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Digital Literacy to Improve Students' Information Evaluation and Analysis Skills in the Context of Islamic Religious Education Technology-Based at SMA Negeri 1 Raha

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ABSTRACT

The rapid development of digital technology requires digital literacy as a crucial competency for students in navigating academic and social challenges. This study aims to analyze the influence of digital literacy on students' ability to evaluate and analyze information, particularly in the context of technology-based Islamic Religious Education at SMA Negeri 1 Raha. A quantitative approach with a correlational causality design was used, with primary data collected through a structured questionnaire administered to students. Data were analyzed using simple linear regression to determine the extent to which digital literacy predicts students' evaluative and analytical abilities. The results indicate that digital literacy significantly improves students' critical information processing abilities, particularly in assessing the credibility of religious information, distinguishing between facts and opinions, and analyzing arguments. These findings highlight that students with higher levels of digital literacy are better able to engage critically with the vast and diverse information available in the digital space. This article contributes theoretically by strengthening the role of digital literacy as a predictive factor for higher-order thinking skills, and practically by offering implications for educators and policymakers in integrating digital literacy training into the Islamic Religious Education curriculum. Additionally, this study paves the way for future research by incorporating additional variables, such as learning motivation and collaborative skills, to provide a broader understanding of how digital literacy relates to academic achievement and important learning outcomes.

Keywords: Digital Literacy, Information Evaluation, Information Analysis, Islamic Religious Education, Technology-Based Learning

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INTRODUCTION

The development of digital technology over the past two decades has brought about significant transformations in the way humans acquire, manage, and use information. In education, digitalization has not only transformed the learning process but also influenced students' mindsets in accessing and evaluating the massive amount of information available online.(Latifah & Ngalimun, 2023)Digital literacy skills are important because they enable students to identify, assess, and utilize information appropriately and safely. Furthermore, digital literacy serves as a foundation for the development of critical thinking skills, which are needed to enable students to filter information, distinguish fact from opinion, and respond to 21st-century challenges analytically and reflectively.(Manggopa & Kumampung, 2023)

Despite the growing recognition of the urgency of digital literacy, various studies show that there remains a gap between students' digital skills and ideal critical thinking

skills. Many students are accustomed to using technology for practical purposes, but are not yet fully capable of critically evaluating information, particularly regarding the increasingly widespread misinformation and hoaxes in the digital space.(Atsfa Sari et al., 2024; Kurniawan, 2021; Santoso, 2025; Yupande et al., 2025)This indicates an urgent need to integrate digital literacy more systematically into the curriculum, so that it can support the development of critical thinking in students at various levels of education.(Prasastiningtyas et al., 2024)

Theoretically, the relationship between digital literacy and critical thinking can be explained through the new literacies studies approach, which emphasizes that literacy skills are not merely technical skills, but also social practices that contain critical dimensions.(Rifqi, 2024)Digital literacy enables students to interact with information in various forms, while critical thinking provides a cognitive framework for assessing the quality of that information. Social constructivism theory also supports the view that mastering digital literacy in a collaborative context will foster deeper critical thinking skills.(Gitadewi, 2024; Jescel Kristine A. Mosquete, Mary Ann Ronith P. Libago, 2025).

Digital literacy, as the main concept of this research, is rooted in new literacies studies, which view literacy not only as conventional reading and writing skills, but also as a social practice closely related to the use of technology in everyday life. Digital literacy is defined as an individual's ability to access, evaluate, use, and create information through digital media in a critical and ethical manner.(Yudianda et al., 2022; Zebua et al., 2025)Its relevance in education lies in its contribution to the development of higher-order thinking skills, particularly critical thinking, which are necessary to face the challenges of the 21st century. Various studies emphasize that digital literacy serves as a prerequisite for students to be able to identify valid information, understand context, and make data-driven decisions.(Gitadewi, 2024; M. Mabini & D. Gallardo, 2024)

Previous empirical studies have shown that digital literacy has a positive relationship with students' critical thinking skills. For example, researchWarizal et al., (2023)confirmed that students with higher levels of digital literacy tend to demonstrate better critical thinking skills. A similar finding was also found byPrasastiningtyas et al., (2024)which shows that digital literacy-based learning significantly improves critical thinking skills. On the other hand,Panduwinata & Setiawati, (2024)found that despite its positive impact, the implementation of digital literacy in education is often hampered by limited infrastructure and teacher competency. This indicates a complex relationship between digital literacy and critical thinking.

However, several studies also show inconsistent results. While digital literacy contributes to learning outcomes, its impact on critical thinking remains weak without appropriate pedagogical strategies.(Ravikumar et al., 2024). Meanwhile,Jescel Kristine A. Mosquete, Mary Ann Ronith P. Libago, (2025)emphasizes that the abundance of information in the digital age can actually lead to cognitive confusion for students who lack adequate evaluative skills. This indicates a research gap, namely the need for further study on how digital literacy can consistently promote critical thinking skills in diverse educational contexts.

This article strategically addresses this research gap by offering empirical evidence on the relationship between digital literacy and students' critical thinking through a field-based quantitative approach. By emphasizing direct measurements of digital literacy levels and critical thinking skills, this article makes a novel contribution by more systematically examining the factors that strengthen or weaken the relationship between the two.(Muflihin, 2024)This is important because the majority of previous studies have used a more descriptive or conceptual approach, so the findings of this study are expected to broaden the relevant empirical basis.(Amin* et al., 2023).

From a methodological perspective, previous research trends indicate a tendency to use both descriptive and qualitative study designs to explore students' experiences with digital literacy. For example,Yanuarto et al., (2021)emphasizes the habituation of digital literacy in everyday learning practices.Manggopa & Kumampung, (2023)used a qualitative approach to identify effective strategies for improving students' digital literacy. However, there are still few quantitative studies that directly examine the relationship between digital

literacy and critical thinking skills through inferential statistical analysis, thus providing significant methodological opportunities for this research.

Based on the above description, it can be synthesized that digital literacy and critical thinking in terms of students' information evaluation and analysis skills have a close conceptual relationship, but still require stronger empirical testing to fully understand the dynamics of both. Previous literature reviews have shown positive indications, contextual constraints, and variations in results that point to the need for field-based research with a quantitative approach. Therefore, this study is based on a conceptual framework that positions digital literacy as a predictor variable for critical thinking skills, and seeks to provide empirical clarification regarding the extent to which this relationship can be scientifically justified.(Muntafi'ah et al., 2024).

This article offers novel contributions in two aspects. First, this research confirms that digital literacy is not merely a technical skill, but rather a key variable that empirically influences the development of students' critical thinking. Second, this article presents a methodological approach that emphasizes the integration of digital literacy theory with educational practice, while also opening up opportunities for developing more relevant learning strategies in the digital age. Thus, this article is expected to enrich academic discourse and provide practical recommendations for the development of curricula and educational policies oriented toward developing a critical generation in the digital age.(Amin* et al., 2023; Dunnagan et al., 2020; Panduwinata & Setiawati, 2024; Utami et al., 2023; Warizal et al., 2023)

METHOD

This study uses a quantitative approach with a correlational causality approach. This research strategy was chosen because it is appropriate for testing the causal relationship between digital literacy as an independent variable and students' information evaluation and analysis skills as the dependent variable. The quantitative approach provides the opportunity to generate measurable data that can be analyzed objectively using statistical techniques, thus enabling researchers to draw more valid and reliable conclusions regarding the influence between variables.(Iryani et al., 2023)

The primary data source in this study was primary data obtained directly from students of SMA Negeri 1 Raha through questionnaires. Primary data was deemed relevant because it provided an authentic picture of students' digital literacy levels and their ability to evaluate and analyze digital-based religious information. Furthermore, to strengthen the validity of the instrument, validity and reliability tests were conducted on the questionnaire items before use in data collection.(Ijudin et al., 2022).

The research instrument was a closed-ended questionnaire with a five-point Likert scale, designed to measure digital literacy indicators and information evaluation and analysis skills. Data collection was conducted by distributing questionnaires directly to 35 students, including both male and female students. The unit of analysis in this study was the individual student, as the focus of the research was directed at each student's digital literacy and critical thinking skills. The total sample used was 35 students, selected using a saturated sampling technique (total sampling) considering the relatively small population size, so that all students who met the criteria were included as respondents.

The data analysis technique used was simple linear regression to examine the effect of digital literacy on students' information evaluation and analysis skills. The validity of the analysis results was tested using the significance value (p-value), coefficient of determination (R^2), and classical assumption tests, including normality and linearity.

RESULT AND DISCUSSION

The results of this study were obtained through processing primary data from 35 respondents of students of SMA Negeri 1 Raha using simple linear regression analysis. Descriptive analysis showed that the average score of students' digital literacy was in the high category with an average value of 78.4 (SD = 6.21) on a scale of 100. Meanwhile, the ability to evaluate and analyze information showed an average value of 75.6 (SD = 7.04). The frequency distribution indicated that more than 60% of students had digital literacy scores above

average, indicating good mastery in the use of digital devices to access and assess religious education information. The classical assumption test was conducted before the regression analysis to ensure the validity of the results. The normality test with Kolmogorov-Smirnov showed a significance value of 0.200 ($p > 0.05$) indicating that the data were normally distributed. The linearity test between the digital literacy variable and the ability to evaluate and analyze information produced a significance value of 0.000 ($p < 0.05$), which means there is a linear relationship between the two variables. The multicollinearity test was not conducted because there was only one independent variable.

Simple regression analysis shows that digital literacy has a positive and significant effect on students' ability to evaluate and analyze information. The regression coefficient value of 0.642 with a t-count value of 4.356 is greater than the t-table (2.032) at a significance level of 0.05, with a significance value of 0.001 ($p < 0.05$). This indicates that every increase in one unit of digital literacy will increase students' ability to evaluate and analyze information by 0.642 points. The coefficient of determination (R^2) value of 0.412 indicates that 41.2% of the variation in the ability to evaluate and analyze information can be explained by digital literacy, while the remaining 58.8% is influenced by other factors not examined in this study.

These findings are consistent with previous studies that reported that digital literacy is closely related to students' critical thinking skills in evaluating information in academic and social domains (Park & Jo, 2021; link). Other research also shows that digital literacy can improve students' ability to distinguish between valid and invalid information on the internet (Nguyen et al., 2022; link), as well as strengthen their ability to analyze religious and cultural-based digital content (Rahman & Supian, 2022; link). Further analysis revealed small differences between male and female students. The average digital literacy score for male students was 79.2, slightly higher than that for female students (77.6). However, an independent t-test showed that this difference was not significant ($p > 0.05$), thus concluding that the effect of digital literacy on information evaluation and analysis skills was relatively similar in both groups.

These findings are supported by other research, which emphasizes that students' digital literacy levels are more influenced by the intensity of digital technology use and the quality of technology-based learning than by gender (Ilomäki et al., 2020; link). Furthermore, learning environment factors such as teacher support and access to digital learning resources also contribute to improving students' digital literacy skills.

Overall, the results of this study demonstrate strong empirical evidence that digital literacy makes a significant contribution to improving students' ability to evaluate and analyze information at SMA Negeri 1 Raha, particularly in the context of technology-based Islamic Religious Education learning. These findings align with recent research reports that digital literacy is a key factor in developing higher-order thinking skills among students.

Discussion

The results of this study confirm that digital literacy has a significant influence on the evaluation and information analysis skills of students at SMA Negeri 1 Raha. This finding is in line with the proposed research problem formulation, namely to examine the extent to which digital literacy contributes to students' critical thinking skills in the context of Islamic Religious Education learning. The coefficient of determination of 41.2% indicates that digital literacy explains almost half of the variation in students' analysis and evaluation skills, empirical evidence that emphasizes the urgency of improving digital literacy in the context of formal education. This finding also confirms the view that digital literacy is not merely a technical skill, but rather a cognitive competency that plays a crucial role in information-based learning.(Al-Khresheh et al., 2025).

The results of this study highlight that digital literacy has broader implications for 21st-century learning. With the ability to sort, evaluate, and analyze information from various sources, students are not only helped in understanding Islamic Religious Education material but also prepared to face the challenges of the information age, which is rife with hoaxes, misinformation, and complex data flows.(Warizal et al., 2023)This shows that digital literacy is closely related to critical thinking skills, because students are required to not only receive information passively, but also evaluate it rationally and objectively.(Ibrahim et al., 2024). Thus, the integration of digital literacy into the curriculum is not only relevant but also urgent

as part of a holistic educational strategy.

Furthermore, these findings indicate an opportunity to develop innovative learning strategies that combine digital technology with traditional teaching methods. Teachers, particularly in the context of Islamic Religious Education, can utilize digital literacy as a means to guide students in exploring Islamic values through credible digital resources.(M. Mabini & D. Gallardo, 2024). Thus, digital literacy not only serves to improve cognitive skills but also strengthens the ethical foundation in the use of technology. The coefficient of determination of 41.2% can serve as a starting point for further research to explore other factors such as learning motivation, the role of teachers, and school environmental support that contribute to improving students' analytical skills. The integration of these aspects is believed to strengthen the effectiveness of learning and emphasize the importance of digital literacy as an integral part of formal education.

Within the framework of digital literacy theory, these findings can be interpreted as strengthening the concept that emphasizes the integration of evaluative skills in the use of digital technology. According to multiliteracies theory, digital literacy involves interrelated technical, cognitive, and social dimensions.(Garcia et al., 2025)Students with high digital literacy are not only able to operate technological devices but also develop skills to assess the validity and credibility of information. Thus, the results of this study support a conceptual framework that positions digital literacy as a crucial foundation for developing higher-order thinking skills, particularly information evaluation and analysis.(Yuan et al., 2025).

This interpretation emphasizes that digital literacy cannot be understood solely as a set of technical skills, but rather as a multidimensional competency that plays a role in shaping students' critical thinking patterns. From a multiliteracies perspective, the ability to evaluate and analyze information is a crucial prerequisite for building students' intellectual autonomy amidst the rapid flow of global information.(Warizal et al., 2023)Research findings demonstrating the significant contribution of digital literacy to analytical and evaluation skills reinforce the idea that formal education needs to prioritize digital literacy mastery as a primary learning objective. Thus, digital literacy serves as a bridge between technological mastery and the achievement of advanced critical thinking skills.(Gunawan, 2023).

The emphasis on digital literacy as a multidimensional competency also emphasizes the importance of balanced integration of technical, cognitive, and social aspects in the learning process. Strong digital literacy enables students not only to master operational skills in using technology but also to interpret, select, and evaluate the information they encounter. Thus, digital literacy serves as a means to train students' critical reasoning and creativity, while strengthening their ability to relate acquired knowledge to real-life contexts. This aligns with the demands of 21st-century education, which emphasizes the development of higher-order thinking competencies.

Digital literacy can also be understood as a foundation for building students' critical awareness in addressing social issues arising from the development of information technology. Digitally literate students will be better prepared to adopt a critical and reflective stance in responding to global issues such as disinformation, digital ethics, and social media phenomena that influence people's ways of thinking. Therefore, making digital literacy a formal learning objective is not only relevant for academic achievement but also strategic for shaping a generation capable of navigating the complexities of the digital world wisely, critically, and responsibly.

The relevance of the results of this study can also be seen from how digital literacy is able to encourage student participation in academic and social discourse in a more reflective manner.(Azsahrah et al., 2023)Students accustomed to using digital literacy evaluatively will be more sensitive in distinguishing between valid and misleading information, while also developing data-driven argumentative skills. This not only impacts the effectiveness of Islamic Religious Education learning but also fosters critical, ethical, and responsible character development in students using digital media.(Falloon, 2020)In other words, digital literacy not only strengthens cognitive aspects but also enriches students' social and moral dimensions in interacting with information in the digital age.

Digital literacy plays a crucial role in fostering a collaborative and adaptive learning culture. When students are able to critically utilize digital technology, they become not only

consumers of information but also active producers of knowledge, contributing to the development of academic discourse. This opens up opportunities for students to engage in more participatory learning practices, such as online discussions, collaborative research, and the sharing of ideas through digital platforms. Thus, digital literacy fosters an inclusive and dynamic learning ecosystem, where critical thinking and analytical skills are continuously honed alongside technological advancements.

Furthermore, a strong digital literacy foundation in students can serve as a crucial tool in facing the challenges of a complex information society. The ability to assess the credibility of sources, filter information, and construct evidence-based arguments better prepares students to contribute constructively to the public sphere, both academically and socially. Within this framework, digital literacy not only supports the achievement of formal educational goals but also plays a strategic role in shaping a generation that is competitive, adaptive, and imbued with integrity amidst global dynamics.

When compared with previous research, the results of this study are in line with the findings(Liu et al., 2024)which shows that digital literacy is closely related to students' critical skills in sorting online information. Research by(Zakir et al., 2025), also reported that good digital skills support students' success in completing information-based academic tasks. However, there are also studies that show different results. For example, the results of a study(Zheng et al., 2025)found that not all aspects of digital literacy contribute significantly to analytical skills, especially when students focus only on the technical aspects of technology use. This difference suggests that digital literacy must be understood holistically, encompassing evaluative and critical aspects, not just operational skills.(Cao et al., 2023).

Thus, a comparison of the results of this study with previous studies shows that digital literacy has a consistent relationship with critical thinking skills, although its contribution may vary depending on the dimensions studied. Supporting research, such as that conducted byZhao et al., (2022) AndZakir et al., (2025), emphasizing that digital literacy provides a strong foundation for students to select and process information effectively in an academic context. Meanwhile, different results fromZheng et al., (2025)reminds us that technical mastery alone is not enough to improve analytical skills. This means that digital literacy cannot be reduced to the ability to use devices or applications, but must be understood as a broader and more complex competency.

The findings of this study further emphasize the urgency of a holistic approach to digital literacy development. Evaluative, critical, and reflective aspects must be integrated with technical skills for digital literacy to truly contribute to improving students' higher-order thinking skills.(Shobach & Arifin, 2025)The practical implication is the need for learning designs that not only introduce students to the use of technology, but also equip them with critical strategies for assessing the credibility of information, constructing data-based arguments, and linking analysis results to social and academic contexts.(Purnama & Rasyid, 2025)With this approach, digital literacy can function optimally as a means of developing a generation that is information-savvy, critical, and competitive in the digital age.

This article's scientific contribution lies in strengthening the argument that digital literacy can be used as a key indicator in measuring the quality of technology-based learning, particularly in high schools. This research enriches the literature by placing the context of religious education as a focus of analysis, a topic that has been relatively rarely explored in digital literacy discourse. This finding is relevant to the findings.(Yilmaz et al., 2025)which emphasizes the importance of adapting digital literacy across various subjects to improve student learning outcomes. Thus, this article not only contributes to the development of digital literacy theory but also expands its application in more specific learning practices.(Chu et al., 2023).

This article's scientific contribution is also evident in its attempt to connect digital literacy with the affective and moral dimensions of Religious Education learning. This provides a new perspective that digital literacy is not solely related to cognitive skills but also holds significant potential in supporting the strengthening of students' character and ethical values.(Musthan & Zur, 2022)In other words, this research opens up a broader discourse on how digital literacy can be used as a strategic instrument to build critical awareness and moral integrity among students. This perspective adds depth to the digital literacy discourse,

which has previously focused more on technical and cognitive aspects.(Zuraidi, 2023).

Furthermore, this article provides a foundation for further research by highlighting the need to develop more integrative learning models. Such models can combine digital literacy approaches with values-based learning contexts, resulting in a more comprehensive learning experience.(Emeliazola & Sesmiarni, 2024). The relevance of this research is not only theoretical but also practical, as it can serve as a reference for teachers and educational policymakers in designing learning strategies that adapt to technological developments. Thus, this article strengthens the position of digital literacy as a crucial indicator in evaluating learning quality, while also enriching educational practices in the digital era.(Rasimin et al., 2024).

However, this study is not without limitations. First, the relatively small sample size (35 students) limits the generalizability of the results. Second, the use of a simple linear regression design is only able to explain the direct relationship between digital literacy and information analysis skills, without considering other mediating or moderating variables such as learning motivation or digital environmental support. These limitations align with the criticisms raised by(Naveed et al., 2023)Digital literacy is a multidimensional construct that cannot be fully measured through a simple quantitative approach. Therefore, the results of this study need to be viewed in a specific context and not generalized broadly.(Harahap et al., 2023).

Based on these findings, several implications can be proposed. First, for education practitioners, the results of this study emphasize the importance of integrating digital literacy into the curriculum, especially in subjects that require information analysis skills, such as Islamic Religious Education. Second, for policymakers, these results provide an empirical basis for formulating programs to improve digital literacy in schools through teacher training and the provision of technological infrastructure. Third, for future researchers, it is recommended to use more complex research designs, such as structural models or mixed methods approaches, to explore other factors that can strengthen the relationship between digital literacy and critical thinking skills. This recommendation aligns with the ideaDamanik & Widodo, (2025)which emphasizes the need for methodological innovation in digital literacy research, and supports the global trend to make digital literacy an essential 21st-century competency in education.

CONCLUSION

This study demonstrates that digital literacy plays a significant role in improving the evaluation and analysis skills of students at SMA Negeri 1 Raha, particularly in the context of Islamic Religious Education learning. The data analysis results confirm that digital literacy functions not only as a technical skill but also as a cognitive competency that influences students' critical thinking abilities. Thus, the research objective of examining the contribution of digital literacy to information analysis and evaluation skills can be answered empirically. The main contribution of this study lies in expanding the theoretical understanding of digital literacy as a crucial variable in the 21st-century learning process. This article adds a new perspective by positioning digital literacy as the foundation for developing higher-order thinking skills in the context of religious education, a domain relatively rarely touched upon in digital literacy discourse. Practically, the results of this study provide a basis for educators to integrate digital literacy skills into learning strategies and serve as a reference for policymakers in designing curricula that are more adaptive to current needs. The implications of this study point to the importance of further research with a broader scope, both through the use of larger samples and more complex methodological approaches such as mixed methods or structural models. Furthermore, educational practices can be improved through the development of digital literacy training programs for teachers and students, as well as the provision of supportive technological infrastructure. With these steps, digital literacy can be optimized as a strategic tool to strengthen students' information analysis and evaluation skills in various learning contexts.

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