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Transformation of Islamic Religious Education Learning from Teacher-Centered to Student-Centered through E-Learning-Based Learning Design

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Abstract: *Religious Education (IRE) is known in Indonesia as Pendidikan Agama Islam (PAI) learning is still dominated by a teacher-centered approach, resulting in low student engagement and suboptimal religious literacy in the digital era characterized by a rapid flow of information. This condition highlights the urgency of developing innovative instructional designs that effectively integrate technology into the learning process. Therefore, this study aims to analyze how e-learning-based instructional design can transform PAI learning into a student-centered approach. This study uses a qualitative approach with library research methods through a search of relevant scientific literature in the Google Scholar, Scopus, and Dimensions databases. Literature was selected based on its relevance to the research topic and analyzed using content analysis techniques. These findings indicate that e-learning-based instructional design, especially through blended learning models, significantly increases active, interactive, and reflective student engagement. Furthermore, well-integrated instructional design contributes to improved religious literacy, including students' ability to understand, analyze, and apply Islamic values in contextual situations. However, its effectiveness is highly dependent on the quality of the instructional design, teacher competence, and students' readiness for independent learning. In conclusion, e-learning-based instructional design serves as a strategic solution to develop adaptive, critical, and meaningful PAI learning in the digital era.*

Keywords: *Teacher-Centered, Instructional Designs, Student-Centered, Islamic Values*

Abstrak: Pendidikan Agama Islam (PAI) pembelajaran masih didominasi oleh pendekatan *teacher-centered*, sehingga keterlibatan siswa yang rendah dan literasi beragama yang tidak optimal di era digital yang ditandai dengan arus informasi yang deras. Kondisi ini menyoroti urgensi untuk mengembangkan desain instruksional inovatif yang secara efektif mengintegrasikan teknologi ke dalam proses pembelajaran. Oleh karena itu, penelitian ini bertujuan untuk menganalisis bagaimana desain instruksional berbasis e-learning dapat mengubah PAI learning menjadi pendekatan *student-centered*. Penelitian ini menggunakan pendekatan kualitatif dengan metode penelitian kepustakaan melalui penelusuran literatur ilmiah yang relevan pada database Google Scholar, Scopus, dan Dimensions. Literatur dipilih berdasarkan relevansi dengan topik penelitian dan dianalisis menggunakan teknik content analysis. Temuan ini menunjukkan bahwa desain instruksional berbasis e-learning, terutama melalui model pembelajaran campuran, secara signifikan meningkatkan keterlibatan siswa yang aktif, interaktif, dan reflektif. Selain itu, desain instruksional yang terintegrasi dengan baik berkontribusi pada peningkatan literasi agama, termasuk kemampuan siswa untuk memahami, menganalisis, dan menerapkan nilai-nilai Islam dalam situasi kontekstual. Namun, efektivitasnya sangat tergantung pada kualitas desain instruksional, kompetensi guru, dan kesiapan siswa untuk belajar mandiri. Kesimpulannya, desain instruksional berbasis e-learning berfungsi sebagai solusi strategis untuk mengembangkan PAI learning yang adaptif, kritis, dan bermakna di era digital.

Kata Kunci: Teacher-Centered, Desain Instrusional Student-Centered, Nilai-Nilai Islam

INTRODUCTION

The rapid development of digital technology has fundamentally changed how students access and construct knowledge, including in Islamic Religious Education (PAI). However, classroom practices in many Indonesian schools remain predominantly teacher-centered, with teachers acting as the primary source of knowledge while students assume passive roles during learning. This condition limits students' opportunities to develop critical thinking, reflective understanding, and independent religious learning skills. Recent educational data also indicate that Indonesian students continue to face challenges in literacy, critical reasoning, and meaningful engagement in learning, while the expansion of digital information simultaneously requires stronger digital and religious literacy competencies (Harmawati et al., 2024).

The consequences of teacher-centered instruction become more significant in Islamic Religious Education because PAI is not merely intended to develop students' cognitive understanding but also to cultivate religious attitudes, moral values, and behavioural dispositions. In practice, teacher-centered instruction tends to emphasize memorization and one-way knowledge transmission, leaving limited opportunities for learners to engage in dialogue, critical inquiry, collaborative learning, and reflective interpretation of Islamic teachings in authentic contexts. Research in educational psychology consistently demonstrates that passive learning environments are less effective in fostering higher-order thinking, self-regulated learning, and meaningful knowledge construction(Hidayat & Syahidin, 2019). Therefore, transforming PAI learning from a teacher-centered paradigm toward a student-centered approach is no longer an instructional option but a pedagogical necessity to facilitate active participation, critical reflection, and meaningful internalization of Islamic values.

To address these challenges, the transformation of PAI learning requires an instructional design that meaningfully integrates e-learning with student-centered pedagogical principles. Rather than merely introducing digital technology into classrooms, instructional design provides a pedagogical framework that systematically aligns learning objectives, learning activities, digital media, and assessment to promote active student participation. Within this framework, e-learning functions not simply as a technological platform but as a learning environment that facilitates interaction, collaboration, reflection, and independent learning. Previous studies have demonstrated that appropriately designed e-learning environments can improve student engagement, self-directed learning, and critical thinking skills (Hrastinski, 2009). Nevertheless, in many PAI classrooms, e-learning remains largely confined to distributing learning materials and assignments, without being integrated into a comprehensive instructional design. Consequently, the central challenge is not simply adopting digital technologies but designing pedagogically sound learning environments capable of transforming PAI from teacher-centered instruction into student-centered learning.

A number of previous studies have examined various strategies for promoting student-centered learning and integrating e-learning into educational practices. Research by Rozali et al. (2022) demonstrated that learner-centered learning encourages students to become more active, independent, and collaborative, leading to improved engagement and learning outcomes (Rozali et al., 2022). Similarly, Garrison and Vaughan (2007) found that online learning environments can enhance students' active participation through discussion forums and collaborative learning activities (Garrison & Vaughan, 2007). In addition, Ng (2012) emphasized the importance of digital literacy in enabling students to critically evaluate and appropriately utilize information obtained from various digital sources (Ng, 2012). However, most previous studies have focused either on learner-centered pedagogy or on the adoption of educational technology, without comprehensively

examining how e-learning-based instructional design functions as the pedagogical mechanism for transforming learning paradigms. Particularly in the context of Islamic Religious Education (PAI), which emphasizes not only cognitive achievement but also the internalization of values and character formation, studies integrating instructional design and e-learning as instruments of pedagogical transformation remain relatively limited.

Based on this description, it can be identified that there is a research gap, namely the lack of studies that comprehensively discuss the role of e-learning-based learning design as a transformation agent in transforming PAI learning from a teacher-centered approach to a student-centered approach. So far, e-learning is more often seen as a learning tool, rather than as part of a learning design system that is able to direct a comprehensive paradigm shift. Therefore, this study aims to analyze how e-learning-based learning design can transform PAI learning towards more active, participatory, and student-centered learning. In addition, this study also aims to examine the implications of this transformation on increasing student involvement in the learning process. This study contributes theoretically by positioning instructional design as the pedagogical mechanism that mediates the relationship between e-learning implementation and student-centered learning in Islamic Religious Education.

METHOD

This study employed a qualitative library research approach to analyze the transformation of Islamic Religious Education (PAI) from a teacher-centered to a student-centered learning approach through e-learning-based instructional design. Library research was selected because the study focuses on conceptual analysis and theoretical synthesis using published scholarly literature as the primary source of data, rather than collecting empirical evidence from the field. Through this approach, existing theories and research findings were critically examined, compared, and synthesized to develop a comprehensive understanding of instructional design in Islamic Religious Education. Accordingly, instructional design was positioned as the central focus of analysis in relation to e-learning implementation and student engagement.

The data sources in this study consist of primary data and secondary data. The literature was identified through systematic searches using Google Scholar as the primary academic search engine. Additional sources were obtained from SINTA-indexed journals, ScienceDirect, Scopus-indexed publications, official Open Journal System (OJS) websites, and reference tracing from relevant studies. The collected literature consisted of academic books, peer-reviewed journal articles, conference proceedings, and official reports related to instructional design, e-learning, student-centered learning, and Islamic Religious Education. Sources were selected based on their relevance, academic credibility, and contribution to the research objectives.

The data collection technique is carried out through documentation studies, namely by identifying, collecting, and reviewing various sources of literature related to the research topic. The literature search employed combinations of keywords such as "instructional design", "e-learning", "blended learning", "student-centered learning", "Islamic Religious Education", and "Pendidikan Agama Islam". Keyword combinations using Boolean operators (AND and OR) were applied where appropriate to obtain relevant publications. The search primarily covered publications from 2015–2025 to capture recent developments, while several seminal works published before this period were retained because of their foundational contribution to instructional design and e-learning theories.

The inclusion criteria comprised peer-reviewed journal articles, academic books, conference proceedings, and official reports directly related to instructional design, e-learning, student-centered learning, and Islamic Religious Education. Publications without clear academic review, opinion articles, duplicated sources, and literature unrelated to the research focus were excluded from the analysis. The collected data were analyzed using qualitative content analysis involving four stages: data reduction, thematic categorization, interpretation, and synthesis. Through this process, recurring concepts, relationships, and pedagogical patterns concerning instructional design, e-learning implementation, and the transformation of PAI learning were identified and interpreted.

RESULT AND DISCUSSION

The Concept of E-Learning-Based PAI Learning Design as a Transformation Agent

The results of the study show that e-learning-based learning design has a strategic role as a transformation agent in changing the learning paradigm of Islamic Religious Education (IRE) is known in Indonesia as Pendidikan Agama Islam (PAI) from teacher-centered to student-centered. This transformation does not occur solely because of the use of technology, but because of the design of a learning system that integrates objectives, materials, methods, media, and evaluation in an integrated manner. Thus, learning design functions as an operational framework that determines the direction as well as the quality of learning interactions (Jati Marta & Shehu Lawal, 2026; Jayanti, 2025).

The main problem in PAI learning does not lie in the limitations of technology, but in the weakness of learning design that is still oriented towards knowledge transmission (Nasor & Ayu Puspita Sari, 2025). In the teacher-centered approach, the learning process is more likely to be one-way, with students taking a passive role and having less space for independent knowledge construction. (Jayanti, 2025). On the other hand, the learning design of e-learning provides a role shift, where the learners become the center of learning activities through exploration, discussion, and reflection (Jati Marta & Shehu Lawal, 2026). In concept, e-learning-based learning design merges the principles of student-centered learning with an interactive digital environment (Jati Marta & Shehu Lawal, 2026). The integration creates a more flexible and responsive educational experience for the needs of learners. In practice, learning is no longer limited to the delivery of material, but it becomes a process that involves critical thinking, collaboration, and problem solving activities (Jayanti, 2025). This means that e-learning is a learning environment, not just a learning medium.

From the perspective of Constructivist learning theory, this transformation reflects a fundamental shift in the way knowledge is acquired. Constructivism argues that learners actively construct knowledge through meaningful experiences, interaction, and reflection rather than passively receiving information from teachers (Chand, 2026). Accordingly, e-learning-based instructional design provides opportunities for students to explore learning resources, engage in collaborative discussions, and develop their own understanding of Islamic teachings. In this context, digital technology functions as a facilitator of knowledge construction rather than merely a medium for information delivery. Therefore, the findings of this study suggest that the pedagogical value of e-learning lies not in the technology itself but in its capacity to facilitate active knowledge construction through well-designed learning experiences.

These results are consistent with previous research that e-learning can increase learning participation and independence(Hutami et al., 2026). However, the study found an important

difference, namely that the effectiveness of e-learning is highly dependent on the quality of the underlying learning design. Without a systematic design, e-learning tends to be only a means of distributing materials that do not have a significant impact on the change in the learning paradigm. In other words, technology does not automatically result in learner-centered learning.

From an analytical perspective, the transformation enabled by e-learning-based instructional design can be understood through several interconnected pedagogical changes. Firstly, in the aspect of learning objectives, there is a shift in orientation from the mastery of materials to the development of competencies and thinking skills(Jayanti, 2025). Secondly, the method shifts from lectures to interactive activities such as online discussions, project-based learning, and reflection(Siregar et al., 2024). Third, the role of teachers has shifted from being the main source of information to a learning facilitator(Ghafar, 2023). Fourth, from the perspective of students, there is an increase in active roles in managing the learning process (Laila Wulandari et al., 2025). To clarify these differences, the following is a comparison between teacher-centered and student-centered learning based on e-learning:

Table 1. Comparison of Learning

No	Aspects	Teacher-Centered	Student-Centered (E-Learning)
1	The Role of the Teacher	Main Source	Facilitator
2	The Role of the Teacher	Passive	Active and independent
3	Method	Ceramah	Discussions, projects, collaborations
4	Media	Textbooks	Platform digital
5	Interaction	One-Way	Interactive and collaborative
6	Learning Focus	Knowledge transfer	Knowledge construction

The comparison presented in Table 1 illustrates that the transformation from teacher-centered to student-centered learning extends beyond changes in instructional methods. It represents a pedagogical shift in which students assume greater responsibility for constructing knowledge, while teachers facilitate meaningful learning experiences. This finding is consistent with the principles of Constructivism, which emphasize learner autonomy, active engagement, and contextual learning as essential components of effective education.

Overall, this study offers a conceptual contribution by positioning e-learning-based instructional design not merely as a technological innovation but as a pedagogical framework capable of transforming Islamic Religious Education from teacher-centered instruction to student-centered learning. This finding is important because it redirects attention from technology adoption toward the quality of instructional design as the primary determinant of meaningful learning transformation. By integrating constructivist learning principles into the discussion of e-learning in PAI, this study advances existing knowledge beyond previous studies that predominantly emphasized technological implementation, providing a more comprehensive perspective on how instructional design can support active learning, knowledge construction, and value internalization in the digital era.

E-Learning Implementation Model in PAI Learning Transformation

The results of the study show that the implementation of e-learning in Islamic Religious Education (PAI) learning is not single, but consists of several models that have different characteristics and levels of effectiveness in encouraging learning transformation. In general, there are three main models used, namely web-enhanced learning, blended learning, and fully online learning. These three models show different contributions in shifting the learning paradigm from

teacher-centered to student-centered, especially in terms of interaction, flexibility, and learning independence (Dziuban et al., 2018).

The web-enhanced learning model is the most basic form of implementation, where technology is used as a complement to face-to-face learning. In this model, e-learning serves as an additional medium to provide materials and assignments. However, the results of the analysis show that this model has not been able to significantly transform learning because the learning structure is still teacher-centered. These results are in line with recent research confirming that the use of technology without pedagogical integration only leads to a limited impact on the quality of learning (Setyawan et al., 2024).

On the contrary, the effectiveness of the blended learning model is higher in terms of stimulating student engagement. This model is a balanced combination of face to face learning with online activities. It provides a mixture of face to face interaction and self-paced learning. Recent research shows that blended learning can increase student engagement, learning independence and critical thinking skills(Nababan et al., 2024). Indeed, the latest meta-analysis confirms that blended and flipped learning approaches are significantly more effective than conventional learning because they highlight pedagogical aspects, not just technology (Schmid et al., 2023).

The effectiveness of blended learning can also be explained through the Community of Inquiry (CoI) framework proposed by Garrison, Anderson, and Archer (2000). According to this framework, meaningful online learning emerges through the integration of teaching presence, social presence, and cognitive presence (Garrison et al., 1999). In the context of PAI learning, teaching presence is reflected in the teacher's role in designing and facilitating learning activities, social presence develops through collaborative discussions and peer interaction, while cognitive presence is fostered through reflection and critical engagement with Islamic values. Therefore, the superiority of blended learning lies not merely in combining face-to-face and online instruction, but in creating a balanced learning environment that supports meaningful learning experiences.

Meanwhile, the fully online learning model offers high flexibility because the entire learning process is done online. This model provides ample space for learners to learn independently. However, the results of the study show that its effectiveness is highly dependent on the quality of the learning design and the learning experience built. Recent studies in the Indonesian context show that the main determinants of the sustainability of e-learning use are learning satisfaction , interaction, and learning experience (Dwi Lestari & Riatun, 2024).

When compared to previous studies that tended to generalize the effectiveness of e-learning, the findings in this study show a sharper difference. Not all e-learning models automatically result in effective learning. Models that are only complementary have a low impact, while models that integrate interaction and independent learning (such as blended learning) show a more significant impact. Thus, the level of integration of learning design is a key factor in the success of e-learning implementation.

From an analytical perspective, the successful implementation of e-learning in PAI depends not only on the selection of an appropriate instructional model but also on the quality of pedagogical interaction embedded within the learning design. Consistent with the Community of Inquiry framework, effective e-learning requires the integration of teaching presence, social presence, and cognitive presence to support meaningful learning experiences. Therefore, technology serves as an enabling environment, whereas instructional design determines how interaction, collaboration, and reflection contribute to student learning.

Table 2. E-Learning Implementation Model in PAI Learning

No	Model	Key Characteristics	Transformation Rate
1	Web-Enhanced	Complementing face-to-face learning	Low
2	Blended Learning	A combination of online and face-to-face	Medium–High
3	Fully Online	Fully digital-based	High (conditional)

Table 2 demonstrates that differences among e-learning models are determined not only by the extent of technology use but also by the quality of pedagogical interaction they facilitate. While web-enhanced learning primarily supports content delivery, blended learning creates richer opportunities for collaborative learning and reflective dialogue. Fully online learning offers greater flexibility; however, its effectiveness remains conditional upon well-designed instructional activities and sustained learner engagement.

Overall, this study demonstrates that the effectiveness of e-learning implementation in PAI is determined not by the level of technology adoption but by the degree to which instructional design integrates meaningful pedagogical interaction. This finding is important because it challenges the common assumption that digital transformation alone automatically improves learning quality. By interpreting e-learning implementation through the Community of Inquiry framework, this study advances existing knowledge by highlighting that successful transformation in PAI depends on the balanced integration of teaching presence, social presence, and cognitive presence within an appropriate instructional model, particularly blended learning.

The Impact of E-Learning-Based Learning Design on Religious Engagement and Literacy

The results of the study show that the e-learning-based learning design of Islamic Religious Education (PAI) has a significant impact on increasing student engagement and religious literacy of students. The main findings of this study confirm that learning involvement not only increases quantitatively (participation), but also qualitatively, namely in the form of depth of understanding, reflective skills, and critical thinking skills in understanding Islamic teachings. This shows that the integration of e-learning in learning design is able to create a more meaningful and contextual learning experience.

As for the engagement, e-learning provides a wider engagement through online discussion forums, collaborative assignments, and the availability of different digital learning resources. E-learning-based design encourages students to participate actively in the learning process, unlike traditional learning that is more one-way. Recent research shows that interactivity, social presence and the design of learning activities affect learning engagement in the digital environment(Bond & Bergdahl, 2023). Thus, increased engagement is not only the result of the use of technology, but the result of learning design that is able to activate the role of students.

The increased student engagement identified in this study can also be interpreted through the perspective of Self-Regulated Learning (SRL). According to SRL theory, effective learning occurs when students actively plan, monitor, and evaluate their own learning processes (Kristiyani, 2016). E-learning-based instructional design facilitates these processes by providing flexible access to learning resources, opportunities for self-paced learning, and continuous interaction through digital platforms. Consequently, students become more autonomous learners who actively construct their understanding of Islamic teachings rather than relying solely on teacher explanations.

From the aspect of religious literacy, the findings of this study show that there is an expansion of the meaning of literacy from simply understanding religious texts to the ability to analyze, evaluate, and apply Islamic values in daily life. E-learning provides wider access to Islamic learning

resources, such as scientific articles, digital interpretation, and educational content, so that students can explore knowledge independently (Falloon, 2020). This finding also reflects the concept of cognitive engagement, which emphasizes learners' willingness to invest mental effort in understanding, analyzing, and applying knowledge. In the context of PAI, religious literacy extends beyond acquiring religious information to developing the ability to critically evaluate, internalize, and apply Islamic values in authentic situations. Therefore, meaningful religious literacy is achieved when students are cognitively engaged in the learning process rather than merely exposed to digital information. However, the findings of this study also show that the increase in religious literacy does not occur automatically through the use of e-learning. There is a significant difference with some previous studies that have tended to state that technology directly improves literacy. In this study, it was found that without a structured learning design, the use of e-learning has the potential to produce superficial understanding due to the flood of digital information. Therefore, learning design acts as a control mechanism that directs the learning process to remain critical and directed.

Analytically, the relationship between e-learning-based learning design, engagement, and religious literacy can be understood as an interintegrated and causal system. A systematically designed learning design not only determines the flow of material delivery, but also forms a learning experience structure that allows for interaction, exploration, and reflection. Interactive learning activities like online discussions, collaborative tasks and problem-based assignments can lead to learners' active engagement cognitively and affectively. This high engagement then triggers a process of deeper information processing (deep learning) where students not only understand concepts on a surface level, but are also able to associate, analyze and evaluate the information obtained. Ultimately, the process helps improve religious literacy. Therefore, engagement is not only an indicator of participation but also a mediator between the quality of learning design and the achievement of learning outcomes.

The findings also indicate that religious engagement and literacy are reciprocal and mutually reinforcing. Learners who are actively engaged in learning are more likely to have better literacy skills because they are not only receiving information passively but also processing, interpreting and reflecting on it in real-life contexts. On the other hand, a good level of literacy also encourages students to be more critical and active in the learning process. This emphasizes that e-learning-based learning must be designed to create meaningful learning activities, which emphasize deep engagement, critical reflection, and knowledge construction, not just the digitization of material delivery. To clarify the relationship, the following is a framework of the relationship between learning design, engagement, and literacy:

Table 3. The Relationship between Learning Design, Engagement, and Religious Literacy

No	Component	Main Role	Impack
1	Learning Design	Directing the learning process	Structured and systematic
2	E-Learning	Media and learning environment	Flexible dan interactive
3	Student Engagement	Active participation	Increase
4	Religious Literacy	Understanding & application of Islamic values	In-depth dan contextual

Table 3 illustrates that learning design, e-learning, student engagement, and religious literacy are interconnected components rather than separate variables. The framework indicates that

instructional design initiates meaningful learning experiences, while engagement functions as the mechanism through which students develop deeper religious literacy. This relationship highlights that successful e-learning depends on the quality of pedagogical design rather than the availability of digital technology alone.

Overall, this study contributes a conceptual perspective by demonstrating that student engagement functions as a mediating mechanism linking e-learning-based instructional design with the development of religious literacy. This finding is important because it shifts the evaluation of e-learning success from technology utilization toward the quality of pedagogical engagement experienced by students. By integrating the principles of Self-Regulated Learning and cognitive engagement into the discussion of PAI learning, this study advances existing knowledge beyond previous studies that primarily focused on digital technology, offering a more comprehensive explanation of how instructional design promotes meaningful learning, critical reflection, and the internalization of Islamic values in the digital era.

Challenges and Critical Problems in the Implementation of E-Learning in PAI Learning

The results of the study show that although e-learning-based learning design has great potential in transforming Islamic Religious Education (PAI) learning, its implementation still faces various structural, pedagogical, and cultural challenges. The main findings of this study confirm that the success of e-learning is not only determined by the availability of technology, but by the readiness of the learning system as a whole. In other words, implementation failures are often not caused by the technology itself, but by unpreparedness in terms of design, competence, and learning culture.

One of the main problems is the limited digital and pedagogical competence of educators. Many educators have used e-learning platforms, but are still at a technical level, such as uploading materials or assigning assignments, without designing an interactive and meaningful learning experience. These findings are in line with research that shows that the digital competency gap of teachers is one of the main obstacles in the implementation of technology-based learning (Instefjord & Munthe, 2017). This condition causes e-learning not to function as a tool of transformation, but only as an extension of conventional methods in digital form.

From the perspective of the Community of Inquiry (CoI) framework, this limitation reflects insufficient teaching presence in digital learning environments. Teaching presence extends beyond delivering content; it includes designing meaningful learning experiences, facilitating interaction, and guiding students' cognitive development. Therefore, when educators lack pedagogical competence in designing e-learning activities, digital platforms tend to function merely as repositories of learning materials rather than environments that foster active and meaningful learning.

In addition, another significant challenge is the low readiness of students to undergo independent learning. E-learning-based learning inherently demands self-regulated learning skills, which include skills in managing time, building intrinsic motivation, setting learning goals, and maintaining responsibility for the learning process in an ongoing manner. However, the results of the study show that not all students have this capacity adequately, especially in the context of the transition from conventional learning to digital learning which demands higher independence. As a result, online learning often results in only pseudo-engagement, where learners simply meet administrative demands, such as collecting assignments or attending the platform without being followed by deep cognitive engagement. This condition shows that there is a gap between formal

participation and substantive involvement in the learning process(Broadbent & Poon, 2015). This finding indicates that learners' self-regulation is not merely an individual characteristic but a prerequisite for achieving meaningful engagement and sustained learning outcomes in digital PAI environments.

In terms of infrastructure, limited access to technology and internet networks is still a fairly basic obstacle, especially in the context of education in Indonesia which has diverse geographical and social conditions (A'fiah & Ferianto, 2023). This inequality of access affects not only the availability of devices and connectivity, but also impacts on the students' opportunities to access digital learning resources optimally. As a result, the implementation of e-learning cannot run evenly in between regions, which can widen the gap in education quality between groups that have adequate access and those who do not. This condition presents a great contradiction between the potential of e-learning as a modern learning solution which is inclusive and the fact of limited access in the field. (A'fiah & Ferianto, 2023; Jati Marta & Shehu Lawal, 2026). Thus, the digital transformation in education cannot be understood only as a process of adoption of technology, but it must be accompanied by systematic efforts for digital equity, so that every student has the same opportunity to benefit from technology-based learning innovations (A'fiah & Ferianto, 2023).

In addition, there is a serious problem in the pedagogical aspect, which is the tendency to reduce the meaning of PAI learning in the digital environment. PAI learning, which should focus on the internalization of values and the formation of character, risks becoming a narrowing of the knowledge transfer based on digital content (Najibulloh et al., 2025). Emotional and spiritual interactions, which are usually built up in face-to-face learning, become less in an online environment. This is a serious challenge because the essence of PAI learning does not only lie in the cognitive aspect, but also in the formation of attitudes and morals. This challenge also illustrates the limitation of technology-centered approaches in value-based education. In PAI, meaningful learning requires not only cognitive interaction but also affective and spiritual engagement, which cannot be achieved through content delivery alone. Consequently, instructional design should intentionally incorporate reflective dialogue, mentoring, and contextual learning experiences to support the holistic objectives of Islamic education.

These findings show a difference from some previous studies that tend to emphasize the effectiveness of e-learning in general. In the context of PAI, such effectiveness cannot be measured only from the cognitive aspect or digital engagement, but must include affective and spiritual dimensions. Thus, the implementation of e-learning in PAI requires a more complex pedagogical approach compared to general learning. These findings further emphasize that digital literacy and religious literacy should be developed simultaneously. Students require not only the technical ability to access digital information but also the critical capacity to evaluate the credibility, authenticity, and religious authority of online sources before internalizing them into their understanding and practice of Islam

In addition, problems also arise related to the quality of religious information in the digital space. Students have broad access to a wide range of religious sources, but not all of them are valid or have clear scientific authority. Without adequate literacy skills, this condition has the potential to cause misunderstandings in religion. These findings reinforce the argument that e-learning should be accompanied by the simultaneous strengthening of digital literacy and religious literacy (Miao et al., 2021). From an analytical perspective, these challenges demonstrate that the implementation of e-learning in PAI represents a complex interaction among technological, pedagogical, institutional, and learner-related factors. The findings indicate that technology alone cannot transform learning

unless it is supported by competent teachers, self-regulated learners, equitable digital access, and instructional designs that preserve the value-oriented nature of Islamic education.

Overall, this study reveals that the major barriers to implementing e-learning in PAI are predominantly pedagogical rather than technological. This finding is important because it shifts attention from technology adoption toward the broader educational ecosystem required for successful digital transformation, including teacher competence, learner self-regulation, digital equity, and value-oriented instructional design. By integrating these dimensions into a single analytical framework, this study advances existing knowledge beyond previous research that primarily focused on technological readiness, providing a more comprehensive understanding of the challenges associated with implementing e-learning in Islamic Religious Education.

Solutions and Strategic Recommendations for the Development of E-Learning-Based PAI Learning

Based on the findings of various challenges in the implementation of e-learning in Islamic Religious Education (PAI) learning, this study proposes a number of strategic solutions that are integrative and sustainable. The main findings confirm that the development of e-learning is not enough to be carried out at the technological level, but must touch on pedagogical aspects, human resource competence, and strengthening Islamic values in the learning process. Therefore, the solutions offered are oriented towards the transformation of the learning system as a whole, not just technical improvements.

From a pedagogical perspective, these strategic recommendations integrate the principles of Constructivism, Community of Inquiry, and Self-Regulated Learning. Constructivism emphasizes meaningful knowledge construction through active learning experiences, the Community of Inquiry framework highlights the importance of teaching, social, and cognitive presence in digital learning environments, while Self-Regulated Learning underscores learners' ability to manage and evaluate their own learning. Therefore, the proposed solutions are intended not only to improve technological implementation but also to establish a pedagogically sound and learner-centered PAI learning ecosystem.

First, improving the competence of educators is a top priority in the development of e-learning-based learning. Educators are not only required to be able to use technology, but also must have the ability to design interactive and meaningful digital learning designs. This includes the ability to develop project-based learning activities, online discussions, and integrated authentic evaluations. Recent research shows that digital pedagogical competence is a key factor in determining the success of technology-based learning (Tondeur et al., 2012). Accordingly, professional development should prioritize instructional design competencies that enable teachers to facilitate meaningful interaction, collaborative learning, and reflective inquiry rather than merely operating digital platforms.

Second, strengthening e-learning-based learning design must be carried out systematically and contextually. Learning design must be able to integrate objectives, materials, methods, media, and evaluation in a whole unit (Naimi et al., 2025). In the context of PAI, learning design needs to emphasize the integration between cognitive, affective, and spiritual aspects. E-learning should be designed not only to deliver material, but also to build reflective and meaningful learning experiences. Thus, technology serves as a means to strengthen the process of internalizing Islamic values. This recommendation reinforces the Constructivist principle that technology should

facilitate learners' active construction of knowledge rather than simply digitizing teacher-centered instruction.

Third, optimizing the use of digital platforms such as Learning Management Systems (LMS) needs to be directed at increasing interaction and collaboration. An LMS should not only be used as a repository of materials, but as a dynamic learning space. Activities such as discussion forums, peer assessments, and collaborative projects need to be systematically integrated into learning. Research shows that interactivity in the e-learning environment has a significant influence on student engagement and learning outcomes (Martin & Bolliger, 2018). In line with the Community of Inquiry framework, these interactive activities strengthen social presence and cognitive presence, thereby creating more meaningful and collaborative learning experiences.

Fourth, the development of digital literacy and religious literacy of students is a strategic step that cannot be ignored. Students need to be equipped with the ability to filter, evaluate, and use information critically, especially in the context of very diverse religious information in the digital space (Jati Marta & Shehu Lawal, 2026). In this case, e-learning-based PAI learning must be able to integrate digital literacy skills with moderate and contextual religious understanding. This is important to prevent misinterpretation of religious teachings due to exposure to invalid information. Furthermore, strengthening digital and religious literacy encourages students to become self-regulated learners who are capable of critically selecting, interpreting, and applying religious information in responsible ways. Fifth, the integration of Islamic values in every e-learning-based learning activity must be the main principle. PAI learning is not only oriented to mastering the material, but also to building character and morals (Anggun Syahriani Putri & Rizka Harfiani, 2025). Therefore, every learning activity, whether discussion, assignment, or evaluation, must be designed to encourage the internalization of values such as honesty, responsibility, and tolerance. This approach is the main differentiator between PAI learning and general learning in a digital context.

Sixth, institutional and policy support are important factors in the successful implementation of e-learning. Educational institutions need to provide adequate technological infrastructure, including internet access, learning tools, and a stable and easy-to-use digital platform (A'fiah & Ferianto, 2023). In addition, policies that support learning innovation are needed, including in terms of curriculum development, evaluation, and strengthening educator capacity. Without systemic support, the implementation of e-learning will be difficult to achieve optimal outcomes. Seventh, evaluation and monitoring of the implementation of e-learning needs to be carried out on an ongoing basis. Evaluation focuses not only on learning outcomes, but also on the learning process, engagement level, and effectiveness of learning design (Rangkuti & Albina, 2025). The evaluation data can be used as a basis for improving and developing learning in the future. This approach shows that e-learning should be understood as a dynamic and ever-evolving system.

Overall, this study proposes a holistic framework for developing e-learning-based PAI that integrates technological readiness, pedagogical quality, and the internalization of Islamic values within a single instructional design system. This framework is important because it shifts the focus of digital transformation from technology adoption alone toward the creation of meaningful learning experiences supported by competent teachers, active learners, and value-oriented pedagogy. By synthesizing the principles of Constructivism, Community of Inquiry, and Self-Regulated Learning, this study advances existing knowledge by offering a comprehensive conceptual model for implementing e-learning in Islamic Religious Education. Rather than viewing technology as the primary driver of educational change, the proposed framework positions

instructional design as the central mechanism through which digital technology, pedagogical interaction, and Islamic values are systematically integrated to promote student engagement, religious literacy, and character development in the digital era.

CONCLUSION

This study concludes that the transformation of Islamic Religious Education (PAI) learning from a teacher-centered approach to student-centered can be effectively realized through a structured e-learning-based learning design. The findings show that the success of the implementation of e-learning does not lie in the use of technology alone, but in the extent to which learning design is able to integrate objectives, interactive activities, digital media, and authentic evaluation in one complete system. The right design allows for the creation of more flexible, participatory, and student-centered learning, so that it is able to overcome the limitations of conventional learning that tends to be passive. In addition, this study found that e-learning-based learning design contributes significantly to increasing students' learning engagement and religious literacy. High involvement is reflected in active participation, collaborative interaction, and deeper thinking processes, which ultimately encourage students' ability to understand, interpret, and apply Islamic values contextually. However, without a pedagogical-based design, e-learning has the potential to produce superficial learning, especially in dealing with the complexity of religious information in the digital space. The contribution of this research lies in the affirmation that learning design plays a role as the main mediator between the use of technology and the quality of learning outcomes. From the perspective of educational psychology, these findings emphasize the importance of student engagement, self-regulation learning, and reflective ability as key factors in the development of religious literacy in the digital age. Therefore, the development of e-learning-based PAI learning must be carried out holistically by integrating cognitive, affective, and behavioral aspects, so as to not only produce conceptual understanding, but also internalize values and character formation of students.

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