



Learning Independence: How Correlation is the Innovation of PAI Learning through the Digital Literacy Program?

Akbar Fauzi¹, Uswatun Khasanah², Heru Juabdin Sada³, Syaiful Bahri⁴, Era Octafiona⁵, Nurul Azizah⁶

^{1,2,3,4,5,6}UIN Raden Intan Lampung, Indonesia

E-mail: akbarfau97@gmail.com, uswatunhasanah6812@gmail.com, herujuabdin@radenintan.ac.id,
saifulbahri@radenintan.ac.id, era@radenintan.ac.id, nurulazizah23@student.uns.ac.id

Article Info	Abstract
Article History Received: 2024-11-11 Revised: 2024-12-23 Published: 2025-01-03 Keywords: <i>Correlation; Digital Literacy; Innovation; Learning Independence; PAI Learning.</i>	This research stems from the importance of understanding the influence of digital literacy on students' learning independence. The primary objective of this study is to analyze the extent to which the implementation of digital literacy correlates with the learning independence of students in Islamic Education (PAI). A quantitative approach with an ex-post facto design method was employed in this study. The research subjects consisted of 81 PAI students at UIN Raden Intan Lampung. Data were collected through questionnaires and analyzed using various statistical tests, including normality tests, homogeneity tests, heteroscedasticity tests, linearity tests, T-tests, determination coefficient tests, and F-tests. The findings indicate a positive relationship between the application of digital literacy and students' learning independence, as evidenced by an F-test value of 0.001 and a T-test value of 0.000. These findings highlight the significant role of digital literacy in enhancing students' learning independence. The positive results underscore the importance of digital literacy as a factor that can strengthen and support the development of learning independence, which is a critical aspect of higher education.
Artikel Info	Abstrak
Sejarah Artikel Diterima: 2024-11-11 Direvisi: 2024-12-23 Dipublikasi: 2025-01-03 Kata kunci: <i>Inovasi; Kemandirian Belajar; Korelasi; Pembelajaran PAI; Literasi Digital.</i>	Penelitian ini berangkat dari pentingnya pemahaman tentang pengaruh literasi digital terhadap kemandirian belajar mahasiswa. Tujuan utama penelitian ini adalah untuk menganalisis sejauh mana penerapan literasi digital berhubungan dengan kemandirian belajar mahasiswa Pendidikan Agama Islam (PAI). Pendekatan yang digunakan dalam penelitian ini adalah kuantitatif dengan metode ex-post facto design. Subjek penelitian ini adalah mahasiswa PAI di UIN Raden Intan Lampung, dengan jumlah sampel sebanyak 81 mahasiswa. Data dikumpulkan melalui angket dan dianalisis menggunakan berbagai uji statistik, antara lain uji normalitas, homogenitas, uji heteroskedastisitas, uji linieritas, uji T, uji koefisien determinasi, dan uji F. Hasil penelitian menunjukkan adanya hubungan positif antara penerapan literasi digital dengan kemandirian belajar mahasiswa, hal ini ditunjukkan dengan nilai uji F 0,001 dan uji T 0,000. Implikasi dari temuan ini menunjukkan bahwa penerapan literasi digital memiliki peran signifikan dalam meningkatkan kemandirian belajar mahasiswa. Temuan positif ini menggarisbawahi pentingnya literasi digital sebagai faktor yang dapat memperkuat dan mendukung perkembangan kemandirian belajar, yang menjadi salah satu aspek penting dalam pendidikan tinggi.

I. INTRODUCTION

Education is the process of acquiring knowledge, skills, values, and attitudes through various forms of learning (Kit et al, 2023). It enables individuals to gain the necessary knowledge and skills to explore the world, build meaningful relationships with others, and contribute to society. Education serves as a vital tool for personal growth and development, social mobility, and economic prosperity. The process of learning independence is regarded as a self-directed effort by students to regulate and maintain their thoughts, emotions, and behaviors to achieve personal goals (Ismail et al., 2024; Patras et al., 2021). This involves engaging in and

sustaining cognitive, emotional, and behavioral aspects that systematically support goal attainment (Fadillah et al., 2022; Ntobuo et al., 2023; Septari et al., 2020).

Learning independence refers to an individual's ability and attitude to take responsibility for their own learning process (Sakdiah & Maryam Jamilah, 2022). It includes the ability to manage time, allocate resources, and take initiative in achieving learning goals without being entirely dependent on guidance or supervision from others (Aprila et al., 2022; Astuti & Rozikin, 2024; Lisnawati et al., 2023; Sumbawati et al., 2020). Education is viewed as a process by which younger generations are

socialized. It involves continuous efforts to introduce children to perspectives, feelings, and actions they would not naturally grasp on their own (Verma & Verma, 2023). This highlights the importance of environmental influences and formal education in shaping individuals from younger generations (Karmini, 2022; Scheel et al., 2022).

Based on preliminary research through interviews with Mrs. Zahra Rahmatika, M.Pd.I, a lecturer of the High School/Islamic High School Fiqh Teaching Materials course at UIN Raden Intan Lampung, insights were gathered regarding digital literacy. It was found that students have been utilizing digital literacy; however, several challenges remain in its implementation, including: (1) limited access, (2) lack of technological knowledge, (3) digital divide, (4) lack of awareness regarding the wise use of digital literacy, and (5) low interest in learning. These issues arise as students primarily rely on in-class learning. On the other hand, the learning independence of PAI students at UIN Raden Intan Lampung was reported to be relatively good.

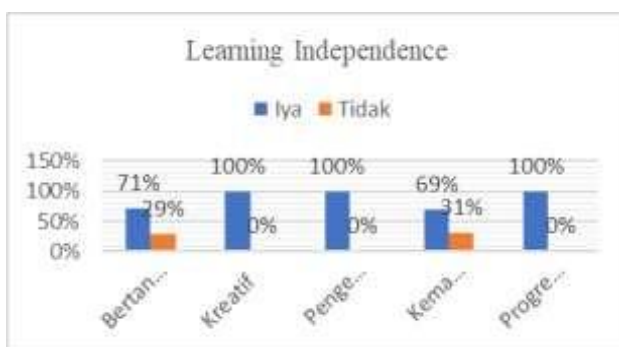


Figure 1: Preliminary Research Results of the Learning Independence Questionnaire

Based on Figure 1, it is evident that the responsibility indicator has a high percentage of 71%, indicating that students can make independent decisions and avoid procrastination in completing assignments. The creativity indicator shows an exceptionally high percentage of 100%, suggesting that students enjoy exploring new ideas and possess a high level of creativity. Similarly, the self-control indicator also scored 100%, demonstrating that students are capable of thinking before acting. The self-confidence indicator recorded a percentage of 69%, reflecting students' confidence in their abilities. Lastly, the progressive indicator reached a significant 100%, indicating that students are resilient and do not give up easily when facing challenges.

Digital literacy is considered a challenging aspect of integrating technology into coursework. It is defined in the literature as the abilities and skills necessary to navigate a complex and fragmented information ecosystem (Amnie et al., 2021; Furqan & Rosa, 2023; Holm, 2024; Sakdiah & Maryam Jamilah, 2022; Tinmaz et al., 2022). Higher levels of skills in operating computer software and hardware positively impact students' learning outcomes (Getenet et al., 2024; Tinmaz et al., 2022; Yustika & Iswati, 2020). Digital literacy can be understood as a comprehensive concept encompassing various skills, particularly computer literacy and information literacy, alongside other types such as IT literacy, network literacy, and electronic literacy (Ayu Arsari, 2022; Pangrazio et al., 2020; Thelma et al., 2024). Implementing digital literacy within intelligent learning environments facilitates active learning experiences by leveraging advanced technological tools to enhance educational engagement and effectiveness (Gambo & Shakir, 2021; Getenet et al., 2024; Mursidi et al., 2022).

This research is supported by previous studies that explore the correlation between digital literacy and learning independence, such as those conducted by Tyas (2024), Muh Nurfauzan Hanif Debitama (2024), Goutama (2023), Aswan (2023), dan Wahyuni (2022). These studies highlight the significant positive impact of digital literacy on students' learning independence. Digital literacy skills empower students to become more self-reliant in learning by increasing their motivation to seek learning resources through technology. This allows them to complete educational tasks independently without relying on others. While many studies have examined the correlation between digital literacy and learning independence, there is still limited research that specifically investigates its impact on learning independence within the context of high school/Islamic high school fiqh teaching materials. Most studies focus on younger students and lack in-depth exploration of how digital literacy correlates with university students' learning independence.

Research on the relationship between digital literacy and the learning independence of Islamic Education (PAI) students in fiqh courses is crucial in the current educational context. With the rapid advancement of technology, students must master digital literacy to access information and learning materials more efficiently. Digital literacy enables PAI students to search for

references, participate in online discussions, and utilize various diverse learning resources. This research aims to uncover the extent to which digital literacy correlates with students' independent learning practices and academic achievements. Additionally, the findings could provide valuable input for curriculum development and the creation of more effective teaching methods that incorporate technology into the learning process. This is essential to ensure that PAI students can easily access relevant and up-to-date fiqh materials. In the long term, this research is expected to contribute to shaping a generation of students who are better prepared to face technological advancements and more capable of applying fiqh knowledge in daily life.

II. METHOD

This study employs a correlational approach using an ex-post facto design (Stocks, 2016). The ex-post facto design was chosen because the research deals with variables that have already occurred and does not require any manipulation or treatment of the variables under investigation. The dependent variable in this study is the learning independence of PAI students. The ex-post facto design is particularly suitable for investigating the correlation between digital literacy and learning independence (S. Permadi et al., 2020). The research aims to delve deeper into uncovering the relationship between digital literacy and learning independence. The correlation is analyzed to understand and evaluate the statistical relationship between these two variables. The research instrument used is a non-test instrument in the form of a questionnaire containing 24 Likert-scale items, distributed via Google Forms. The questionnaire underwent content and construct validation. The respondents of the study were students enrolled in the high school/Islamic high school fiqh teaching materials course.

The PAI student population consisted of 13 classes, with three classes used as a trial sample and the remaining classes used for the main study. During the trial phase, the validity and reliability of the instrument were tested to determine which items were valid. These tests were conducted using SPSS 25, with validity decisions based on the R-table value or a significance level of 0.05, and reliability assessed through Cronbach's alpha, with a threshold of 0.6. The trial results revealed that 11 out of 16 items for digital literacy and 13 out of 15 items

for learning independence were valid. The questionnaire was then distributed among the trial classes, with a total population of 414 students. Using the Slovin formula, the sample size was calculated, resulting in a final sample of 81 respondents. This study employed simple random sampling as the data collection method. Simple random sampling was selected due to the homogeneous nature of the population, where participants were randomly chosen to participate in the research (Noor & Tajik, 2022). The statistical tests utilized in this study included the Normality Test, Homogeneity Test, Heteroscedasticity Test, Linearity Test, T-Test, Determination Coefficient Test, and F-Test.

III. RESULT AND DISCUSSION

A. Result

This research was conducted at UIN Raden Intan Lampung with the aim of examining the extent to which digital literacy correlates with students' learning independence in the high school/Islamic high school fiqh teaching materials course. Prior to distributing the questionnaire to a sample of 414 students, the research instruments—digital literacy and learning independence questionnaires—were tested on 64 students to ensure their validity and reliability. The indicators used to measure digital literacy include: Internet searching, Hypertextual navigation, Content evaluation, Knowledge assembly. The indicators for measuring learning independence are: Responsible freedom, Progressiveness or perseverance, Initiative or creativity, Self-control, Self-confidence.

After the testing and refinement process, the questionnaire was distributed to all respondents. The data analysis results obtained from the questionnaire are as follows.

1. Normality Test

The normality test was conducted to determine whether the data obtained from the research variables conform to a normal distribution (Quraissy, 2022). The data is considered to follow a normal distribution if the significance value (sig.) > 0.05. Ensuring data normality is crucial, as data that adhere to a normal distribution indicate that the sample accurately represents the population. (Yuhana et al., 2021).

Tests of Normality						
VAR00001	Statistic	Kolmogorov-Smirnov ^a			Shapiro-Wilk	
		Z	Sig.	Statistic	df	Sig.
VAR00001	1.00	.131	.81	.975	81	.008
	2.00	.131	.81	.975	81	.118

a. Lilliefors Significance Correction

Figure 1.

Based on the results of the normality test conducted using the Shapiro-Wilk test, which is appropriate for samples below 100 respondents, the findings are as follows: The digital literacy variable does not follow a normal distribution, with a significance value (Sig.) of 0.008 (Sig. < 0.05). The learning independence variable follows a normal distribution, with a significance value (Sig.) of 0.118 (Sig. > 0.05). Given the non-normal distribution of the digital literacy variable, a non-parametric analysis was conducted using the Mann-Whitney Test as follows.

Test Statistics ^a	
	VAR00001
Mann-Whitney U	671.000
Wilcoxon W	3992.000
Z	-8.766
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: VAR00002

Figure 2.

Based on the results in Table 2, the Mann-Whitney Test yielded a value of 671.000 with a significance value (Sig.) of 0.000. This indicates that the significance value is < 0.05, suggesting that there is a statistically significant difference between the groups analyzed in the test. This finding implies that digital literacy may have a significant correlation or impact on the observed variable (in this case, learning independence), warranting further interpretation and analysis to understand the relationship in more depth.

2. Homogeneity Test

The homogeneity test is conducted to determine whether the variances of the data distributions are equal (homogeneous) or unequal (non-homogeneous). Data is considered homogeneous if the significance value (Sig.) > 0.05. Below is the description of the homogeneity test results for the digital literacy and learning independence variables among PAI students.

Test of Homogeneity of Variances				
VAR00001	Levene Statistic			
	df1	df2	Sig.	
	Based on Mean	1	188	.311
	Based on Median	1	188	.242
	Based on Median and with adjusted df	1	151.352	.242
	Based on trimmed mean	1	188	.199

Figure 3.

3. Simultaneous Sera Hypothesis Test (F Test)

The simultaneous hypothesis test, commonly referred to as the F-test, is used in regression analysis to determine whether all the independent variables collectively have a significant influence on the dependent variable. In other words, this test aims to assess whether the constructed regression model is effective in explaining the relationship between the variables.

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	F
1	Regression	158.828	1	158.828	12.034
	Residual	1051.827	79	13.314	
	Total	1211.654	80		

a. Dependent Variable: KemandirianBelajar

b. Predictors: (Constant), LiterasiDigital

Figure 4.

Since the significance value (Sig.) of 0.001 is less than 0.05, it indicates that digital literacy has a significant impact on independence in learning. This demonstrates that the application of digital literacy can significantly enhance students' learning independence.

4. Simple Independent T Test

The T-Test aims to determine whether the independent variable has an influence on the dependent variable, while the correlation test is used to assess the relationship between the two variables.

Coefficients ^a							
Model	Unstandardized Coefficients			t	Sig.	Zero-order	
	B	Std. Error	Beta			Partial	Part
1	(Constant)	28.680	6.186	4.635	.000		
	LiterasiDigital	.441	.127	3.410	.001	.363	.363

a. Dependent Variable: KemandirianBelajar

Figure 5.

Based on the data in Figure 7, the significance value (Sig.) is 0.000, which is smaller than the probability threshold of 0.05. Therefore, it can be concluded that H_0 is rejected and H_a is accepted, indicating that digital literacy (X) has an influence on learning independence (Y).

5. Heteroscedasticity test

The heteroscedasticity test is a statistical test used to examine whether there is inequality in the variance of residuals (errors) in a regression model. Simply put, this test aims to determine whether the variance of the error terms is constant (homoscedasticity) or varies across observations (heteroscedasticity).

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
1	(Constant)	1.727		.701	.485
	LiterasiDigital	.013	.038	.352	.802

a. Dependent Variable: ABS_Ras

Figure 6.

Based on the output table for the Heteroscedasticity Test, the significance value (Sig.) for the variables digital literacy and learning independence is 0.485. Since the significance value $0.485 > 0.05$, following the decision-making criteria for heteroscedasticity testing, it can be concluded that the variance of the residuals for digital literacy and learning independence is constant (homoscedasticity) and does not vary across observations.

6. Linearity test

The linearity test is a statistical procedure used to determine whether the relationship between two variables (independent and dependent variables) is linear. In simpler terms, this test evaluates whether the relationship between the variables can be represented by a straight line. If the significance value (Sig.) > 0.05 , the relationship between the two variables is linear.

ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Regression	300.121	1	300.121	2.000	.163
Residual	906.819	1	906.819	12.000	.001
Total	1206.940	2			

Figure 7.

Based on the significance value (Sig.) from the output, the Deviation from Linearity significance value is 0.103, which is greater than 0.05. Since the significance value $0.103 > 0.05$, it can be concluded that there is a significant linear relationship between the variables digital literacy (X) and learning independence (Y).

7. Coefficient determination test

The coefficient of determination (R-squared) is a statistical test used in regression analysis to measure the proportion of variance or changes in the dependent variable (outcome variable) that can be explained by the independent variable (predictor variable) in a regression model.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.363 ^a	.132	.121	3.64887

a. Predictors: (Constant), LiterasiDigital

b. Dependent Variable: KemandirianBelajar

Figure 8.

Based on the SPSS output table "Model Summary," the value of the coefficient of determination (R-squared) is 0.132. This value is obtained by squaring the correlation coefficient (R), which is $0.363 \times 0.363 = 0.132$. The coefficient of determination (R-squared) value of 0.132 indicates that 13.2% of the variance in the dependent variable, Spiritual Quotient (Y), is influenced by the independent variable, Religious Moderation (X). Meanwhile, the remaining 86.8% ($100\% - 13.2\%$) is influenced by other variables outside this regression model or variables not included in this study.

B. Discussion

Based on the data analysis results regarding the variables of digital literacy and learning independence among Islamic Education (PAI) students, this study identifies digital literacy as a significant contributing factor to positive outcomes. These findings were derived from detailed responses provided by respondents through distributed questionnaires. Through statistical data processing, the study successfully demonstrated that digital literacy has a significant impact on the learning independence of PAI students at UIN Raden Intan Lampung. Further statistical analysis revealed that digital literacy has a positive impact on students' learning independence. The conducted T-test produced a significance value of 0.363, which is smaller than 0.05. This indicates a significant relationship between the two variables, namely digital literacy and

learning independence. These findings confirm the importance of digital literacy in enhancing students' ability to learn independently.

Moreover, the study results showed that 13.4% of students' learning independence can be explained by digital literacy, based on the obtained coefficient of determination (R^2) value. This implies that the majority of students' learning independence is influenced by their level of digital literacy, while the remaining portion is affected by other factors not examined in this study. These findings underscore the critical role of digital literacy in fostering more autonomous learning processes among students.

The research findings indicate a positive relationship between the use of digital literacy and students' learning independence. This study aligns with previous research, which found that digital literacy can help students become more independent in their learning processes (Banyu Biru et al., 2020; Khasanah & Yushita, 2023; Muh Nurfauzan Hanif Debitama et al., 2024; Nisa & Fitrayati, 2022; Siahaan, 2024). Students with strong digital literacy skills find it easier to access various learning resources independently, such as searching for references and participating in online discussions (Lina Novita, Elly Sukmanasa, 2022; Putra & Budiningsih, 2023; Sakdiah & Maryam Jamilah, 2022).

However, despite the positive impact of digital literacy on learning independence, several challenges remain. Some students face difficulties accessing technology due to limited resources or lack of training. Additionally, insufficient knowledge about effective technology use and the digital divide among students pose significant barriers that need to be addressed. To maximize the benefits of digital literacy, greater efforts are needed to overcome these challenges. This includes enhancing digital literacy among students through specialized training or by integrating digital literacy materials into the curriculum. These efforts aim to raise students' awareness of the importance of wise digital literacy use, supporting their independence in the learning process (Mulyadi & Afriansyah, 2022).

In developing digital literacy, several obstacles have been identified that hinder its optimal utilization. Some students struggle with using technology due to inadequate training or lack of access to appropriate

devices. Furthermore, a lack of awareness about the prudent use of digital literacy exacerbates the issue. Therefore, it is essential to make further efforts to enhance digital literacy among students, either through dedicated training programs or by embedding digital literacy content within the curriculum.

The utilization of technology in Islamic Education learning allows broader access to learning resources such as classical texts, Quranic exegeses, Hadith, and other Islamic literature (Zulkifli et al., 2024). With the help of digital media, students can access these materials easily and quickly, even remotely. Furthermore, technology facilitates more dynamic interactions between lecturers and students through online platforms, discussion forums, or even game-based learning methods that are both entertaining and educational (Sugeng et al., 2024).

Although many studies examine the correlation between digital literacy and learning independence, there remains a gap in understanding its specific impact on learning independence in the subject of teaching fiqh in high school (SMA/MA) among university students. Most research focuses on school-level learners, with limited exploration into how digital literacy correlates with learning independence at the university level. Therefore, this study aims to bridge this gap by investigating how digital literacy correlates with the learning independence of Islamic Education students (PAI) in the course Teaching Materials for Fiqh in SMA/MA.

The findings of this study have significant implications for future research. This research opens avenues for deeper exploration into the factors influencing digital literacy and learning independence, such as the role of teaching in enhancing digital literacy and individual student factors like motivation and technological proficiency. Further research could also explore how digital literacy development can be integrated into higher education curricula to enhance students' learning independence, particularly in programs emphasizing self-directed learning, such as Islamic Education. In addition, more in-depth research could identify more effective strategies for optimizing the use of technology in higher education learning. Thus, this study not only highlights the importance of digital literacy in fostering learning

independence but also provides insights for improving educational practices in the future.

IV. CONCLUSION AND SUGGESTION

A. Conclusion

Based on the analysis of data regarding the variables of digital literacy and learning independence among Islamic Education (PAI) students, this study reveals that digital literacy significantly influences students' learning independence. These findings were derived from survey results demonstrating a positive correlation between digital literacy skills and students' ability to learn independently. This research aligns with previous studies affirming that digital literacy supports students in accessing learning resources, such as searching for references and engaging in online discussions, which in turn enhances their learning autonomy.

However, despite the positive impact of digital literacy, students face several challenges. Some students struggle to use technology, primarily due to limited access to adequate devices or a lack of technological knowledge. Additionally, awareness of the importance of utilizing digital literacy wisely remains low among students. Based on these findings, steps must be taken to improve digital literacy, such as organizing specialized training or integrating digital literacy materials into higher education curricula to ensure optimal utilization of technology.

The findings of this study also have important implications for future research. This research opens avenues to explore other factors influencing digital literacy and students' learning independence, such as the role of teaching in enhancing digital literacy and individual factors like motivation and technological proficiency. Further studies can investigate effective methods for integrating digital literacy into higher education curricula and identify strategies to optimize the use of technology in learning. Thus, the results of this study provide insights that can enhance the quality of future learning, particularly in supporting student independence in self-directed learning programs.

B. Suggestion

Future research should focus on exploring the specific impact of digital literacy on independent learning in the context of fiqh courses for SMA/MA levels, as existing studies often overlook this area and emphasize

younger students or general learning contexts. Integrating digital literacy into the PAI curriculum is crucial to equipping students with skills to effectively navigate online resources, participate in virtual discussions, and utilize diverse learning platforms.

Educational institutions should adapt teaching methods to leverage digital tools, fostering accessible and engaging learning environments while addressing challenges like the digital divide through equitable resource allocation and targeted training. Additionally, developing context-specific digital learning materials for fiqh studies and examining the long-term effects of digital literacy on students' academic performance and practical application of fiqh knowledge can provide deeper insights. These steps will not only enhance independent learning but also prepare students to adapt to technological advancements and better integrate Islamic teachings into their daily lives.

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