



Implementation of Islamic religious education learning based on digital literacy in building students' critical thinking skills in Islamic schools in Palu city

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Abstract

The rapid development of digital technology has brought significant changes to the field of education, particularly by expanding access to information and learning resources. However, the ease of access to information has not been fully accompanied by students' ability to think critically in evaluating and selecting information. Students tend to accept information instantly without adequate verification and in-depth analysis. Therefore, integrating digital literacy into Islamic religious education learning has become a strategic approach to enhancing students' critical thinking skills. This study aims to analyze the implementation of digital literacy-based Islamic religious education learning, identify its integration model with critical thinking skills, and examine effective learning strategies for improving these skills. The study focuses on the learning process, the forms of critical thinking skills developed, and the effectiveness of the learning outcomes. This research employed a qualitative approach using a case study design. Data were collected through observation, interviews, and documentation, and analyzed using data reduction, data display, and conclusion verification. The trustworthiness of the data was ensured through source and technique triangulation. The findings reveal that the implementation of digital literacy-based Islamic education learning was conducted systematically through the stages of planning, implementation, and evaluation. The students' critical thinking skills improved as reflected in their ability to identify and formulate problems, analyze and compare various sources of information, evaluate the credibility of information, interpret information into new understanding, and construct logical, evidence-based arguments. The effectiveness of digital literacy-based religious education learning was demonstrated by increased student participation in discussions and information exploration, greater independence in explaining learning materials, more reflective learning habits, enhanced ability to verify information, and improved quality of analytical arguments. The findings imply that digital literacy plays a strategic role in fostering students' critical thinking skills. Therefore, strengthening learning evaluation, improving teachers' digital competencies, and optimizing digital learning facilities are essential to support the effective implementation of digital literacy-based Islamic Religious Education.

Keywords: Islamic education, Digital literacy, Students' critical thinking

Introduction

Easy access to digital information is not always accompanied by adequate critical thinking skills (Nurdin, Pettalongi, Ahsan, & Febrianti, 2023; Nurdin, Pettalongi, Askar, & Hamka, 2021) [12, 13]. In practice, many students tend to accept information instantly without undergoing analysis, verification, and evaluation. Information obtained from social media or the internet is often assumed to be true without considering the credibility of the source (Nurdin, Pettalongi, & Ahsan, 2019; Nurdin & Rusli, 2012) [11, 15]. This situation indicates that the use of technology has not been fully balanced with good digital literacy skills. Students still tend to rely on a single source of information without comparing it with other, more relevant and reliable sources. They also often have difficulty distinguishing between fact and opinion, and are unable to identify bias or specific interests contained in information. As a result, the understanding formed is less in-depth and potentially leads to errors in drawing conclusions. This phenomenon indicates that

students do not yet fully possess the skills to sort information, understand its meaning in depth, and relate it to the context of Islamic religious education learning. Therefore, systematic efforts are needed in the Islamic religious education learning process to develop students' critical thinking skills, especially in dealing with the increasingly complex and unlimited flow of digital information.

Based on the previous (Hidayati & Sinaga, 2019; Lane & Oswald, 2016) [5, 6], students' critical thinking skills are still relatively low, especially in the aspects of analyzing, evaluating, and constructing arguments. In Islamic religious education learning activities, some students still rely on a single source of information, do not make enough comparisons between sources, and are unable to provide logical reasons for their opinions. Students also still experience difficulty in drawing conclusions and making decisions based on the information obtained. This condition indicates that the ongoing Islamic religious education learning has not fully encouraged

the development of higher-order thinking skills. Previous research also shows that students' critical thinking skills are still relatively low, especially in the aspects of analyzing, evaluating, and constructing arguments. In Islamic religious education learning activities, some students still show a tendency to receive information passively without undergoing in-depth processing. This is evident in students' low skills in identifying main ideas, understanding relationships between concepts, and breaking down information into simpler parts. Students are also considered often rely on a single source of information and lack the ability to compare it with other, more diverse sources (List & Oaxaca, 2024; Trixa & Kaspar, 2024) [7, 23]. They are also unable to provide logical and systematic reasons for their opinions, resulting in weak arguments that are not supported by strong evidence. Students also experience difficulty drawing conclusions and making decisions based on the information obtained. The thought process, which should involve analysis, evaluation, and reflection, has not yet developed optimally. This condition indicates that the ongoing Islamic religious education learning process has not fully encouraged the development of higher-order thinking skills. Therefore, more innovative and integrated Islamic religious education learning strategies are needed to improve students' critical thinking skills. This condition indicates a gap between the potential use of digital technology and the development of students' critical thinking skills. Although technology is available and utilized in the Islamic religious education learning process (Askar, Nurdin, Pettalongi, Pettalongi, & Basire, 2025) [2], its use has not been fully directed towards developing higher-order thinking skills. Students primarily use technology to obtain information quickly, but are not yet accustomed to processing and evaluating that information in depth.

This gap indicates that the use of technology in Islamic religious education learning remains instrumental, limited to a tool for delivering material, rather than a means of fostering critical and reflective thinking. Digital technology, however, holds significant potential for encouraging students to explore, analyze, and evaluate information independently. Without proper management, technology risks making students passive and dependent on instant information. Therefore, an approach to Islamic religious education learning is needed that systematically integrates digital literacy into the IS learning process. This approach must be designed in a planned manner, from the planning stage through implementation and evaluation, ensuring that the use of technology is not merely technical but also pedagogical. Digital literacy-based learning emphasizes not only technology skills but also the skills to understand, analyze, evaluate, and utilize information critically and responsibly (Nurdin, Nurliana, & Mashuri, 2022; Nurdin, Pettalongi, & Mangasing, 2019) [9, 14]. With this approach, students are expected to become not only users of technology but also individuals who think critically, are selective about information, and are able to make informed decisions based on the information they obtain.

Based on this description, it is important to conduct research on the Implementation of Digital Literacy-Based Islamic

religious education learning in building students' critical thinking skills in Islamic religious education in Palu City. This research is relevant considering the need to bridge the gap between the use of digital technology and the development of students' critical thinking skills in the Islamic Religious Education learning process. This research is expected to provide a comprehensive picture of how digital literacy is integrated into every stage of Islamic Religious Education learning, from planning, implementation, to evaluation. In addition, this study also aims to identify various strategies used by teachers in utilizing digital technology as a means to encourage students' critical thinking activities, such as skills in analyzing, evaluating, and concluding information.

Literature review

Digital literacy concept

Experts define digital literacy as more than just the ability to use software or operate digital devices (Fian, Rahmat, & Jenuri, 2024; Yadav, 2025) [4, 25]. They state that digital literacy involves a variety of cognitive, motor, sociological, and emotional skills needed for an individual to function effectively in a digital environment. They propose a holistic model with several skill dimensions, including: photo visual thinking, reproductive thinking, branching thinking, information-digital thinking, and socio-emotional thinking (with the addition of real-time thinking). UNESCO defines digital literacy as an individual's ability to understand, use, and create information through various digital technologies (Martínez-Bravo, Sádaba Chalezquer, & Serrano-Puche, 2022) [8]. This ability includes skills in accessing, evaluating, and managing information effectively in the digital environment. According to UNESCO, digital literacy is not limited to understanding technology but also encompasses ethical, security, and responsible aspects in the use of information and communication technologies.

The International Society for Technology in Education (ISTE) also provides insights into digital literacy (Trust, 2018) [24]. ISTE emphasizes that digital literacy is not only related to technical skills in using digital devices, but also encompasses critical thinking, creativity, and collaboration skills in digital environments. According to ISTE, digitally literate individuals must be able to utilize technology to communicate, solve problems, and create innovation. In other words, digital literacy is not only about reading and writing in digital formats, but also about how individuals interact with technology productively and responsibly. Several experts have also put forward more specific definitions of digital literacy. A pioneer in digital literacy studies defines it as the ability to understand and use information in various formats presented through digital technology. Digital literacy is more than just technical skills; it encompasses a deep understanding of how information is constructed and used in the digital space. Digitally literate individuals must be able to think critically about information encountered online.

Developing a broader concept of digital literacy by dividing it into several aspects, such as photo-visual literacy (the ability to understand information in the form of images), reproductive literacy (the ability to process and modify digital information),

and critical thinking literacy (the ability to evaluate the accuracy and validity of digital information). This approach demonstrates that digital literacy encompasses a range of skills that are more complex than simply the ability to read and write digitally. Another view highlights that digital literacy is multidimensional and encompasses eight main elements: cultural, cognitive, constructive, communicative, trust, creative, critical, and social. According to Belshaw (2012) [3], a digitally literate person must not only master technology but also understand how technology interacts with social and cultural aspects of everyday life. This view emphasizes that digital literacy is not merely technical but also has broad social and ethical impacts.

The role of digital literacy in education

Digital literacy plays a crucial role in education, particularly in addressing the challenges and opportunities of the technological era (Ahammad & Islam, 2025) [1]. With advances in information and communication technology, education is no longer limited to conventional classroom methods but is evolving toward digital-based learning. Digital literacy enables students and educators to access a wider range of learning resources, enhance critical thinking skills, and develop the ability to adapt to changing times. Therefore, digital literacy is a key factor in improving the quality of learning. One of the primary benefits of digital literacy in education is increased access to a wider variety of learning resources. In the digital age, information is available in various formats, such as text, video, audio, and infographics, and is easily accessible via the internet. By utilizing digital platforms such as e-learning, digital libraries, and online academic journals, students have the opportunity to gain broader insights from diverse perspectives. This not only enriches their learning experience but also helps them understand concepts more deeply and contextually.

Digital literacy also plays a role in improving students' critical thinking skills (Rodríguez-Díaz & Rodríguez-Ferrándiz, 2026) [19]. The ability to evaluate and analyze information is a crucial skill in the digital age, where information flows rapidly. With good digital literacy, students can develop the ability to sort valid and relevant information and avoid misinformation or fake news. This ability is crucial for developing an analytical and objective mindset, enabling them to make wiser decisions in both academic and daily life. In education, digital literacy also contributes to increasing the effectiveness of the learning process. The use of digital technology enables learning to be more interactive and engaging. For example, through the use of learning applications, educational videos, digital-based simulations, and online discussions, students can be more actively involved in the learning process. Technology-based learning methods make the learning experience more flexible and adaptive to different learning styles, enabling each student to achieve optimal understanding tailored to their needs.

The relevance of digital literacy in education is increasing in this era of ever-evolving technology. Digital skills are not only needed in academic settings but are also becoming an essential competency in the workplace. Therefore, educational

institutions need to incorporate digital literacy into their curriculum to prepare students for future challenges. By possessing strong digital skills, they can be better prepared to adapt to technological developments, both in the academic and professional worlds. To realize the effective implementation of digital literacy in education, the role of educators is crucial. Teachers and other educational staff must have a sound understanding of digital technology and be able to integrate it into the learning process. Furthermore, educational policies that support the wise use of technology are essential. For example, providing adequate digital infrastructure, training for educators, and regulations that ensure digital security for students. With comprehensive support, the implementation of digital literacy in education can be more optimal and have a broader positive impact.

Methodology

This study uses qualitative methods. In qualitative research, theory serves only as a guide for data gathering and analysis (Nurdin & Pettalongi, 2022; Nurdin, Stockdale, & Scheepers, 2016) [9, 18]. The data was collected through direct observation, in-depth interviews, and written document analysis at the research site (Nurdin *et al.*, 2023) [12] (Rusli, Hasyim, & Nurdin, 2021; Rusli & Nurdin, 2022) [20, 21]. The research was conducted in a government madrasah in Palu city, Indonesia. The researcher chose the school because it is a reputable government school that implements effective educational technology in Islamic education. The results of this study can later serve as a reference and guideline for integrating local language into the teaching of the Islamic religion and for making schools a model for other educational institutions. Data were collected through direct observation, focus group discussion, in-depth interviews, and written document analysis. The interviews involved the school principal, five teachers, and ten students. The interviews were recorded and transcribed. The transcripts were consulted with participants to obtain their consent (Nurdin, Scheepers, & Stockdale, 2022; Nurdin, Stockdale, & Scheepers, 2014) [16, 17]. The data analysis used a deductive approach, which can be interpreted as a research procedure that produces deductive data from interviews and field notes. Data analysis was conducted using thematic analysis from Strauss and Corbin (1998) [22]. The analysis started with open, axial, and selective coding. The final result of the data analysis is the set of themes identified.

Results and Discussion

Implementation of Islamic religious education learning based on digital literacy

Digital literacy-based Islamic Religious Education (PAI) learning planning in Islamic schools in Palu City can be systematically identified through document analysis of the Islamic Religious Education (PAI) Learning Modules used by teachers. Based on the results of the documentation analysis, it was found that the Islamic Religious Education (PAI) learning modules developed have demonstrated efforts to integrate digital literacy into the Islamic Religious Education (PAI) learning components, although the level of integration varies

among teachers. In the Islamic Religious Education learning objectives component, most Islamic Religious Education (PAI) learning modules not only emphasize achieving cognitive aspects but also begin to move towards developing critical thinking skills. This is evident from the use of operational verbs such as analyze, evaluate, and conclude, which indicate an orientation towards higher-order thinking skills. However, the explicit link between Islamic Religious Education (PAI) learning objectives and digital literacy indicators has not been fully formulated systematically.

In the Islamic Religious Education (ISE) learning materials component, it was found that teachers have utilized various digital learning resources, such as Islamic Religious Education (ISE) learning videos, online articles, and internet-based teaching materials. The materials used are not only textual but also multimodal, allowing students to access information from various media forms. This indicates an effort to develop aspects of access and understanding of digital literacy. In the ISE learning methods and strategies component, the ISE learning modules show a tendency to use approaches that encourage student activeness, such as group discussions, questions and answers, and information-search-based assignments. However, in several ISE learning modules, ISE learning strategies have not been explicitly designed to develop digital information evaluation skills, so critical aspects of digital literacy are still not optimal. Furthermore, in the media and learning resources component, digital literacy integration appears quite dominant. Teachers include the use of digital devices such as laptops, projectors, and internet access as part of the ISE learning process. Furthermore, learning resources are no longer limited to textbooks, but have expanded to various digital platforms.

In terms of assessment, some Islamic Religious Education (ISE) learning modules have focused on critical thinking skills-based assessments, such as analysis and discussion assignments. However, assessment instruments specifically measuring critical thinking and digital literacy indicators have not yet been systematically structured. Based on the results of documentation analysis of ISE learning modules, it was found that the integration of digital literacy and critical thinking skills has begun to be implemented in various ISE learning components. To clarify these findings, the following table presents an analysis of ISE learning modules based on digital literacy and critical thinking.

Digital Islamic religious education learning design

Interviews with teachers indicate that digital literacy-based Islamic Religious Education (PAI) lesson planning is based not only on curriculum requirements but also on teachers' pedagogical awareness of the importance of developing students' critical thinking skills. Most teachers stated that the use of digital media in Islamic Religious Education (PAI) lessons aims to increase student engagement and facilitate student understanding. One teacher expressed this:

"In developing the Islamic Religious Education (Akidah Akhlak) learning module, I deliberately included the use of digital media, such as videos from social media, so that students not only receive the material but also can search for and learn the information themselves."

This statement demonstrates that teachers are oriented toward constructivist Islamic Religious Education (PAI) learning, where students are encouraged to actively seek and process information. Furthermore, teachers recognize that digital literacy can be a means of developing critical thinking skills. Another teacher emphasized that in designing Islamic Religious Education (PAI) lessons, they strive to adapt the use of technology to the characteristics of their students:

"We strive to select digital media that are appropriate for the PAI (Fiqh) learning material and adapt it to the conditions and characteristics of the students in the class. This is done to make the material easier to understand and less boring. For example, for the material on Obligatory Prayers and Sunnah Prayers, we use videos or visual images because they allow learning and direct practice at the same time. For other materials, we utilize interactive presentations or other digital resources. By selecting the right media, students become more interested, more active in participating in Fiqh lessons, and more easily understand the concepts taught."

Interview results also showed that teachers have attempted to integrate activities that encourage critical thinking, such as providing information search assignments, problem-based discussions, and digital content analysis. Several teachers acknowledged that they still face challenges in designing Islamic Religious Education (PAI) learning that specifically develops digital information evaluation skills. Interview data was analytically reduced to identify key themes in Islamic Religious Education (PAI) learning planning, such as the use of digital media, Islamic Religious Education (PAI) learning strategies, and the objectives of developing critical thinking. The data were then presented in thematic categories and verified through triangulation with documentation data from Islamic Religious Education (PAI) learning modules. The analysis showed that the digital literacy-based Islamic Religious Education (PAI) learning design has led to the development of critical thinking skills, but still requires strengthening in a more systematic design aspect based on measurable indicators.

Implementation of Islamic religious education learning based on digital literacy

The implementation of digital literacy-based Islamic Religious Education learning in public Islamic schools in Palu City is an implementation stage that demonstrates how Islamic Religious Education learning plans are realized in real classroom practice. Based on research results through observation, interviews, and documentation, the implementation of Islamic Religious Education learning shows an integration between the use of digital technology and efforts to develop students' critical thinking skills. This implementation is analyzed based on four main indicators of digital literacy, namely access, understanding, use, and evaluation of digital information Based on the Digital Literacy Theory – Eshet-Alkalai. In this study, teachers develop number of skills related to critical thinking.

Analytical skills

Analytical skills are developed through assignments that require students to identify and compare information from various digital sources. Based on observations, teachers consistently encourage students not only to collect information but also to critically process it by sorting, categorizing, and identifying relationships between the information they obtain. This process demonstrates that students are trained to understand the structure of information more deeply, enabling them to interpret its meaning beyond simply receiving data. In relation to Bloom's Taxonomy theory, this activity falls within the higher cognitive domain, specifically at the analysis level (C4), where students are required to break down information into smaller components and understand the relationships between these components. Furthermore, the process of comparing and assessing information also begins to move toward the evaluation level (C5), demonstrating that the Islamic Religious Education (PAI) learning process has accommodated the development of higher-order thinking skills (HOTS). Therefore, the Islamic Religious Education (PAI) learning strategy used focuses not only on mastery of the material but also on the systematic and continuous development of students' critical thinking skills. This is reinforced by the teacher's statement:

"I usually assign students to find information from several sources, both online and other digital sources. Afterward, they are asked to compare the information they have obtained and determine which is most appropriate or relevant to the material being studied. In addition to making their selections, they are also required to explain the reasons for their choices to demonstrate their thought process. In this way, students not only gather information but also learn to analyze and evaluate the sources they use, thus optimally developing their critical thinking skills."

Based on the teacher's statement, it can be concluded that the Islamic Religious Education learning strategy implemented is oriented towards developing students' critical thinking skills. They are not only tasked with searching for information but also with comparing various sources, selecting the most relevant information, and justifying their choices. This ensures that the Islamic Religious Education learning process does not stop at simply gathering information, but rather encourages students to analyze, evaluate, and justify their thinking logically and systematically. One student stated:

"We don't just seek answers to questions, but are also asked to explain why the information is considered correct or why it differs from other sources, and then conclude which information is most accurate, providing clear reasons. This activity allows us to understand the material more deeply, because we don't just accept information at face value but also learn to analyze and assess its accuracy."

Based on the confirmation from the students, it can be understood that the ongoing Islamic Religious Education learning process has encouraged active involvement and the development of critical thinking skills in real terms, where

students do not only focus on finding answers, but are also required to provide logical reasons for the information selected through the process of reading, comparing, and evaluating various sources, so that they are able to conclude information more precisely and in depth, and do not receive information passively, but rather process and assess its truth critically and responsibly.

Evaluation skills

Evaluation skills are developed through discussion activities that encourage students to assess the accuracy and relevance of information. In Islamic Religious Education (PAI) learning, teachers actively facilitate discussions that require students to provide arguments, as stated by the following student:

"I always emphasize to students not to immediately believe information they obtain from the internet. They must first verify the accuracy of the information by comparing it with other, more reliable sources. I also encourage them to examine the source, the accuracy of the content, and its relevance to the material being studied. In this way, students not only access information but also learn to be critical in evaluating and using the information they find."

Based on the teacher's statement, it can be concluded that the Islamic Religious Education learning process implemented not only focuses on utilizing technology as a source of information, but also emphasizes the importance of digital literacy and critical thinking skills in students. They are directed not to accept information directly without verification, but rather to check it through various more reliable sources, assess the origin and accuracy of the information, and consider its relevance to the Islamic Religious Education learning material. This allows students to use the information wisely, selectively, and responsibly to support their understanding. One student explained his evaluative awareness as follows:

"When we get information from the internet, we usually don't immediately believe it, but first compare it with other sources. This is because we realize that not all information on the internet is true or reliable. Therefore, we try to find several references and then see which ones are most appropriate and reasonable. This way, we can be more confident in the information we use and simultaneously learn to be more critical in understanding the material."

Based on the students' statements, it can be understood that they have developed an evaluative awareness of the use of information from the internet, where they no longer receive information passively, but try to compare it with various other sources to assess the level of truth and trustworthiness, so that they are able to choose the most appropriate and logical information, while also demonstrating the development of critical thinking skills and a selective and responsible attitude in understanding Islamic Religious Education learning materials.

Interpreting skills

Interpreting skills are developed through activities such as re-explaining information in their own words and relating the material to real-life contexts. One teacher stated:

"I often ask students to re-explain the material they've learned in their own words. The goal is for them to truly understand the content, rather than simply memorizing or copying from existing sources. This way, I can assess their understanding of the material and simultaneously hone their skills in processing and conveying information. Furthermore, this activity encourages students to think more actively and critically in understanding the lesson."

Based on the teacher's statement, it can be concluded that the Islamic Religious Education (PAI) learning strategy implemented focuses on deepening students' conceptual understanding through activities that re-explain the material in their own words, so that they don't simply memorize or copy information, but rather truly process, understand, and internalize the material being studied. Furthermore, this activity also allows teachers to evaluate students' level of understanding more authentically while encouraging the development of active, critical, and communicative thinking skills in conveying information. One student said:

"We are usually asked to re-explain the material after searching for information online, so we must truly understand what we have learned. It's not enough to just find the answer; we also have to be able to re-articulate it in our own words to make it clearer and easier to understand. This way, we become more active in learning and don't just memorize, but truly understand the content of the material being studied."

Based on the student's statement, it can be understood that the Islamic Religious Education (PAI) learning process that is consistently implemented encourages active involvement and deeper understanding, where students are not only required to find answers from various sources, but also to re-explain the material in their own language, so that they truly process, understand, and internalize the information obtained; this shows that Islamic Religious Education (PAI) learning is no longer focused on memorization alone, but on developing skills in understanding, communicating, and thinking critically in re-conveying the material clearly and meaningfully.

Decision making skills

Decision-making skills are developed through assignments that require students to draw conclusions and determine solutions based on analyzed information. One teacher explained:

"At the end of the Islamic Religious Education learning process, I usually ask students to draw conclusions independently and express their personal opinions based on the information and material they have previously studied. This allows them not only to understand the Islamic Religious Education learning content more deeply but also to demonstrate critical and reflective thinking skills regarding the knowledge they have acquired."

Based on this teacher's statement, it can be concluded that the Islamic Religious Education (PAI) learning strategy implemented emphasizes strengthening students' critical and reflective thinking skills. They are not only asked to understand

the material but also to draw conclusions independently and express their personal opinions based on the information they have learned. This ensures that the Islamic Religious Education learning process does not stop at understanding but develops into deeper and more meaningful skills in analyzing, evaluating, and reflecting on knowledge.

Conclusion

The implementation of digital literacy-based Islamic Religious Education (ISE) learning to develop students' critical thinking skills has been systematically implemented through the planning, implementation, and evaluation stages. During the planning stage, teachers integrate digital literacy into learning tools by selecting media, platforms, and digital learning resources relevant to the material. During the implementation stage, learning utilizes various digital media, such as instructional videos, interactive presentations, the internet, and learning applications that encourage students to actively seek, analyze, and discuss information. Meanwhile, during the evaluation stage, teachers use online quizzes, digital-based assignments, projects, and reflections to assess students' understanding and critical thinking skills. This implementation is supported by digital madrasah policies, the availability of infrastructure, and teachers' competence in utilizing technology. Although challenges remain, including limited internet network stability and differences in students' digital literacy skills. The improvement in students' critical thinking skills that emerges in ISE learning through digital literacy is evident in their increased ability to access, understand, analyze, evaluate, and utilize digital information logically and responsibly. Students no longer simply receive information from teachers, but are able to search for references from various digital sources, compare information, identify the accuracy of sources, develop arguments based on evidence, and express opinions in discussions and problem-solving activities. Digital literacy-based learning also increases student participation, learning independence, collaboration, communication, and reflection, making the learning process more active, collaborative, and student-centered.

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