



Transforming Islamic Religious Education Through Web-Based Learning: A Qualitative Study of Student Engagement and Learning Autonomy

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Transforming Islamic Religious Education Through Web-Based Learning: A Qualitative Study of Student Engagement and Learning Autonomy

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Abstract

This study explored the implementation of web-based learning in IRE, focusing on its contribution to student engagement and learning autonomy. A descriptive qualitative approach within an interpretivist paradigm was employed. Data were collected at Junior high school (SMP) Daarul Rahman Tempuling, Riau, Indonesia, through classroom observations, semi-structured interviews, document analysis, and field notes involving two Islamic Religious Education teachers, one school principal, and nine Grade VII students selected using purposive sampling. The data were analyzed using Braun and Clarke's six-phase thematic analysis. The findings revealed three major themes. First, web-based learning transformed instructional practices by promoting more interactive, flexible, and student-centered learning through digital platforms such as Google Classroom, Google Forms, and YouTube. Second, although internet connectivity, digital literacy, and infrastructural limitations remained significant challenges, teachers adapted instructional strategies to sustain learning activities. Third, web-based learning enhanced student engagement and learning autonomy by encouraging active participation, improving access to learning resources, and extending learning beyond classroom instruction. This study contributes to the growing literature on digital learning in Islamic Religious Education by providing qualitative evidence that web-based learning can support pedagogical transformation while strengthening student engagement and independent learning within the context of Islamic junior secondary schools.

Keywords: Digital learning; Islamic Religious Education; Learning autonomy; Student engagement; Web-based learning.

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INTRODUCTION

The rapid advancement of digital technologies has fundamentally reshaped educational systems worldwide, transforming how knowledge is accessed, delivered, and constructed [1]. The integration of information and communication technologies (ICT) into teaching and learning has shifted educational practices from traditional teacher-centered approaches toward more interactive, collaborative, and learner-centered environments [2], [3]. In contemporary education, digital learning is no longer regarded as a supplementary instructional tool rather, it has become a critical component of educational innovation that supports flexibility, accessibility, and active student participation [4], [5]. Consequently, educational institutions are increasingly encouraged to adopt technology-enhanced learning strategies that promote meaningful learning experiences and prepare students for the demands of the digital era [6].

Among the various forms of educational technology, web-based learning media have emerged as one of the most widely utilized approaches for facilitating teaching and learning activities [7], [8]. Web-based learning enables learners to access educational resources beyond the physical classroom, interact with multimedia content, participate in collaborative learning activities, and engage in self-directed learning regardless of temporal and geographical constraints [9]. Previous studies have demonstrated that web-based learning environments can enhance student engagement, learning motivation, digital literacy, and academic achievement by creating more flexible and interactive learning experiences [10], [11]. Furthermore, the integration of web-based learning media provides opportunities for educators to diversify instructional strategies and accommodate the diverse learning needs of students.

The increasing adoption of web-based learning has significant implications for Islamic Religious Education (IRE) [12], [13]. As a subject that seeks to develop students' religious understanding, moral values, character formation, and social responsibility, Islamic Religious Education requires instructional approaches that encourage meaningful engagement with learning content [14]. However, the teaching of Islamic Religious Education continues to encounter challenges associated with conventional pedagogical practices that often emphasize one-way knowledge transmission and passive learning [15]. Such approaches may limit students' opportunities to actively construct knowledge, critically reflect on religious values, and connect religious teachings with contemporary social realities [16], [17]. Therefore, the integration of digital learning media presents an important opportunity to enhance the relevance, accessibility, and effectiveness of Islamic Religious Education in increasingly digitalized learning environments.

The pedagogical potential of web-based learning media extends beyond the delivery of instructional content [18], [19]. Through platforms such as learning management systems, online discussion forums, educational videos, and interactive assessments, teachers can facilitate active learning experiences that encourage participation, collaboration, and independent inquiry [20]. Moreover, digital learning environments support the development of digital literacy and self-directed learning competencies, both of which have become essential skills in the twenty-first century [21]. In this regard, technology serves not merely as a medium of instruction but as a pedagogical resource that enables students to become active participants in the learning process.

This study is theoretically informed by constructivist learning theory and student engagement theory [22]. Constructivist perspectives emphasize that knowledge is actively constructed through interaction, exploration, and reflection rather than passively received from instructors [23]. Similarly, student engagement theory highlights the importance of behavioral, emotional, and cognitive involvement in learning activities as a key determinant of educational success [24], [25]. Within web-based learning environments, students are provided with opportunities to interact with multiple learning resources, regulate their own learning activities, and engage more actively in knowledge construction processes [26]. Consequently, web-based learning media may function as important mechanisms for strengthening student engagement and fostering learning autonomy within Islamic Religious Education [27].

Despite the growing body of research on digital learning, several important gaps remain in the existing literature [28]. Previous studies have consistently demonstrated the educational benefits of web-based learning in enhancing students' learning outcomes, information literacy, engagement, and self-regulated learning. For example, Ishimura and Fitzgibbons [29] reported that web-based inquiry learning supported students' information literacy through collaborative digital learning, while Banihashem et al [30] found that constructivist learning environments strengthened student engagement and self-regulation. Similarly, Aspandi and Muttaqin [31] emphasized the transformative role of digital technologies in improving educational practices and institutional digital capacity. Although these studies provide valuable evidence regarding the effectiveness of digital learning, they predominantly rely on quantitative approaches and focus on measurable educational outcomes rather than examining how web-based learning is implemented and experienced within authentic classroom settings.

This limitation is particularly evident in IRE, where empirical studies on web-based learning remain relatively scarce. Existing research has mainly discussed curriculum development, instructional management, or the integration of digital technology in general educational contexts providing limited understanding of how teachers and students experience, interpret, and negotiate web-based learning during everyday instructional practices. Consequently, qualitative evidence explaining the pedagogical processes through which web-based learning promotes student engagement and learning autonomy in Islamic Religious Education remains limited.

This study contributes to the growing body of literature by providing a qualitative understanding of how web-based learning is implemented and experienced within Islamic Religious Education at the Islamic junior secondary school level. Unlike previous studies that have primarily emphasized learning outcomes and technological effectiveness, this research examines the pedagogical processes through which web-based learning shapes instructional practices, promotes student engagement, strengthens learning autonomy, and extends learning beyond formal classroom settings. By incorporating the perspectives of teachers, students, and school leadership, the study offers contextual evidence on both the opportunities and challenges of integrating digital learning into religious education. The findings also provide practical insights for educators and school leaders seeking to implement more student-centered and context-responsive web-based learning practices in Islamic junior secondary schools.

METHODS

Research Design

This study employed a descriptive qualitative design within an interpretivist paradigm to explore the implementation of web-based learning in IRE and its influence on student engagement and learning autonomy [32]. The interpretivist paradigm assumes that educational realities are constructed through individuals' experiences, interactions, and interpretations within their social and educational contexts. Therefore, this approach was considered appropriate for examining how teachers, students, and school leaders experienced and interpreted the integration of web-based learning in everyday instructional practices rather than seeking to establish causal relationships or statistical generalizations.

A descriptive qualitative design was adopted because the study aimed to provide a comprehensive understanding of how web-based learning was implemented and experienced within an Islamic junior secondary school [33]. The focus of the investigation was to describe instructional practices, participants' experiences, implementation challenges, and the educational processes through which web-based learning supported student engagement and learning autonomy. This design enabled the researchers to examine the phenomenon within its natural setting while maintaining sensitivity to the institutional, social, and educational context in which the learning process occurred.

Research Setting

This study was conducted at Junior high school (SMP) Daarul Rahman Tempuling, Riau, Indonesia, an Islamic junior secondary school that has integrated web-based learning into the teaching of IRE. The school was purposively selected because it had consistently implemented digital learning platforms to support classroom instruction, making it an appropriate setting for examining the implementation of web-based learning in religious education.

The selection of this setting was based on three considerations. First, the school had established practices in utilizing web-based learning platforms, including Google Classroom, Google Forms, and YouTube, as part of regular instructional activities. Second, both teachers and students had prior experience in technology-supported learning, enabling the researchers to explore authentic instructional practices rather than newly introduced interventions. Third, the school provided a relevant context for investigating how web-based learning supported student engagement and learning autonomy while also revealing the practical challenges encountered during its implementation.

Table 1. Participant Characteristics

Participant Code	Participant	Role in the Study	Number
T-01 – T-02	Islamic Religious Education Teachers	Provided information on instructional planning, classroom implementation, and the use of web-based learning media.	2
P-01	School Principal	Provided information on school policies, technological support,	1

Participant Code	Participant	Role in the Study	Number
		and institutional strategies for web-based learning implementation.	
S-01 – S-09	Grade VII Students	Shared learning experiences, participation, learning autonomy, and perceptions of web-based learning.	9
Total			12

The number of participants was considered appropriate for this qualitative study because the objective was to obtain rich, contextualized insights rather than statistical representativeness. The inclusion of teachers, the school principal, and students enabled the researchers to capture the implementation of web-based learning from instructional, managerial, and learner perspectives. This diversity of perspectives strengthened the depth of the analysis and provided a comprehensive understanding of how web-based learning influenced student engagement and learning autonomy within Islamic Religious Education.

The student participants were purposively selected from a population of twenty-eight Grade VII students based on their active participation in web-based learning activities and their ability to reflect on their learning experiences. Their inclusion allowed the researchers to explore how students engaged with digital learning platforms, developed learning autonomy, and experienced web-based learning within the context of Islamic Religious Education.

Research Participants

Participants were selected using criterion-based purposive sampling, a sampling strategy commonly employed in qualitative research to identify information-rich individuals who possess direct experience with the phenomenon under investigation [34]. The inclusion criteria required participants to have actively engaged in the planning, implementation, management, or learning processes associated with web-based learning in IRE. This approach ensured that all participants were able to provide relevant and contextually grounded insights into the implementation of web-based learning within the school.

A total of twelve participants were involved in the study, comprising two Islamic Religious Education teachers (T-01 and T-02), one school principal (P-01), and nine Grade VII students (S-01 to S-09). The teachers were selected because they were directly responsible for designing and implementing web-based learning activities. The principal was included to provide information regarding institutional policies, technological support, and school-level strategies for integrating digital learning. The student participants were purposively selected from a population of twenty-eight Grade VII students based on their active participation in web-based learning activities and their ability to describe their learning experiences during the implementation process.

The number of participants was considered adequate because qualitative research emphasizes the depth, richness, and relevance of information rather than statistical representativeness. Data collection continued until sufficient contextual understanding and

informational redundancy were achieved, indicating that additional data no longer generated substantially new insights into the phenomenon under investigation.

Research Object

The object of this study was the implementation of web-based learning in IRE, with particular attention to how digital learning platforms were integrated into classroom instruction to support student engagement and learning autonomy. The study examined instructional practices adopted by teachers, students' participation in web-based learning activities, the use of digital platforms such as Google Classroom, Google Forms, and YouTube, as well as the opportunities and challenges encountered during their implementation. By focusing on these interconnected aspects, the study sought to provide a comprehensive understanding of how web-based learning reshaped teaching and learning practices within the context of Islamic junior secondary education.

Data Collection Instruments

Multiple qualitative data collection instruments were employed to obtain comprehensive and credible evidence regarding the implementation of web-based learning in IRE. The use of multiple instruments enabled the researchers to explore the phenomenon from different perspectives while strengthening the credibility of the findings through data triangulation.

Classroom observations were guided by an observation protocol designed to document instructional practices, teacher–student interactions, students' participation, the integration of web-based learning platforms, and classroom learning activities. During each observation, descriptive field notes were recorded to capture observable events, classroom interactions, and the use of digital learning media. Following each observation session, reflective notes were prepared to document the researchers' preliminary interpretations, contextual information, and methodological reflections that could support subsequent data analysis.

Semi-structured interviews were conducted using interview guides specifically developed for Islamic Religious Education teachers, the school principal, and students. Although the interview guides differed according to participants' roles, they were organized around common topics, including experiences with web-based learning implementation, perceived benefits, implementation challenges, student engagement, and learning autonomy. This approach provided sufficient flexibility for participants to elaborate on their experiences while maintaining consistency across interviews.

Document analysis was conducted using a document review checklist to examine instructional and institutional documents relevant to the implementation of web-based learning. The analyzed documents included lesson plans, digital learning materials, classroom assignments, assessment records, and school documents related to technology-supported learning. Documents were selected based on three criteria: (1) direct relevance to the implementation of web-based learning in Islamic Religious Education, (2) use during the period of data collection, and (3) their ability to provide supplementary evidence for information obtained through classroom observations and interviews.

Data Collection Procedure

Data were collected over a four-week period during March 2026 through classroom observations, semi-structured interviews, and document analysis. Prior to data collection, institutional approval and informed consent were obtained from all participants. Participants were then selected using criterion-based purposive sampling based on the inclusion criteria described previously.

Classroom observations were conducted to examine instructional practices, teacher–student interactions, students’ participation, and the use of web-based learning platforms. Descriptive field notes were recorded during observations, followed by reflective notes after each session. Semi-structured interviews were subsequently conducted with teachers, the principal, and students to explore their experiences, perceptions, and challenges regarding web-based learning [35]. Relevant instructional documents, including lesson plans, learning materials, assignments, and assessment records, were also collected to complement observational and interview data. Throughout the data collection process, information obtained from different sources was continuously compared to verify data completeness and strengthen the credibility of the findings before proceeding to thematic analysis.

Data Analysis

The data were analyzed using Braun and Clarke’s six-phase thematic analysis framework [36]. This approach was selected because it provides a systematic and flexible method for identifying, organizing, and interpreting patterns of meaning across qualitative datasets.

The first phase involved familiarization with the data through repeated reading of interview transcripts, observation notes, and documentary materials. During the second phase, initial codes were generated to identify meaningful units of information relevant to the research objectives. The third phase involved searching for patterns and relationships among codes, which were subsequently organized into potential themes.

In the fourth phase, emerging themes were reviewed and refined to ensure coherence, internal consistency, and alignment with the dataset. The fifth phase involved defining and naming themes by clarifying their conceptual boundaries and analytical significance. Finally, the sixth phase consisted of producing a coherent narrative account that integrated empirical findings with relevant theoretical and empirical literature.

Through this iterative analytical process, three overarching themes were identified: (1) the implementation of web-based learning media in Islamic Religious Education, (2) challenges encountered during technology integration, and (3) students’ responses and engagement in web-based learning environments.

Trustworthiness

The trustworthiness of the study was established following Lincoln and Guba’s framework, encompassing credibility, transferability, dependability, and confirmability.

Credibility was enhanced through prolonged engagement in the research setting, triangulation of data sources, and triangulation of data collection methods. Information obtained from teachers, students, and school administrators was continuously compared to identify convergent and divergent perspectives. Likewise, findings derived from observations, interviews, and document analysis were cross-checked to strengthen interpretive accuracy.

Transferability was supported through detailed descriptions of the research context, participant characteristics, and instructional environment, enabling readers to assess the applicability of the findings to comparable educational settings.

Dependability was strengthened by maintaining a systematic record of research procedures, data collection activities, coding decisions, and analytical processes. Confirmability was ensured through continuous reflection on researcher interpretations and the use of multiple sources of evidence to support analytical conclusions.

Ethical Considerations

Ethical principles were rigorously observed throughout the research process. Prior to data collection, written institutional approval was obtained from the school administration. All participants were informed about the objectives of the study, the voluntary nature of participation, and their right to withdraw from the research at any stage without consequence.

Informed consent was obtained from all participants before interviews and observations were conducted. To ensure confidentiality and protect participants' privacy, all personal identifiers were removed during transcription, analysis, and reporting. Pseudonyms were used where necessary, and all collected data were treated confidentially and used exclusively for academic research purposes.

RESULTS AND DISCUSSION

Results

The thematic analysis of interview transcripts, classroom observations, and documentary evidence generated twenty-seven initial codes, which were subsequently organized into eight analytical categories and synthesized into three overarching themes. Table 2 presents representative examples of the coding structure developed during the analytical process. The three themes illustrate how web-based learning transformed instructional practices, the challenges encountered during implementation, and its influence on student engagement and learning autonomy within Islamic Religious Education

Table 2. Development of Analytical Themes Through the Coding Process

Initial Codes	Categories	Themes
Accessing materials through Google Classroom	Digital learning access	Reconfiguring Islamic Religious Education Through Web-Based Learning
Use of instructional videos	Multimedia-supported instruction	Reconfiguring Islamic Religious Education Through Web-Based Learning
Online learning resources	Expanded learning opportunities	Reconfiguring Islamic Religious Education Through Web-Based Learning
Digital assignment submission	Flexible instructional delivery	Reconfiguring Islamic Religious Education Through Web-Based Learning
Internet instability	Connectivity barriers	Negotiating Technological and Infrastructural Constraints in Digital Learning Environments

Initial Codes	Categories	Themes
Delayed access to learning materials	Connectivity barriers	Negotiating Technological and Infrastructural Constraints in Digital Learning Environments
Difficulties using Google Classroom	Digital literacy challenges	Negotiating Technological and Infrastructural Constraints in Digital Learning Environments
Limited technological skills	Digital literacy challenges	Negotiating Technological and Infrastructural Constraints in Digital Learning Environments
Limited supporting facilities	Infrastructure limitations	Negotiating Technological and Infrastructural Constraints in Digital Learning Environments
Increased classroom participation	Behavioral engagement	Fostering Student Engagement and Learning Autonomy Through Web-Based Learning
Greater enthusiasm during learning	Affective engagement	Fostering Student Engagement and Learning Autonomy Through Web-Based Learning
Improved understanding of learning materials	Cognitive engagement	Fostering Student Engagement and Learning Autonomy Through Web-Based Learning
Revisiting materials independently	Self-directed learning	Fostering Student Engagement and Learning Autonomy Through Web-Based Learning
Learning beyond classroom hours	Learning autonomy	Fostering Student Engagement and Learning Autonomy Through Web-Based Learning

Reconfiguring Islamic Religious Education Through Web-Based Learning

The findings demonstrate that the integration of web-based learning substantially reconfigured instructional practices in Islamic Religious Education (IRE) at SMP Daarul Rahman Tempuling. Rather than serving merely as supplementary technological tools, web-based learning media became embedded within the pedagogical organization of classroom instruction. The adoption of digital learning reshaped how teachers designed, delivered, and managed learning activities by enabling more flexible access to instructional resources, continuous communication, and technology-supported assessment. Consequently, learning was no longer confined to face-to-face classroom interactions but extended into a more continuous and student-centered learning environment.

This pedagogical transformation was reflected in teachers' consistent integration of digital platforms, particularly Google Classroom, Google Forms, and YouTube, throughout the instructional process. Classroom observations showed that learning materials were provided in

various digital formats, including instructional videos, presentation slides, PDF documents, and online learning resources. These digital resources enabled teachers to organize instructional activities more systematically while allowing students to access learning materials both during classroom instruction and beyond formal school hours. Observational evidence further indicated that students actively interacted with digital learning resources, revisited learning materials independently, and engaged with instructional content outside scheduled classroom sessions.

Teachers consistently perceived that web-based learning enhanced instructional effectiveness by creating more engaging and accessible learning experiences. Rather than relying solely on conventional teacher explanations, participants emphasized that multimedia resources facilitated students' understanding of learning materials and encouraged more active participation during classroom activities. As explained by Teacher participant T-01:

“The use of web-based learning media greatly supports the learning process because students are more interested in learning through digital media than simply listening to the teacher’s explanation. Through instructional videos and online materials, students can understand the lesson more easily.”

Similarly, Teacher participant T-02 explained that the integration of digital platforms improved instructional management by simplifying the distribution of learning materials, assignments, and assessment activities. The participant further emphasized that web-based learning strengthened communication between teachers and students while providing more efficient and equitable access to instructional resources throughout the learning process.

Evidence from document analysis corroborated the interview and observational findings. Lesson plans, digital learning materials, assignments, and assessment documents consistently demonstrated that web-based learning had been systematically incorporated into instructional planning rather than implemented as an occasional supplementary activity. The integration of digital learning media was evident across different stages of classroom instruction, indicating that technology had become an established component of everyday pedagogical practice within Islamic Religious Education.

Overall, the convergence of evidence from interviews, classroom observations, and document analysis suggests that web-based learning did more than facilitate the use of digital platforms. It fundamentally reconfigured instructional practices in Islamic Religious Education by expanding access to learning resources, increasing instructional flexibility, supporting more student-centered learning, and creating continuous learning opportunities both inside and outside the classroom. These findings indicate that the transformation extended beyond technological adoption toward meaningful pedagogical change within the study context.

Negotiating Technological and Infrastructural Constraints in Digital Learning Environments

The findings revealed that the implementation of web-based learning in Islamic Religious Education (IRE) was accompanied by several technological and infrastructural constraints that

directly influenced instructional practices and students' learning experiences. Across interviews, classroom observations, and document analysis, participants consistently identified unstable internet connectivity, variations in students' digital literacy, and limitations in technological facilities as the principal challenges affecting the continuity of web-based learning. Rather than representing isolated technical issues, these constraints influenced students' participation in learning activities, their ability to learn independently, the timely completion of assignments, and the sustainability of technology-supported instruction.

Internet connectivity emerged as the most frequently reported challenge. Both teachers and students described situations in which unstable network access interrupted participation during online learning sessions, delayed access to digital learning materials, and postponed the submission of assignments. These connectivity problems also limited students' opportunities to revisit instructional resources independently outside classroom hours, thereby reducing the flexibility that web-based learning was intended to provide. Classroom observations confirmed that intermittent internet access occasionally prevented students from opening digital learning platforms or participating fully in technology-supported classroom activities.

Student participant S-05 explained:

"Sometimes the internet connection is not good, so we are late in opening learning materials or submitting assignments."

Teacher participant T-02 similarly reported that internet instability reduced the effectiveness of planned instructional activities and frequently required modifications to lesson implementation. When connectivity problems occurred, teachers adjusted instructional strategies by extending deadlines, simplifying online activities, or providing alternative learning instructions to ensure that students could continue participating despite technical disruptions.

In addition to connectivity issues, differences in students' digital literacy represented another important challenge during implementation. Interview findings indicated that although several students adapted quickly to digital learning platforms, others initially experienced difficulties navigating online applications, accessing instructional materials, and completing technology-based learning tasks independently. These differences influenced the extent to which students were able to participate confidently in web-based learning and limited the development of learning autonomy during the early stages of implementation.

Student participant S-03 stated:

"At first, we were confused about how to use Google Classroom and Google Forms, but gradually we became familiar with them."

Observational data reinforced these findings by showing that several students required repeated guidance from teachers before they were able to access learning materials, submit assignments, and utilize platform features independently. Teachers therefore provided continuous demonstrations, individual assistance, and repeated explanations until students became sufficiently confident to participate more independently in digital learning activities.

Participants also highlighted limitations in technological infrastructure as an additional constraint influencing the implementation of web-based learning. Although the school provided internet access and multimedia facilities, available technological resources did not always fully support instructional needs. Consequently, teachers continuously adapted instructional practices by selecting digital platforms that were familiar, accessible, and technically manageable for students. These adjustments helped minimize learning disruptions while maintaining students' participation and ensuring that instructional activities could continue despite existing infrastructural limitations.

Document analysis corroborated these findings. Lesson plans, learning records, and instructional documents demonstrated the consistent use of a limited number of digital platforms, particularly Google Classroom, Google Forms, and YouTube, reflecting the school's deliberate strategy to prioritize technologies that were practical, accessible, and compatible with available infrastructure. This evidence further indicated that instructional decisions were shaped not only by pedagogical considerations but also by the technological conditions within the school environment.

Overall, the convergence of interview, observational, and documentary evidence suggests that technological and infrastructural constraints extended beyond technical difficulties and substantially influenced the implementation of web-based learning in Islamic Religious Education. Internet connectivity, students' digital literacy, and infrastructural limitations affected student participation, opportunities for independent learning, assignment completion, and the continuity of technology-supported instruction. Nevertheless, teachers demonstrated considerable adaptability by modifying instructional strategies, providing ongoing guidance, and selecting accessible digital platforms to sustain meaningful web-based learning within the existing educational context.

Fostering Student Engagement and Learning Autonomy Through Web-Based Learning *Enhancing Student Engagement Through Web-Based Learning*

The findings indicate that the integration of web-based learning media substantially enhanced students' engagement in Islamic Religious Education (IRE). Across interviews, classroom observations, and document analysis, participants consistently described increased participation, stronger interest in learning activities, and more active involvement during classroom instruction following the implementation of digital learning. Rather than functioning solely as a medium for delivering instructional content, web-based learning created learning environments that encouraged students to participate more actively, interact with instructional resources, and remain engaged throughout the learning process. Evidence from the three sources further suggests that student engagement was reflected in behavioral, emotional, and cognitive dimensions of learning experiences.

From a behavioral perspective, classroom observations demonstrated that students became more actively involved in learning activities when digital media were integrated into instruction. Students participated more frequently in classroom discussions, responded to teachers' questions, completed digital learning tasks, and accessed instructional materials through online platforms during learning sessions. Compared with conventional classroom instruction, teachers observed greater levels of classroom participation and more consistent

involvement in learning activities, particularly when instructional videos, multimedia presentations, and interactive digital resources were incorporated into lessons.

Student participant S-01 described this experience as follows:

“When learning uses videos or digital media, we become more enthusiastic and do not get bored easily. The material is also easier to understand than simply listening to the teacher’s explanation.”

Teacher participant T-01 similarly observed noticeable changes in students’ classroom participation after web-based learning was implemented. According to the participant, students became more willing to contribute to classroom discussions, respond to instructional questions, and complete learning activities because digital learning materials attracted greater attention than conventional lecture-based instruction.

Beyond observable participation, the findings also demonstrated improvements in emotional engagement. Students consistently expressed greater enthusiasm, curiosity, and enjoyment when learning activities incorporated multimedia resources and digital platforms. Interviews suggested that instructional videos, visual learning materials, and online learning resources created more interesting learning experiences, reducing boredom commonly associated with conventional classroom instruction. Classroom observations further confirmed that students displayed higher levels of attentiveness and sustained interest throughout technology-supported learning sessions.

The findings likewise revealed evidence of cognitive engagement. Participants explained that web-based learning supported deeper understanding by allowing students to revisit instructional materials, explore learning resources independently, and learn at their own pace. The availability of instructional videos, presentation slides, and online resources enabled students to review concepts repeatedly until they understood the lesson, encouraging more active knowledge construction rather than passive reception of information. Teachers also reported that students demonstrated better comprehension during classroom discussions because they had opportunities to access learning materials before and after classroom instruction.

Document analysis strengthened these findings by demonstrating that lesson plans, digital learning materials, classroom assignments, and assessment activities consistently encouraged students to interact actively with instructional content. The systematic integration of multimedia resources, online assignments, and digital learning platforms reflected instructional practices designed to promote continuous student participation rather than passive knowledge transmission.

Overall, the convergence of interview, observational, and documentary evidence indicates that web-based learning enhanced student engagement across multiple dimensions. The integration of digital learning media increased students’ active participation in classroom activities, fostered greater enthusiasm and interest in learning, and promoted deeper cognitive involvement through continuous interaction with instructional resources. These findings suggest that student engagement was strengthened not only through increased classroom participation but also through more meaningful and sustained involvement in the learning process.

Promoting Learning Autonomy Through Web-Based Learning

The findings indicate that web-based learning also promoted students' learning autonomy by expanding opportunities for independent access to learning resources, self-directed learning, and continuous learning beyond classroom instruction. Across interviews, classroom observations, and document analysis, participants consistently described how digital learning platforms enabled students to regulate aspects of their own learning, revisit instructional materials independently, and continue learning activities outside scheduled classroom sessions. These findings suggest that web-based learning supported not only classroom participation but also encouraged students to assume greater responsibility for their own learning processes.

One important aspect of learning autonomy was independent access to learning resources. Students explained that instructional materials distributed through digital platforms remained accessible after classroom instruction, allowing them to review presentation slides, instructional videos, and learning documents whenever additional explanation was needed. Unlike conventional classroom instruction, where learning activities largely ended when the lesson concluded, web-based learning enabled students to access educational resources repeatedly according to their individual learning needs and pace.

Student participant S-06 explained:

“When I do not understand the lesson in class, I can open the learning materials again at home and watch the instructional videos until I understand them.”

Classroom observations supported this finding by showing that students frequently revisited digital learning materials before completing assignments or preparing for classroom discussions. Teachers also reported that students increasingly relied on available online resources to clarify concepts independently before seeking additional explanations during classroom instruction.

The findings further demonstrated the development of self-directed learning. Teachers observed that students gradually became less dependent on direct teacher explanations because digital learning platforms provided multiple sources of information that encouraged independent exploration. Rather than waiting for teachers to repeat classroom explanations, many students searched for supporting materials, reviewed previous lessons, and completed learning tasks using resources available through the digital platforms.

Teacher participant T-02 explained that:

“Students have become more accustomed to studying independently because learning materials remain available on Google Classroom. Before asking questions in class, many students first review the materials or watch the learning videos again.”

Document analysis reinforced these findings by demonstrating that lesson plans and digital learning activities consistently required students to access learning resources independently before completing assignments and participating in classroom discussions. The instructional design therefore positioned students not only as recipients of information but also as active learners responsible for managing parts of their own learning process.

Another important manifestation of learning autonomy was the extension of learning beyond classroom hours. Interview and observational data indicated that students frequently continued learning at home by reviewing instructional videos, rereading digital materials, and completing assignments through online platforms. Teachers similarly reported that students increasingly communicated about learning activities outside scheduled lessons, reflecting greater continuity between classroom instruction and independent study. This flexibility enabled students to organize their learning according to their individual needs while maintaining access to instructional resources regardless of time and place.

Overall, the convergence of evidence from interviews, classroom observations, and document analysis demonstrates that web-based learning promoted learning autonomy through three interconnected processes: providing continuous access to learning resources, encouraging self-directed learning behaviours, and extending learning beyond formal classroom instruction. These findings indicate that digital learning environments enabled students to become more independent learners who actively managed their own learning while remaining connected to instructional support provided by teachers.

Discussion

The present study provides qualitative evidence regarding how web-based learning reshapes instructional practices and learning experiences within Islamic Religious Education (IRE). Drawing on interviews, classroom observations, and document analysis, the findings reveal three interconnected contributions. First, the implementation of web-based learning reconfigured instructional practices by transforming conventional teacher-centered instruction into more interactive, flexible, and student-centered learning environments. Second, although technology integration was accompanied by technological and infrastructural constraints, teachers demonstrated continuous pedagogical adaptation to sustain instructional activities and ensure students' participation in digital learning. Third, web-based learning fostered higher levels of student engagement and promoted learning autonomy by expanding access to instructional resources, encouraging active participation, and extending learning beyond formal classroom settings.

Collectively, these findings indicate that the educational significance of web-based learning extends beyond the adoption of digital technologies as instructional tools. Instead, the findings suggest that technology functions as a pedagogical resource capable of reshaping how Islamic Religious Education is planned, delivered, and experienced by both teachers and students. The study therefore contributes to current discussions on educational technology by demonstrating that meaningful digital transformation is reflected not only in technological innovation but also in changes to instructional interaction, learner participation, and the organization of learning itself. The following sections discuss these findings in relation to relevant theoretical perspectives and previous empirical studies.

Web-Based Learning as a Pedagogical Transformation in Islamic Religious Education

The findings of this study suggest that the implementation of web-based learning in Islamic Religious Education represents a pedagogical transformation rather than merely the adoption of digital technology. This interpretation is consistent with studies demonstrating that digital technologies can shift instruction from teacher-centered knowledge transmission toward more

interactive, flexible, and student-centered learning environments [2], [3]. These changes enabled students to access learning resources independently, revisit instructional materials according to their individual learning needs, and participate more actively in the learning process. Accordingly, web-based learning functioned not only as an instructional medium but also as a pedagogical resource that reshaped teaching and learning practices within Islamic Religious Education.

These findings are consistent with constructivist learning theory, which views learning as an active process of knowledge construction through interaction, exploration, and reflection [22], [23]. They also support previous studies reporting that digital learning environments enhance instructional flexibility, broaden access to learning resources, and encourage active student participation. However, unlike earlier studies that primarily emphasized learning effectiveness and technological adoption, the present study demonstrates that web-based learning also transforms the pedagogical organization of Islamic Religious Education by changing how learning activities are designed, implemented, and experienced by both teachers and students.

An important contribution of this study is the finding that pedagogical transformation does not diminish the fundamental values of Islamic Religious Education. Instead, digital technology complements conventional instruction by expanding learning opportunities while preserving teachers' essential role in facilitating students' understanding of Islamic knowledge and values. These findings suggest that successful technology integration should be understood as a process of pedagogical adaptation in which digital technology strengthens instructional quality, promotes more student-centered learning experiences, and supports the broader educational goals of Islamic Religious Education.

Negotiating Technological and Structural Constraints in Web-Based Learning

Although web-based learning created new opportunities for teaching and learning, its implementation was not free from challenges. The findings show that unstable internet connections, differences in students' digital skills, and limited technological facilities continued to influence how learning activities were carried out. These conditions occasionally interrupted students' participation, delayed access to learning materials, and affected the completion of online assignments. To keep the learning process running, teachers adjusted their instructional strategies by selecting digital platforms that were familiar to students, simplifying learning activities, and providing additional guidance whenever technical problems occurred.

These challenges are widely reported in studies on digital learning, which emphasize that technology integration depends not only on the availability of digital platforms but also on reliable infrastructure, adequate digital literacy, and institutional support [7], [8]. The present study supports this view by showing that technological barriers can influence students' opportunities to participate fully in learning activities and to make effective use of digital learning resources. At the same time, the findings suggest that these constraints do not necessarily prevent successful implementation when teachers are able to adapt their teaching practices to local conditions.

A notable aspect of this study is the way teachers responded to these challenges. Rather than viewing technological limitations as barriers that stopped the learning process, they treated them as issues that required practical adjustments in daily teaching. This flexibility helped

maintain students' participation and allowed web-based learning to continue despite existing limitations. These findings highlight that the success of technology integration depends not only on technological infrastructure but also on teachers' readiness to respond to classroom realities. For this reason, efforts to improve digital learning should combine investments in infrastructure with continuous support for teachers' digital competencies and instructional development.

Strengthening Student Engagement Through Web-Based Learning

The implementation of web-based learning brought noticeable changes to the way students participated in Islamic Religious Education classes. Students were not only more active during classroom activities but also showed greater interest in exploring learning materials outside scheduled lessons. The availability of instructional videos, digital resources, and online assignments created learning experiences that were more varied than conventional teaching. As a result, students became more willing to join discussions, complete learning tasks, and interact with learning materials independently. These observations indicate that web-based learning encouraged students to become more engaged throughout the learning process rather than only during classroom sessions.

This pattern reflects the idea that meaningful engagement develops when students have opportunities to interact actively with learning activities instead of simply receiving information from teachers [24], [25]. Student engagement theory explains that effective learning involves behavioral, emotional, and cognitive engagement working together during the learning process. Previous studies have likewise reported that digital learning environments can increase students' participation and learning motivation by providing flexible access to instructional resources and creating more interactive learning experiences. The present findings support these studies while showing that similar patterns also emerge within the context of Islamic Religious Education.

Another important point emerging from this study is that increased engagement was accompanied by changes in students' learning behaviour. Students became more confident in accessing learning resources, discussing lesson content, and completing learning activities through digital platforms. Their participation was no longer limited to responding to teachers' questions in the classroom but extended to exploring learning materials independently whenever they needed additional explanation. This suggests that the value of web-based learning lies not only in the technology being used but also in its ability to encourage students to take a more active role in their own learning.

The findings further suggest that student engagement and learning autonomy are closely interconnected rather than representing separate educational outcomes. As students became more actively involved in classroom activities, interacted more frequently with digital learning resources, and demonstrated greater interest in exploring instructional materials, they gradually assumed greater responsibility for managing their own learning. In this way, active engagement served as an important foundation for the development of learning autonomy, as students increasingly regulated their learning activities, revisited instructional content independently, and continued learning beyond formal classroom sessions. This progression indicates that web-based learning not only encourages students to participate more actively during instruction but also supports the gradual transition toward more self-directed learning.

Promoting Learning Autonomy Through Web-Based Learning

One of the most meaningful outcomes observed in this study was the gradual development of students' learning autonomy during the implementation of web-based learning. Easy access to digital learning materials allowed students to review lessons, revisit instructional videos, and complete learning activities according to their own learning pace. As learning resources remained available beyond classroom hours, students were no longer fully dependent on teachers' explanations during face-to-face instruction. Instead, they had greater opportunities to manage their own learning by deciding when and how to review the materials provided through digital platforms.

This development reflects the growing importance of learning autonomy in contemporary education, where students are expected to become more responsible for their own learning [27]. Previous studies have shown that digital learning environments can support independent learning by providing continuous access to learning resources and encouraging students to explore information beyond classroom instruction. The present findings support this view while demonstrating that similar patterns can also be observed in Islamic Religious Education. Rather than reducing the teacher's role, web-based learning allowed teachers to guide students while simultaneously encouraging them to develop greater confidence in learning independently.

Another interesting aspect of this study is that learning autonomy emerged gradually through everyday learning activities rather than through specific instructional interventions. Students became accustomed to revisiting learning materials before asking questions, searching for additional information when they encountered difficulties, and completing assignments with greater independence. These findings suggest that learning autonomy develops through repeated learning experiences supported by accessible digital resources and appropriate teacher guidance. Therefore, the contribution of web-based learning lies not only in improving access to educational resources but also in helping students build independent learning habits that remain valuable beyond the classroom.

CONCLUSION

This study examined the implementation of web-based learning in Islamic Religious Education at SMP Daarul Rahman Tempuling, Indonesia. The findings show that the use of digital platforms, including Google Classroom, Google Forms, and YouTube, has supported a shift toward more interactive, flexible, and student-centered learning. Beyond improving access to learning materials, web-based learning encouraged greater student engagement and learning autonomy by enabling students to participate actively, revisit instructional resources, and continue learning beyond classroom hours. At the same time, the study identified challenges related to internet connectivity, digital literacy, and technological infrastructure, indicating that the effectiveness of web-based learning depends not only on technology itself but also on teachers' ability to adapt instructional practices and on institutional support. These findings contribute to the growing literature on technology integration in Islamic Religious Education by demonstrating that digital learning can strengthen pedagogical practices while maintaining the educational values and objectives of religious education. Therefore, successful

implementation of web-based learning requires continuous investment in digital infrastructure, teacher professional development, and students' digital competencies to ensure that technology can be integrated effectively and sustainably into religious education.

LIMITATIONS

Several limitations should be acknowledged when interpreting the findings of this study. First, the research was conducted within a single Islamic junior secondary school, which may limit the transferability of the findings to other educational contexts with different institutional characteristics, technological infrastructures, and student populations. Second, the study employed a qualitative approach with a relatively small number of participants, focusing primarily on in-depth exploration rather than broad generalization. Third, the investigation was limited to the perspectives of teachers, students, and school leadership within one educational setting. Additional insights may have emerged through the inclusion of parents, curriculum developers, or educational policymakers who also influence the implementation of technology-enhanced learning. Finally, the study focused on participants' experiences and perceptions rather than measuring learning outcomes quantitatively. Future research may extend this work by examining web-based learning implementation across multiple schools, employing mixed-methods approaches, or investigating the relationship between digital learning practices and measurable educational outcomes. Comparative studies involving different educational levels, geographical contexts, or instructional models may also provide a more comprehensive understanding of how web-based learning contributes to the transformation of Islamic Religious Education in diverse educational settings.

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AUTHOR CONTRIBUTION

P.A.M conceptualized the study, developed the research design, and led the overall research process, including data collection, qualitative data analysis, and primary manuscript drafting. D.H. contributed to instrument development, data management, and supported data analysis and interpretation. D.H. provided theoretical and analytical guidance, contributed to the refinement of the conceptual framework, and critically reviewed and revised the manuscript for important intellectual content. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

CONFLICT OF INTEREST

"The authors declare no conflict of interest."

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

During the preparation of this manuscript, the authors used ChatGPT (OpenAI) for language refinement and structural editing. After using this tool, the authors reviewed, verified, and revised the content as necessary and assume full responsibility for the final manuscript.

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