact of Training on Teacher Competence and Learning Quality

E-learning training positively impacted the competence of PAI teachers at MAN Landak, particularly in understanding the Merdeka Curriculum and their ability to design flexible learning. Most teachers experienced significant benefits, despite facing technical obstacles. These infrastructural constraints are consistent with Kemenag's (2021) findings and underscore Nurfitriani's (2025b) argument that digital-based training requires participants' readiness in mastering basic technology. However, the flexibility of the e-learning platform, allowing access according to individual readiness, confirms its effectiveness in enhancing competence (2021a).

Furthermore, this training triggered a paradigm shift among teachers, from being mere information providers to facilitators of active and reflective learning, which is the core of the Merdeka Curriculum's philosophy (Kemendikbudristek,

2022). This finding aligns with Nurfitriani's (2025b) statement that effective training not only imparts technical knowledge but also cultivates a new mindset as lifelong learners. The increased use of digital media, active learning methods, and responsiveness to individual student needs by PAI teachers at MAN Landak supports the opinion of Prasojo and Mulyani (2020) that digital-based teacher training fosters the development of a reflective and adaptive mindset.

A direct impact was observed on learning quality: increased student engagement, varied teaching methods (learning videos, interactive quizzes, contextual case studies), and improved student understanding based on formative assessments. This confirms that applicative and contextual training (Slamet, 2021b) is easily implemented and has a positive impact. This improvement in quality reinforces Prasojo and Mulyani's (2020) thesis that investment in teacher training directly impacts the quality of education. Additionally, the formation of a collaborative learning culture among teachers is in line with Rangkuti's (2024a) findings that training can strengthen teachers' professional community.

c. Resilience of Training to Change and Ongoing Challenges

The resilience of e-learning training at MAN Landak was manifested through flexibility in time and place, which confirms Slamet's (2021a) findings regarding increased participant engagement. The sustained relevance of materials, based on the adaptive philosophy of the Merdeka Curriculum (Kemendikbudristek, 2022), enabled PAI teachers to develop flexibility and creativity skills. Teachers' ability to adapt training materials into daily practice, even with limited facilities, strengthens Slamet's (2021a) view on the resilience of e-learning against technological and geographical limitations. Post-training motivation for independent learning supports Rangkuti's (2024b) research that technology-based training can encourage teachers to become lifelong learners.

Nevertheless, this research also identified challenges that underscore the importance of supporting factors previously identified in the literature. The lack of follow-up assistance post-training was a constraint. This aligns with the opinion of Attamimi et al. (2023), who emphasize that the success of e-learning training heavily depends on continuous support and a supportive environment, including madrasah policies, ICT availability, and program sustainability. The uneven digital readiness among some teachers confirms Nurfitriani's (2025a) view regarding the prerequisite of mastering basic technology. The adaptation time needed for teachers to integrate new approaches is also an important aspect to consider, as the process of changing teaching practices requires time and support.

Increased teacher awareness of the importance of differentiated learning and a humanistic approach, as well as the development of contextual Islamic values-based projects by students, indicates that quality training can create a domino effect on learning innovation, aligning with the importance of exploratory and

reflective spaces facilitated by e-learning (Sumarni, 2021).

The Merdeka Curriculum e-learning training for PAI teachers at MAN Landak demonstrated significant resilience, reflected in platform flexibility, material contextuality, and teachers' enthusiasm for pedagogical transformation. These findings confirm various previous theories and research regarding the benefits and challenges of e-learning and the importance of continuous teacher professional development. However, to ensure sustainability and maximize positive impacts, this research re-emphasizes the crucial role of institutional strengthening, provision of adequate facilities, development of a structured and sustainable training evaluation and monitoring system, and post-training assistance, as also stressed by Attamimi et al. (2023) and Rangkuti (2024a). The resilience observed at MAN Landak, operating within a context of limited digital infrastructure yet with a high spirit of adaptation, provides an important contribution to understanding how e-learning training can be optimized in various conditions to support the sustainable implementation of the Merdeka Curriculum.

## **2. Effectiveness**

Data obtained through questionnaires indicates a very positive perception of the application of e-learning in Merdeka Curriculum-based learning. The majority of students (71% stating "very effective" and 14% "effective," totaling 85%) and all educator respondents (75% "very effective" and 25% "effective," totaling 100%) rated e-learning as effective to very effective. These findings indicate acceptance and positive assessment of the use of this learning technology at MAN Landak.

This positive perception confirms the general trend regarding the potential of e-learning in supporting the learning process. However, it should be noted that the percentage of students who rated it "fairly effective" (9%), "less effective" (3%), and "not effective" (3%), although small, indicates a variation in experiences or challenges faced by some students. Furthermore, although the percentage for educators is very high, the limited number of educator respondents (n=4, if calculated from the percentage where 3 out of 4 is 75%) necessitates caution in generalization and serves as a limitation that needs to be considered in interpreting the educator data more broadly.

The research results showing the effectiveness of e-learning are in line with the fundamental principles of the Merdeka Curriculum, which emphasize the active role of students. The Merdeka Curriculum is designed to provide students with the freedom to explore, experiment, and develop knowledge independently (Kemendikbud, 2020). E-learning, with its characteristics that enable independent and flexible learning, confirms its potential as a relevant method. The opinion of Norman et al. (2024), who state that e-learning can empower Merdeka Curriculum methods by making students creative and active in learning, is strongly supported by the positive perceptions at MAN Landak.

Furthermore, Kartika et al. (2021), who argue that e-learning allows students to be directly involved in honing psychomotor skills, not just cognitive ones, enriches the understanding of why this method is considered effective. This is because the Merdeka Curriculum also encourages holistic learning. Mekonnen's (2020) thought that e-learning helps optimize learning with active student participation is also confirmed by these findings, where students feel that e-learning gives them the freedom to practice the theories they acquire.

The reported effectiveness of e-learning at MAN Landak can be attributed to increased student engagement. When students are not just passive listeners but are directly involved, deeper understanding is more likely to be achieved. This is consistent with the statement by Hasmiati & Mustami (2017) that student learning activities will encourage changes in attitudes, values, knowledge, and skills.

John Dewey's theory (1938) which is often cited, states that learning through direct practice can significantly improve material retention and understanding (by up to 75%) compared to traditional lecture-based methods. Although the research at MAN Landak did not directly measure retention, the high perception of effectiveness indicates that students may experience similar benefits from the exploration and analysis processes facilitated by e-learning, thus enabling them to connect theory with practical applications.

Moreover, e-learning has the potential to strengthen critical thinking and problem-solving skills. Involvement in direct practice confronts students with situations that require them to think critically and make decisions. This aligns with the Merdeka Curriculum's goal of preparing a generation capable of critical, creative, innovative, and solution-oriented thinking (Kemendikbud, 2020). The positive perception of e-learning at MAN Landak supports the argument that this method contributes to achieving these goals.

### **3. Critical Aspects and Future Research Directions (Critique/Nuances)**

Although the findings indicate optimism, several aspects require critical attention and form a basis for future research:

- a. **Details of E-learning Implementation:** This report mentions the application of e-learning but does not detail the specific platforms predominantly used, the types of content, or the intensity of interaction within e-learning for each subject. The effectiveness of e-learning heavily depends on instructional design and implementation quality. Future research could explore these variables in greater depth.
- b. **Perspective of Students Who Rated It Less Effective:** Further investigation into the 6% of students who rated e-learning as less effective or ineffective could provide valuable insights into the specific constraints they faced (e.g., device accessibility, internet connection quality, learning styles, or technical support).
- c. **Objective Measurement:** Perceptions of effectiveness are valuable data, but to

strengthen claims of effectiveness, this data should ideally be combined with objective measurements of student learning outcomes or direct observation of e-learning practices.

- d. Educator Representativeness: As mentioned earlier, the small sample of educators limits the generalizability of findings from the educators' side. A study with a larger and more diverse sample of educators would provide a more comprehensive picture.

## **E. Conclusion**

Based on the research results and discussion, it can be concluded that E-Learning Based Merdeka Curriculum Training demonstrates significant resilience. This is proven by the training's ability to adapt to change and improve the quality of PAI learning. Furthermore, e-learning training not only enhances teachers' technical skills but also cultivates a new learning culture, encouraging teachers to become more reflective, innovative, and open to continuous self-development—characteristics crucial for addressing 21st-century educational challenges. In terms of effectiveness, the application of the e-learning method is shown to be highly effective and yields numerous positive impacts, particularly in Merdeka Belajar-based learning where practical application is a key component. This effectiveness is evidenced by the high learning interest among students taught using the e-learning method. Its application promotes student engagement through practice, thereby providing meaningful and in-depth learning experiences. It also trains creative critical thinking and problem-solving skills, while increasing students' self-confidence and independence. This aligns with the goal of Merdeka Belajar, which aims to produce graduates who not only possess theoretical knowledge but are also equipped to think creatively and find solutions when facing real-world challenges.

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