JIKAP
Jurnal Informasi dan Komunikasi Administrasi Perkantoran
Vol. 9, No.6, Tahun 2025
Hlm. 623

The influence of digital literacy and self-efficacy on students' critical thinking abilities

Yashinta Ekafitri Maharani*, Susantiningrum Susantiningrum

Office Administration Education, Universitas Sebelas Maret, Surakarta, Indonesia

Email: yashintaem@student.uns.ac.id

Abstrak

Kemampuan berpikir kritis merupakan keterampilan penting abad ke-21, namun pada praktiknya siswa SMK masih cenderung rendah karena lebih fokus menghafal materi daripada menganalisis, mengevaluasi, atau memecahkan masalah. Penelitian ini bertujuan untuk menguji pengaruh literasi digital dan self efficacy terhadap kemampuan berpikir kritis siswa kelas X Program Keahlian Manajemen Perkantoran dan Layanan Bisnis (MPLB) SMK Negeri 6 Surakarta, baik secara simultan maupun parsial. Penelitian ini menggunakan pendekatan kuantitatif kausalitas dengan desain korelasional. Sampel berjumlah 85 siswa dari populasi 108 siswa dengan teknik proportional random sampling. Data dikumpulkan melalui angket dan dianalisis dengan regresi linier berganda menggunakan IBM SPSS versi 26. Hasil penelitian menunjukkan bahwa: (1) literasi digital berpengaruh positif dan signifikan terhadap kemampuan berpikir kritis (t_{hitung} 4,708 > t_{tabel} 1,663; sig. = 0,000 < 0,05); (2) self efficacy juga berpengaruh positif dan signifikan (t_{hitung} 3,402 > t_{tabel} 1,66; sig. = 0,001 < 0,05); (3) secara simultan, keduanya berpengaruh signifikan terhadap kemampuan berpikir kritis (F_{hitung} 38,847 > F_{tabel} 3,11; sig. = 0,000 < 0,05). Persamaan regresinya yakni $\hat{Y}$= 20,423+0,530 X1+0,383 X2. Nilai koefisien determinasi (R^2) sebesar 0,487. Sumbangan efektif literasi digital sebesar 29,26% dan self efficacy sebesar 19,41%. Sumbangan relatif literasi digital sebesar 60,07% dan self efficacy sebesar 39,86%. Temuan ini menunjukkan perlunya sekolah meningkatkan fasilitas literasi digital, membiasakan pembelajaran berbasis analisis, serta menumbuhkan kepercayaan diri siswa melalui pendampingan akademik.

Kata kunci : berpikir tingkat tinggi; kepercayaan diri; kuantitatif; literasi teknologi

Abstract

Critical thinking ability is an essential 21st-century skill; however, in practice, vocational high school students still tend to demonstrate low levels, as they focus more on memorizing material rather than analyzing, evaluating, or solving problems. This study aims to examine the influence of digital literacy and self-efficacy on the critical thinking ability of Grade X students in the Office Management and Business Services (MPLB) Program at SMK Negeri 6 Surakarta, both simultaneously and partially. This study uses a causality quantitative approach with a correlational design. The sample

* *Corresponding author*

Citation in APA style: Maharani, Y.E., & Susantiningrum, S. (2025). The influence of digital literacy and self-efficacy on students' critical thinking abilities. *Jurnal Informasi dan Komunikasi Administrasi Perkantoran, 9*(6), 623-633. https://dx.doi.org/10.20961/jikap.v9i6.104980

comprised 85 students from a population of 108 students using proportional random sampling technique. Data were collected through questionnaires and analyzed using multiple linear regression with IBM SPSS version 26. The results showed that: (1) digital literacy has a positive and significant effect on critical thinking skills ($t = 4.708$, $p < .001$); (2) self-efficacy also has a positive and significant effect ($t = 3.402$, $p = .001$); (3) simultaneously, both have a significant effect on critical thinking skills ($F = 38.847$, $p < .001$). The regression equation is $\hat{Y} = 20.423 + 0.530X_1 + 0.383X_2$. The coefficient of determination ($R^2 = .487$) means that digital literacy and self-efficacy influence critical thinking skills by 48.7%. The effective contribution of digital literacy is 29.26% and self-efficacy is 19.41%. The relative contribution of digital literacy is 60.07% and self-efficacy is 39.86%. These findings indicate the necessity for schools to enhance digital literacy facilities, promote analysis-based learning, and foster students' self-confidence through academic mentoring.

Keywords: cognitive skills; self-confidence; technology literacy; 21st-century learning

Received June 21, 2025; Revised August 25, 2025; Accepted September 08, 2025; Published Online November 02, 2025

https://dx.doi.org/10.20961/jikap.v9i6.104980

Introduction

Education serves as the primary foundation for developing high-quality generations capable of adapting to evolving circumstances and confronting global challenges. The competencies required in the 21st century encompass critical thinking, communication, collaboration, and creativity (4C), representing fundamental skills or life competencies that students must possess in the Industry 4.0 era (Hamdani et al., 2023). Among these four elements, critical thinking constitutes one of the core competencies students must develop. Students' critical thinking ability represents a conscious cognitive process involving careful observation, comprehension, and thorough analysis of concepts within learning contexts (Arif et al., 2022). Critical thinking ability refers to higher-order thinking skills involving systematic processes to analyze, evaluate, and synthesize information from multiple sources objectively and consistently.

The importance of critical thinking is further emphasized by Ariadila et al. (2023), who asserted that critical thinking skills are crucial in education because they help students enhance learning capabilities, solve problems, and make more informed decisions. In contemporary education systems, frameworks must support the development of skills, knowledge, and attitudes necessary for success in modern education. Success indicators include students' critical thinking abilities and problem-solving capabilities (Martinez & Tinoca, 2022). According to Glaser's perspective, critical thinking represents an individual's capacity to reason deeply about problem resolution by analyzing issues to seek knowledge or truth based on factual evidence (Fauzan et al., 2021). Consequently, critical thinking constitutes the primary foundation supporting student success in complex modern educational contexts.

Data from the 2022 Programme for International Student Assessment (PISA) indicated that Indonesia ranked 69th among 81 countries, with average scores of 359 for reading, 366 for mathematics, and 383 for science. Based on Computer-Based National Assessment (ANBK) evaluation results, many vocational school students demonstrated limitations in higher-order thinking abilities. Vocational school students' average scores on literacy indicators, encompassing skills in analyzing, evaluating, and reflecting on information, reached only 55 on a 100-point scale, below the minimum competency standard (SKM) of 70 established by the Ministry of Education, Culture, Research, and Technology.

Problems related to students' critical thinking abilities frequently emerge in school learning implementation, including at vocational schools. This is particularly evident among Grade X MPLB students at SMK Negeri 6 Surakarta. A preliminary study through perception questionnaire distribution was conducted with 24 students, revealing that students' critical thinking abilities in learning remained low. This was reflected in students' limited capacity to analyze, evaluate, and propose solutions to problems presented during learning. Many students focused solely on memorizing material without attempting to comprehend concepts deeply. Furthermore, most students tended to be passive in providing responses or asking questions during learning. Selection of Grade X as the research focus was based on the consideration that students at this level remain in the initial stages of vocational learning, making it essential to develop critical thinking abilities early as a foundation for subsequent educational levels.

Based on preliminary study results with 24 students, analytical ability data revealed that 25% of students were unable to quickly comprehend main problems in situations, while 62.5% demonstrated limited capability. Regarding problem-solving ability, 25% of students were unable to provide logical solutions, with 66.7% indicating limited capability. For the ability to distinguish facts from opinions, 29.2% of students were unable to differentiate facts from opinions when analyzing information, while 54.2% showed limited capability. Evaluation ability data indicated that 25% of students were unable to consider various perspectives before making decisions, with 54.2% demonstrating limited capability. Additionally, for conclusion-drawing ability, 37.5% of students were unable to draw accurate conclusions based on available data, while 50% showed limited capability.

Various factors can enhance students' critical thinking abilities, one being digital literacy. Digital literacy is considered important because it provides technical and cognitive skills enabling students to filter valid information, analyze data, and integrate knowledge from multiple sources. Digital literacy was selected because technological developments have made it a primary skill directly influencing students' abilities to filter, analyze, and process information as the foundation for critical thinking. The importance of digital literacy in supporting critical thinking abilities is reinforced by Wulandari et al. (2023), who stated that with rapidly developing digitalization across various life aspects, digital literacy has become one of the essential external factors in enhancing students' critical thinking abilities. Furthermore, low digital literacy can also hinder critical thinking ability development. This is supported by Wendratama et al. (2020), who stated that low critical thinking results from low digital literacy participation among communities in using digital media.

To enhance an individual's capability in finding information suited to needs and formulating effective strategies, individuals must possess digital literacy. According to Naufal (2021), three factors influence digital literacy: (1) functional skills; (2) communication and interaction; and (3) critical thinking. Four indicators articulated by Paul Gilster (1997, as cited in Fauzi & Usmeldi, 2022) include: (1) Internet searching, encompassing the ability to conduct information searches on the internet using search engines; (2) hypertextual navigation, including knowledge about hypertext and hyperlinks and their functions; (3) content evaluation, encompassing the ability to distinguish between display and information content, specifically users' perceptions in understanding webpage displays; and (4) knowledge assembly, encompassing the ability to construct knowledge and build information collections obtained from various sources.

Meanwhile, self-efficacy can also influence students' critical thinking abilities. Self-efficacy was selected because self-confidence plays an important role in determining students' motivation, persistence, and success in confronting academic challenges. Individuals with low self-efficacy tend to exhibit avoidance attitudes toward tasks and demonstrate lower engagement in work (Fida et al., 2025). Conversely, high self-efficacy plays an important role in enhancing critical thinking abilities, particularly in analyzing information, making logical decisions, and solving problems independently (Sariningsih & Purwasih, 2017). This indicates that self-efficacy not only influences students' confidence in confronting intellectual challenges but also maintains a close relationship with critical thinking abilities.

Self-efficacy is influenced by various interrelated factors. According to Bandura (1997), self-efficacy is influenced by four factors: (1) mastery experience; (2) vicarious learning from observing others; (3) verbal persuasion; and (4) physiological and emotional conditions. The self-efficacy

indicators employed in this study, according to Bandura (1997), include: (1) magnitude; (2) strength; and (3) generality.

According to Ariadila et al. (2023), individuals possessing strong critical thinking abilities tend to be more capable of making informed decisions, identifying problems accurately, and solving problems more effectively. The critical thinking ability indicators employed in this study, according to Ennis (2011), include: (1) elementary clarification; (2) basic support for decisions; (3) inference; (4) advanced clarification; and (5) supposition and integration.

Students lacking adequate digital literacy will experience difficulty accessing, understanding, and evaluating information effectively, preventing them from utilizing technology to support learning processes. Additionally, low self-efficacy can cause students to lack confidence in confronting learning challenges and applying critical thinking skills. Consequently, students' critical thinking abilities remain low, impacting their limited capacity to analyze problems, make logical decisions, and solve problems effectively. Therefore, conducting further research regarding the influence of digital literacy and self-efficacy on students' critical thinking abilities is essential to identify appropriate solutions for enhancing both factors and supporting students' critical thinking ability development.

Based on the problem background, this study aimed to address several key questions: (1) Does digital literacy influence the critical thinking abilities of Grade X MPLB students at SMK Negeri 6 Surakarta?; (2) Does self-efficacy influence the critical thinking abilities of Grade X MPLB students at SMK Negeri 6 Surakarta?; and (3) Do digital literacy and self-efficacy collectively influence the critical thinking abilities of Grade X MPLB students at SMK Negeri 6 Surakarta?

Metode Penelitian

The method used in this study is causality with a quantitative approach. The independent variables in this study are digital literacy and self-efficacy, while the dependent variable of this study is critical thinking ability. The population of this study is all Grade X students in the Office Management and Business Services (MPLB) Skills Program at SMK Negeri 6 Surakarta for the 2024/2025 Academic Year, divided into 3 classes with a total of 108 students.

The sampling technique used is probability sampling with proportional random sampling type. Probability sampling is a sampling method that provides equal opportunities and chances for each member or element in the population to be selected as a sample. Determination of the sample size refers to the Slovin formula.

$$ni = \frac{N\mathrm{i}}{N} x\, n$$

The following are the sample calculation results obtained for each class, yielding a total sample of 85 students.

$$n1 = \frac{36}{108}\, x\, 85 = 28$$

$$n2 = \frac{36}{108}\, x\, 85 = 28$$

$$n3 = \frac{36}{108}\, x\, 85 = 29$$

This study uses closed-ended questionnaires using a Likert scale of 1-5, where answers are already available so respondents only need to choose the options provided. The selection of the Likert scale to measure critical thinking abilities through respondent perceptions is because this approach allows assessment of critical thinking dispositions such as beliefs, attitudes, and reflective habits that cannot be measured directly through written tests or essays. Data collection time was carried out in April 2025. Questionnaire distribution was carried out directly in each class under researcher supervision. Before filling out, respondents were given a brief explanation of the purpose and procedure for filling out the questionnaire.

Data analysis in this study uses SPSS Statistics version 26 software. The research procedure begins with data tabulation by entering the data obtained into tables to facilitate data processing. Then continued with data conversion and conducting prerequisite analysis tests which include normality, linearity, multicollinearity, and heteroscedasticity tests. Next, hypothesis testing is conducted consisting of partial significance test (t-test), simultaneous significance test (F-test), multiple linear regression analysis, coefficient of determination analysis (R^2), and calculation of effective and relative contributions.

In conducting research, data plays an important role in determining results and testing the truth of the proposed hypothesis. Therefore, the use of appropriate research instruments is very important, which is characterized by meeting the criteria of validity and reliability. In this study, validity and reliability tests were conducted through instrument trials on 23 Grade X Office Management and Business Services (MPLB) students at SMK Negeri 6, who are the remaining population in this study. From the validity test on the three variables, the following results were obtained: for the critical thinking ability variable, 16 statements were valid and 2 were not valid; for the digital literacy variable, 13 statements were valid and 2 were not valid; and for the self-efficacy variable, all 10 statements were valid. Reliability tests were then conducted on valid statements in each variable, producing the following reliability values: .937 for critical thinking ability (> .60), .926 for digital literacy, and .839 for self-efficacy (> .60). Based on these results, it can be concluded that the research instruments used are valid and reliable.

Results and Discussion

Research Results

Based on descriptive data analysis of the critical thinking ability variable from 85 respondents with 16 statement items measured using a Likert scale of 1-5, a maximum score of 69, minimum score of 23, M = 58.11 was obtained, showing that students' critical thinking abilities are in the medium-high category; Mdn = 58.00 shows that the level of students' critical thinking abilities is in the middle position in the data distribution with most students having scores in quite good ranges; mode = 60 is higher than the median and mean, which means there are some students with low scores that lower the average even though the scores are high; SD = 7.475; and score range = 46 indicates a large variation among students, most students are quite good but some are very low (score 23). The total score from the critical thinking ability variable based on the data obtained is 4,939. From these results, it can be known that critical thinking abilities can still be improved, especially for students with low scores. Meanwhile, the digital literacy variable with 13 statement items obtained a maximum score of 59, minimum score of 17, M = 45.94 approaching the maximum value of 59, showing that students' digital literacy levels are relatively high but not evenly distributed; Mdn = 46.00 shows that most students' digital literacy abilities are at medium to upper levels; mode = 43 approaches the mean and median, which means the data distribution is quite normal or shows that the majority of students have digital literacy at medium to upper ranges; SD = 6.411; and score range = 42. The total overall score from this variable is 3,905. From these results, it can be known that the level of digital literacy is already quite good, but can still be improved, especially for students who have scores far below average. Next, the self-efficacy variable with 10 statement items obtained a maximum score of 49, minimum score of 12, M = 34.78 almost the same as the median, showing a symmetrical data distribution so there is no group of students that dominates too high or too low; Mdn = 34.00 means most students are at medium self-efficacy levels; mode = 34 has the same value as the median, which means the majority of students are at medium levels; SD = 6.417; and score range = 37 shows significant variation among students. The total overall score from this variable is 2,956. From these results, it can be known that students' self-efficacy levels are not yet too high and can be a focus of development.

The prerequisite tests used in this study include normality, linearity, multicollinearity, and heteroscedasticity tests. The normality test results show that the Asymp. Sig (2-tailed) value of .20 > .05 indicates that the data are normally distributed. The linearity test between digital literacy (X_1) and critical thinking ability (Y) shows a Deviation from Linearity of .081 > .05, so the relationship

between the digital literacy variable and the critical thinking ability variable can be said to be linear. Likewise, the linearity test of self-efficacy (X_2) on critical thinking ability (Y) shows a Deviation from Linearity value of .080 > .05, so it can be concluded that there is a linear relationship between self-efficacy and critical thinking ability.

The multicollinearity test results show that the Tolerance value is .671 > .10 and the VIF value is 1.49 < 10. Therefore, it can be concluded that there is no multicollinearity between independent variables. The heteroscedasticity test was conducted through Spearman-rho correlation, with significance values of .500 for the digital literacy variable and .601 for self-efficacy. These values are > .05, indicating no symptoms of heteroscedasticity in this study.

Table 1
t-Test Results

Model	t-Test	Sig.
(Constant)	4.660	.000
Digital Literacy	4.708	.000
Self-Efficacy	3.402	.001

Source: Data processed by researchers (2025)

Based on Table 1 above, the t-test was conducted to determine the partial influence of independent variables on the dependent variable. It is known that the significance value for digital literacy (X_1) is p < .001 and t = 4.708, which is greater than the critical t value of 1.663 at α = .05 with df = 82 (n - k - 1 or 85 - 2 - 1). Therefore, H_0 is rejected, and it can be concluded that digital literacy (X_1) partially has a significant effect on critical thinking ability (Y).

Next, it is known that the significance value for self-efficacy (X_2) is p = .001 and t = 3.402, which is greater than the critical t value of 1.663 at α = .05 with df = 82 (n - k - 1 or 85 - 2 - 1). Therefore, H_0 is rejected, and it can be concluded that self-efficacy (X_2) partially has a significant effect on critical thinking ability (Y).

Table 2
F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2283.750	2	1141.875	38.847	.000
Residual	2410.297	82	29.394		
Total	4694.047	84			

Source: Data processed by researchers (2025)

Based on Table 2 above, it is known that the significance value is p < .001, which is less than .05. While the F value is 38.847, which shows that F > critical F. The critical F value is 3.11 (df_1 = 2, df_2 = 82, α = .05). Thus, H_0 is rejected, and it can be concluded that there is a significant simultaneous effect between digital literacy and self-efficacy on the critical thinking ability of Grade X Office Management and Business Services (MPLB) students at SMK Negeri 6 Surakarta.

Table 3
Multiple Linear Regression Analysis Results

Model	B	Std. Error	Beta
(Constant)	20.423	4.382	
Digital Literacy	.530	.113	.455
Self Efficacy	.383	.113	.329

Source: Data processed by researchers (2025)

From Table 3 above, the multiple linear regression equation obtained in this study is:

$$\hat{Y} = 20{,}423 + 0{,}530\ X_1 + 0{,}383\ X_2$$

Based on the multiple linear regression equation above, it can be interpreted as follows: (1) The constant of 20.423 mathematically shows that if the values of the digital literacy variable (X_1) and self-efficacy variable (X_2) are equal to 0, then the value of the critical thinking ability variable (Y) has a value of 20.423; (2) The regression coefficient of the digital literacy variable (X_1) has a value of 0.530, which mathematically shows that if the digital literacy variable (X_1) is increased by one unit and the self-efficacy variable (X_2) is assumed to be 0, it will cause an increase in the critical thinking ability variable (Y) of 0.530; (3) The regression coefficient of the self-efficacy variable (X_2) has a value of 0.383, which mathematically shows that if the self-efficacy variable (X_2) is increased by one unit and the digital literacy variable (X_1) is assumed to be 0, it will cause an increase in the critical thinking ability variable (Y) of 0.383.

Table 4
Coefficient of Determination Analysis Results

R	R Square	Adjusted R Square	Std. Error of the Estimate
.698[a]	.487	.474	5.422

Source: Data processed by researchers (2025)

Based on Table 4 above, it can be known that the coefficient of determination (R^2) value of .487 shows that 48.7% of the critical thinking ability variable is influenced by the digital literacy and self-efficacy variables, while the remaining 51.3% is influenced by other factors or variables not included in this study.

Table 5
Effective Contribution Calculation Results

Variable	Effective Contribution (Beta × Correlation Coefficient × 100%)
Digital Literacy (X_1)	0,455 x 0,643 x 100% = 29,26%
Self Efficacy (X_2)	0,329 x 0,590 x 100% = 19,41%
Total	48,7%

Source: Data processed by researchers (2025)

Based on Table 5 above, the calculation of the effective contribution of both independent variables equals the R^2 value. The effective contribution of digital literacy (X_1) to critical thinking ability (Y) is 29.26%, while the effective contribution of self-efficacy (X_2) to critical thinking ability (Y) is 19.41%.

Table 6
Relative Contribution Calculation Results

Variable	Relative Contribution
Digital Literacy (X_1)	60.07%
Self-Efficacy (X_2)	39.86%
Total	100%

Source: Data processed by researchers (2025)

Based on Table 6 above, the total relative contribution of both independent variables is 100% or equal to 1. The relative contribution of digital literacy (X_1) to critical thinking ability (Y) is 60.07%, and the relative contribution of self-efficacy (X_2) to critical thinking ability is 39.86%.

Discussion

The Influence of Digital Literacy on Critical Thinking Abilities of Grade X Students at SMK Negeri 6 Surakarta

Research results show that digital literacy has a positive and significant effect on the critical thinking abilities of Grade X students in the Office Management and Business Services (MPLB) Skills Program at SMK Negeri 6 Surakarta. This is shown by the t-test results that obtained a significance value of $p < .001$ and a t value of 4.708 > critical t of 1.663, which means the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. Thus, it can be concluded that digital literacy (X_1) makes a significant contribution to improving students' critical thinking abilities (Y).

Based on data obtained from 85 respondents through questionnaire completion, it is known that the statement item with the highest score is item number 1 with a total score of 341. The statement reads "I always search for information through the internet." These results show that the majority of students actively use the internet as the main source of information search, which is one of the important indicators in digital literacy. This is supported by research results from Prasetyawan and Krismayani (2019), who found that the internet (Google) is the most popular site as the main place to search for information.

Meanwhile, the statement item with the lowest total score is item number 5 with a total score of 248, which reads "I understand the function and workings of hypertext in an article." This finding indicates that some students still do not optimally understand the basic concept of hypertext, which is a component in navigation and understanding digital information structures. Supported by the study of Wu et al. (2021), which highlights that technical understanding of hypertext is still not evenly distributed among users, especially in terms of digital navigation structure and function. These findings are interesting because the lowest statement item is in a positive statement. This finding is important to note because it shows a gap between daily technology use and conceptual and functional understanding of that technology.

Students who have good digital literacy will be better able to access and evaluate various information sources critically. This strengthens their ability to draw conclusions, design problem solutions, and make rational decisions. This research is in line with previous research results such as those stated by Nasrikin et al. (2023), which states that digital literacy significantly influences students' critical thinking abilities. Research by Cahyani et al. (2024) and Nugraha and Normansyah (2024) also confirms that digital literacy plays an important role in encouraging students to be actively and critically involved in technology-based learning processes.

The Influence of Self-Efficacy on Critical Thinking Abilities of Grade X Students at SMK Negeri 6 Surakarta

Analysis results in this study show that self-efficacy has a positive and significant effect on the critical thinking abilities of Grade X students in the Office Management and Business Services (MPLB) Skills Program at SMK Negeri 6 Surakarta. This is proven through the t-test, which shows a significance value of $p = .001$ and a t value of 3.402 > critical t of 1.989. Therefore, the null hypothesis (H_0) is rejected and the second hypothesis (H_2) is declared accepted, which shows that self-efficacy (X_2) significantly affects students' critical thinking abilities (Y).

Based on data obtained from 85 respondents through questionnaire completion, it is known that the statement item that obtained the highest score is item number 6 with a total score of 347. The statement reads "I keep trying and do not give up even if I fail." These results show that most students have high persistence and fighting spirit in facing learning challenges. Supported by the study of Wu et al. (2022), which identified that students with high levels of grit (persistence) show better academic achievement.

Meanwhile, the statement item with the lowest total score is item number 1 with a total score of 251, which reads "I am confident in doing difficult tasks." This finding shows that some students still experience doubt in facing complex academic challenges. Supported by research results from Ferdyansyah et al. (2020), which show that students with low self-efficacy tend to avoid learning tasks that are considered difficult. In addition, there is a finding of the statement "I do not dare to try

again after experiencing failure" with a fairly high total score reaching 325. This statement is negative because it shows a fear of trying again after failing. However, this finding actually shows doubt or a low tendency of students' courage in facing failure. This can be an indication that although students have confidence in their abilities, there are still mental barriers in managing failure.

Individuals with high levels of self-efficacy tend to be better able to manage fear of failure and remain focused on analyzing information deeply. This is in line with the opinion of Fu et al. (2023), who stated that high self-efficacy tends to use higher-level learning strategies, which ultimately improve critical thinking abilities. The results of this study are also reinforced by the findings of Salea and Soetjiningsih (2022) and Sukma and Priatna (2021), which state that self-efficacy has a significant positive relationship with critical thinking abilities. Students who have confidence in their abilities tend to be more persistent, not easily discouraged, and able to see challenges as opportunities to learn.

The Influence of Digital Literacy and Self-Efficacy Together on Critical Thinking Abilities of Grade X MPLB Students at SMK Negeri 6 Surakarta

Analysis results in this study show that digital literacy and self-efficacy simultaneously have a significant effect on the critical thinking abilities of Grade X students in the Office Management and Business Services (MPLB) Skills Program at SMK Negeri 6 Surakarta. This is proven through the F-test which shows a significance value of $p < .001$ and an F value of 38.847 > critical F of 3.11. Based on these results, the third hypothesis (H_3) is accepted. This means that digital literacy (X_1) and self-efficacy (X_2) together provide a significant influence on improving critical thinking abilities (Y).

Based on data obtained from 85 respondents through questionnaire completion, it is known that the statement item with the highest score is item number 6 with a total score of 345, which reads "I compare information from various sources before making decisions." These results show that most students are accustomed to conducting analysis and evaluation processes on the information they receive before making decisions. Supported by research by Apriyanti et al. (2024), which emphasizes the importance of critical reading in the decision-making process. Through critical reading, individuals can gather various perspectives and data before making decisions. Meanwhile, the statement item with the lowest total score is item number 11 with a total score of 214, which reads "I am accustomed to drawing conclusions based on personal knowledge that I have." These results show that there are still many students who have not gotten used to building conclusions based on integration between personal experience and newly acquired knowledge, but only based on the knowledge they have. Supported by Hasanuddin's (2020) view on the importance of prior knowledge in learning, which includes experiences and attitudes already possessed by individuals that are used to construct new knowledge and experiences. This shows that integration between personal knowledge and new information is important in the learning process.

The findings in this study are in line with previous research findings that show that the application of information technology in the learning process can expand students' access to relevant information while increasing critical thinking capacity (Nasrikin et al., 2023; Nugraha & Normansyah, 2024). Meanwhile, self-efficacy enables students to build persistence and confidence to complete tasks that demand critical thinking abilities, as explained by Salea and Soetjiningsih (2022). However, there has been no previous research that examines digital literacy and self-efficacy together on critical thinking abilities.

Conclusion

Based on the research results, data analysis, and discussion that have been carried out, the following conclusions were obtained: (1) There is a positive and significant effect of digital literacy on the critical thinking abilities of Grade X Office Management and Business Services (MPLB) students at SMK Negeri 6 Surakarta. This is shown through the t-test with a significance value of the digital literacy variable of $p < .001$ and $t = 4.708$ > critical t of 1.663. Therefore, it can be concluded that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) in this study is accepted, so that digital literacy partially has a significant effect on critical thinking abilities; (2)

There is a positive and significant effect of self-efficacy on the critical thinking abilities of Grade X Office Management and Business Services (MPLB) students at SMK Negeri 6 Surakarta. This is proven by the t-test results which show a significance value on the self-efficacy variable of p = .001 and t = 3.402 > critical t of 1.663. Thus, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_2) is accepted, which means self-efficacy partially provides a significant influence on students' critical thinking abilities; (3) There is a positive and significant effect of digital literacy and self-efficacy together on the critical thinking abilities of Grade X Office Management and Business Services (MPLB) students at SMK Negeri 6 Surakarta. This is shown through the F-test results with a significance value of p < .001 and F = 38.847 > critical F of 3.11. Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_3) is accepted, which means both independent variables together significantly affect the dependent variable.

References

'Aini, L. Q. (2020). Analisis kemampuan penalaran matematis siswa ditinjau dari self-efficacy siswa SMP Kelas VII. *Jurnal E-DuMath*, *6*(1), 30–39. https://doi.org/10.52657/je.v6i1.1162

Apriyanti, D. N., Fitriarini, L. S., Putri, M., & Fitriyah Z., A. M. A. (2024). Membaca kritis dapat meningkatkan kemampuan dalam pengambilan keputusan. *Jurnal Bima: Pusat*, *2*(1). https://journal.aripi.or.id/index.php/Bima/article/download/563/574

Ariadila, S. N., Silalahi, Y. F. N., Fadiyah, F. H., Jamaluddin, U., & Setiawan, S. (2023). Analisis pentingnya keterampilan berpikir kritis terhadap pembelajaran bagi siswa. *Jurnal Ilmiah Wahana Pendidikan*, *9*(20), 664–669.

Bandura, A. (1997). Albert Bandura and the exercise of self-efficacy. *Journal of Cognitive Therapy*, *13*, 158–166.

Cahyani, N., Hutagalung, E. N. H., & Harahap, S. H. (2024). Berpikir kritis melalui membaca: Pentingnya literasi dalam era digital. *IJEDR: Indonesian Journal of Education and Development Research*, *2*(1), 417–422. https://doi.org/10.57235/ijedr.v2i1.1795

Ennis, R. (2011). Critical thinking: Reflection and perspective part I. *Inquiry: Critical Thinking Across the Disciplines*, *26*(1), 4–18.

Fauzan, A., Rispawati, R., & Salam, M. (2021). Pengaruh model pembelajaran think pair share terhadap kemampuan berpikir kritis siswa pada mata kuliah demokrasi pancasila. *Journal of Moral and Civic Education*, *5*(1), 12–21. https://doi.org/10.24036/8851412512020503

Fauzi, N. F., & Usmeldi, U. (2022). Analisis kemampuan literasi digital siswa SMK. *Ranah Research: Journal of Multidisciplinary Research and Development*, *4*(2), 173–180. https://doi.org/10.38035/rrj.v4i2.466

Ferdyansyah, A., Rohaeti, E. E., & Suherman, M. M. (2020). Gambaran self efficacy siswa terhadap pembelajaran. *FOKUS (Kajian Bimbingan & Konseling Dalam Pendidikan)*, *3*(1), 16. https://doi.org/10.22460/fokus.v3i1.4214

Fida, R., Marzocchi, I., Arshad, M., Paciello, M., Barbaranelli, C., & Tramontano, C. (2025). Self-efficacy and nontask performance at work: A meta-analytic summary. *Personality and Individual Differences*, *241*(January). https://doi.org/10.1016/j.paid.2025.113179

Fu, J., Ding, Y., Nie, K., & Zaigham, G. H. K. (2023). How does self-efficacy, learner personality, and learner anxiety affect critical thinking of students. *Frontiers in Psychology*, *14*(December), 1–11. https://doi.org/10.3389/fpsyg.2023.1289594

Gilster, P. (1997). *Digital literacy*. John Wiley and Sons.

Hamdani, T., Ch, R. U., & Ainiyah, N. (2023). Implementasi kurikulum merdeka belajar dalam meningkatkan kemampuan berpikir kreatif siswa pada pelajaran PAI di SMKN 10 Bandung. *Journal for Islamic Studies*, *6*(3), 611–626. https://doi.org/10.31943/afkarjournal.v6i3.676

Hasanuddin, M. I. (2020). Pengetahuan awal (prior knowledge): Konsep dan implikasi dalam pembelajaran. *EDISI: Jurnal Edukasi Dan Sains*, *2*(2), 217–232. https://ejournal.stitpn.ac.id/index.php/edisi

Martinez, C., & Tinoca, L. (2022). Developing 21st century teaching skills: A case study of teaching and learning through project-based curriculum. *Cogent Education*, *00*(00), 1–16. https://doi.org/10.1080/2331186X.2021.2024936

Nasrikin, R., Komalasari, K., & Ruhimat, M. (2023). Pengaruh literasi media internet terhadap kemampuan berpikir kritis siswa dalam pembelajaran ilmu pengetahuan sosial di era covid-19. *Jurnal Civic Hukum*, *8*(1), 46–57. http://ejournal.umm.ac.id/index.php/jurnalcivichukum

Naufal, H. A. (2021). Literasi digital. *Perspektif*, 195–202.

Nugraha, I. A., & Normansyah, A. D. (2024). Pengaruh ilterasi digital terhadap keterampilan berpikir kritis peserta didik pada mata pelajaran Pendidikan Pancasila dan Kewarganegaraan (PPKn). *5*(1), 1–11.

Prasetyawan, Y. Y., & Krismayani, I. (2019). Kajian perilaku informasi mahasiswa Fakultas Ilmu Budaya Universitas Diponegoro. *Baca: Jurnal Dokumentasi Dan Informasi*, *40*(2), 171. https://doi.org/10.14203/j.baca.v40i2.480

Rastal Arif, J., Faiz, A., & Septiani, L. (2022). Penggunaan media quiziz sebagai sarana pengembangan berpikir kritis siswa. *Edukatif: Jurnal Ilmu Pendidikan*, *4*(1), 201–210.

Riel, J. (2012). Charting digital literacy: A framework for information technology and digital skills education in the community college. *SSRN Electronic Journal*, *541*, 1–22. https://doi.org/10.2139/ssrn.2781161

Salea, N., & Soetjiningsih, C. H. (2022). Hubungan self efficacy dengan critical thinking pada mahasiswa Fakultas Psikologi UKSW. *Jurnal Ilmiah Bimbingan Konseling Undiksha*, *13*(2), 1–7. https://doi.org/10.23887/jibk.v13i2.35711

Sariningsih, R., & Purwasih, R. (2017). Pembelajaran problem based learning untuk meningkatkan kemampuan pemecahan masalah matematis dan self efficacy mahasiswa calon guru. *JNPM (Jurnal Nasional Pendidikan Matematika)*, *1*(1), 163. https://doi.org/10.33603/jnpm.v1i1.275

Sukma, Y., & Priatna, N. (2021). Pengaruh self-efficacy terhadap kemampuan berpikir kritis siswa pada mata pelajaran matematika. *Jurnal Ilmiah Soulmath: Jurnal Edukasi Pendidikan Matematika*, *9*(1), 75–88. https://doi.org/10.25139/smj.v9i1.3461

Wendratama, E., Utomo, W. P., Syafrizal, & Aprilia, M. P. (2020). Whatsapp group and digital literacy among Indonesian women. In *Paper Knowledge. Toward a Media History of Documents* (Issue April). https://doi.org/10.13140/RG.2.2.12351.05289

Wu, J., Qi, S., & Zhong, Y. (2021). Studi deskriptif evolusi website dari html 1 sampai html 5 dan pengaruhnya terhadap perancangan dan pengembangan website. *Conference on Management, Business, Innovation, Education and Social Sciences (CoMBInES)*, *1*(1), 589–596.

Wu, J., Qi, S., & Zhong, Y. (2022). Intrinsic motivation, need for cognition, grit, growth mindset and academic achievement in high school students: Latent profiles and its predictive. *Educational Psychology: An International Journal of Experimental Educational Psychology*. https://doi.org/10.31234/osf.io/mheg7

Wulandari, P. A., Sholeh, K., & Syaflin, S. L. (2023). Hubungan penggunaan literasi digital dengan hasil belajar siswa kelas V SDN Muara Sugihan Kabupaten Banyuasin. *JRPD (Jurnal Riset Pendidikan Dasar)*, *6*(2), 170–176. https://doi.org/10.26618/jrpd.v6i2.11334