

## Influence *Self-Efficacy*, Emotional Intelligence, and Learning Independence on Critical Thinking Skills of Class X Accounting Students at State Vocational High Schools in South Jakarta

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### Abstract

*This study aims to test and analyze the influence of self-efficacy, emotional intelligence, and learning independence on the critical thinking skills of tenth-grade Accounting students. This research employed a quantitative approach using primary data collected through questionnaires. The population of this study consisted of 250 students, with a sample of 154 respondents selected using probability sampling with a simple random sampling technique. The data were analyzed using SPSS v26 through descriptive statistical analysis, multiple linear regression analysis, t-test, F-test, and coefficient of determination. The findings revealed that (1) self-efficacy has a significant influence on students' critical thinking, (2) emotional intelligence does not have a significant influence on students' critical thinking, (3) learning independence has a significant influence on students' critical thinking, (4) self-efficacy, emotional intelligence, and learning independence have a significant influence on students' critical thinking.*

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## 1. INTRODUCTION

Education in Indonesia faces challenges in developing the potential of students to meet the complex demands of the 21st century. This is in line with the concept of the *21st Century Learning Partnership Framework*, which emphasizes the importance of integrating skills in the learning process to increase the competitiveness of graduates in a dynamic and innovative world of work. (Battelle for Kids, 2019). The conceptual framework identifies four key skills known as the 4Cs (Collaboration, Communication, Critical Thinking, and Creativity). The urgency of developing 21st-century skills in Indonesia has begun to be integrated through the Pancasila Profile concept in the Independent Curriculum, which emphasizes developing students' critical thinking skills based on piety and global diversity. (Ardianto et al., 2025).

One level of education that requires this development effort is Vocational High School (SMK), which aims to prepare students with broad insight and special skills to be able to contribute positively in solving problems that tend to be complex in the world of work that they will enter. (Neswari & Dwijayanti, 2022) This objective is reinforced by the Ministry of Education and Culture Regulation Number 17/M/2021 concerning the Center of Excellence Vocational High School Program (SMK PK), which is designed to meet the needs of a dynamic industry. (Sulaeman et al., 2024) This is in accordance with the 2017 order from the Directorate of Vocational High School Development, which states that accounting practices applied in current education must focus on developing skills related

to reasoning and critical understanding of the results of one's own work. (Ayuningsih et al., 2020).

In practice, these skills development efforts have yet to achieve the desired results. PISA 2022 statistics show that Indonesia ranked 13th among the 81 participating countries. (Aliyya & Marsono, 2025) This is because all Indonesian students who participated were only able to obtain scores in the range of 350-380 for the three test subjects (mathematics, literacy, and science). While the average score (OECD Average) for the entire country is already at 470. These results indicate that education in Indonesia is at level 2 of the average level of education that has reached level 5-6, so that Indonesian students are considered not yet able to model a problem that tends to be complex into a mathematical context, as well as choose, consider, and evaluate solutions or strategies in solving the problem without direct instruction. (PISA 2022 Results Factsheets Indonesia PUBE, 2023). This is reinforced by the report contained in the Indonesian Education Report 2025; the literacy achievement of students at the SMK level is at 66.02%, while the numeracy ability is at 64.02%. Both achievements are still in the moderate category because they are in the range of 40% - 70%. Although there is an increase in results from 2024, this achievement indicates that SMK students in Indonesia are not yet able to understand the relationship between concepts, procedures, theories, and their application in various life contexts optimally.

Critical thinking ability can be defined as an individual's ability to think and draw appropriate conclusions based on their own thoughts and understanding. (Fu et al., 2023). This understanding is also strengthened by the opinion of Aminullah & Suparman (2025), which states that critical thinking skills are closely related to an individual's ability to analyze information, evaluate arguments, and make appropriate decisions based on their own data and logic, in order to solve the problems, they face. Therefore, it can be concluded that critical thinking skills are high-level thinking skills that enable individuals to process information through the process of understanding, analysis, and evaluation, so that they can draw conclusions and make appropriate decisions based on relevant logic and data. This is in line with the concept of learning theory proposed by Robert H. Ennis, which states that pedagogy *critical thinking* must continue to be developed in students by providing creative learning and assessment activities to enable students to make decisions using analysis and logical thinking related to information. (Ennis, 1985). According to Ennis, there are five indicators used to measure an individual's critical thinking, namely *elementary clarification, decision-making foundations, inference, advanced clarification, and strategies*.

Students' ability to solve problems related to assignments and accounting questions can be influenced by several factors. One of these factors is self-confidence and belief, also known as self-efficacy. Self-efficacy is closely related to a person's belief in and ability to complete a task or achieve a specific goal. This definition aligns with Putri et al.'s (2024) opinion, which states that *self-efficacy* is the belief in one's own ability to succeed in achieving certain achievement targets and overcome life's obstacles. According to Bandura's theory (1997), there are three indicators to measure the level of self-efficacy. *Self-efficacy has three indicators, namely level, strength, and generality*. Several previous studies show a significant influence between *self-efficacy* and *critical thinking*, such as research conducted by Fu et al. (2023), Simorangkir & Raidil (2025), and Ananda & Susilowati (2025). However, Huda et al. (2024) actually get the result that *self-efficacy* does not have a significant effect on the critical thinking abilities of individuals, especially students as the main subject.

Another psychological factor that influences students' critical thinking skills is their emotional intelligence. This aligns with Rubenfeld and Scheffer's statement that self-motivation, anxiety, emotions, and experiences influence a person's level of critical thinking in solving problems (Ayuningsih et al., 2020). According to Goleman, emotional intelligence can be defined as the ability to motivate oneself, regulate moods, avoid exaggerating pleasure, control frustration, and prevent stress from hindering the process of thinking, empathizing, and praying (Sari & Barlian, 2025). The indicators used to measure an individual's level of emotional intelligence are adopted from the theory proposed by Salovey & Mayer. Research conducted by Hasan & Noor (2024), Hermiati et al. (2024), and Tri Amalia & Fauzan (2024) found a significant influence between students' emotional intelligence and their critical thinking skills. However, research conducted by Rosyida & Bahtiar (2024) In fact, the results showed that emotional intelligence did not have a significant influence on students' critical thinking abilities.

In addition to internal and psychological factors, students' critical thinking skills are also influenced by how they manage and direct their learning process independently. The development of students' knowledge and understanding is not only focused on classroom learning but is also closely related to their ability and willingness to independently determine plans, resources, and evaluation strategies to achieve their desired academic outcomes. (Nuryana & Chaidar, 2022). This concept is what later became known as independent learning. As a field that requires concentration and *procedural ability*, accounting students must have critical thinking that can help them in completing the entire accounting cycle with a minimum error rate. (Siagian et al., 2021). This is in accordance with the understanding conveyed by Astindari et al. (2025) that independent learning is believed to contribute to students' analytical and in-depth thinking regarding the knowledge they receive, including in complex subjects such as accounting and finance. The indicators used to measure independent learning are *initiative*, *self-confidence*, *responsibility*, *self-control*, and *discipline*. A study by Nuryana & Chaidar (2022) shows a significant influence between learning independence and students' critical thinking skills. The results of this study are supported by research conducted by Maimun & Bahtiar (2023), Astindari et al. (2025), and Aminullah & Suparman (2025), who also stated that there is a positive and significant influence between the variable of learning independence and critical thinking skills. However, research conducted by Tilawatila et al. (2024) showed statistical results that independent learning tends to have a weak influence in improving students' critical thinking skills, especially in the context of mathematics.

Based on the background that has been explained regarding the urgency of improving students' critical thinking skills, the factors that influence it, and the inconsistency of the results from several previous studies, the researcher focuses on testing the "Influence of *Self-Efficacy*, Emotional Intelligence, and Learning Independence towards Critical Thinking Skills of Class X Accounting Students at State Vocational High Schools in South Jakarta".

## 2. RESEARCH METHODS

This research is quantitative research using a correlational approach to analyze the relationship between *self-efficacy*, emotional intelligence, and learning independence on accounting students' critical thinking skills. According to Mamuaya et al. (2025), quantitative research is a research methodology that involves numerical data and is based on the activities of collecting and analyzing information about a particular phenomenon or problem. This research used *software* SPSS v26 as the primary application used to test the overall hypotheses. The sample population consisted of all 10th-grade students majoring in

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accounting from three state vocational schools in the 2025/2026 academic year, with a total population of 250 respondents.

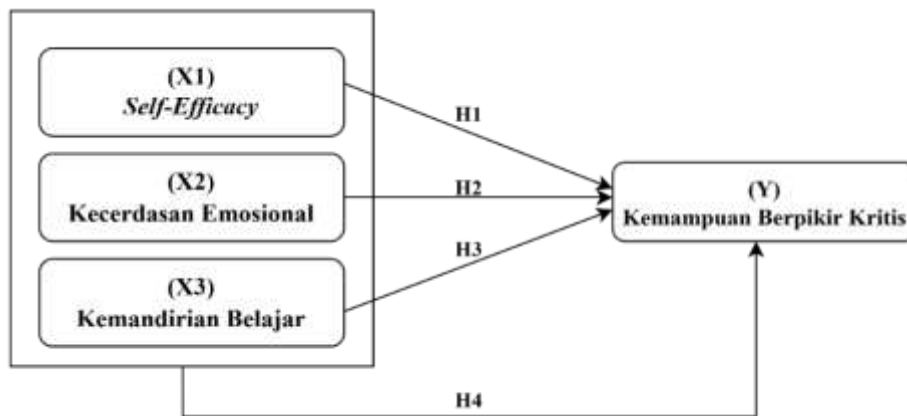
This research applies *probability sampling* as a sampling method. The technique used is *simple random sampling* because all parts of the population have the same probability of being selected as part of the sample (Syamsul et al., 2023). This technique was used because the entire research population has the same criteria or probability, namely class X students majoring in accounting, which allows researchers to provide an equal opportunity for each student to be selected as part of the sample. Data collection was carried out by distributing questionnaires using *Google Forms* as the primary platform for all students included in the research sample. The sample size was determined using the Slovin formula with a significance level of 5%, resulting in a total sample of 154 respondents. The calculations for each school included in the research population are presented in the following table.

**Table 1. Research Sample Calculation**

No .	School and Vocational	Sample Calculation Method	Number of Samples
1	State Vocational School 8 Jakarta - Accounting Department	$106/1+250(0,05)^2$	65
2	State Vocational School 25 Jakarta - Accounting Department	$72/1+250(0,05)^2$	44
3	State Vocational School 47 Jakarta - Accounting Department	$71/1+250(0,05)^2$	44
<b>Total</b>			<b>154</b>

Source: Data processed by researchers (2026)

The following is the conceptual framework and quantitative research design used in this study:



**Figure 1. Conceptual Framework**

Source: Data processed by researchers (2026)

The research design describes a multiple quantitative research paradigm with three independent variables to find the magnitude of the relationship or test all independent variables (X1, X2, X3) against the dependent variable (Y), either partially or simultaneously (Sugiyono, 2019).

### 3. RESULTS AND DISCUSSION

#### 3.1. Research Results

This research began with testing to determine the quality of the instrument by conducting validity and reliability tests. Syamsul et al. (2023) Validity testing is a test that aims to measure the accuracy of a research instrument or measuring tool. Meanwhile, reliability testing is conducted to obtain research measuring tool with reliable validity. The main purpose of this test is to ensure that the measuring tool can produce data relevant to the research objectives. The results of the validity test indicate that all instruments have a correlation coefficient value greater than the constant validity criterion (0.1572). Furthermore, the Cronbach's Alpha value for all instruments is  $0.941 > 0.60$ . These test results indicate that all instruments used are deemed appropriate and reliable in representing all indicators of each research variable.

**Table 2. Results of Descriptive Statistical Tests**

Descriptive Statistics						
	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Critical Thinking Skills	154	46	84	9582	62,220	7,1895
<i>Self-Efficacy</i>	154	23	48	5679	36,877	4,906
Emotional Intelligence	154	25	47	5256	34,130	4,138
Learning Independence	154	29	67	7971	51,760	6,862
Valid N	154					

Source: Results of SPSS v26 data processing, data processed by researchers (2026)

Descriptive statistical analysis is a method used to analyze data that refers to the process and results of statistical descriptions. (Syamsuddin et al., 2022) Descriptive statistical results show that all variables have varying scores from 154 respondents, as indicated by the difference between the lowest and highest scores for each variable. Furthermore, the standard deviation for all variables is smaller than the average score. Therefore, it can be concluded that the research data has a relatively moderate level of diversity and can fairly represent the respondents' conditions.

**Table 3. Normality Test Results**

One-Sample Kolmogorov-Smirnov Test		
Unstandardized Residual		
N		154
Normal Parameters <sup>a,b</sup>	Mean	0,0000000
	Std. Deviation	4,49940082
Most Extreme Differences	Absolute	0,050
	Positive	0,050
	Negative	-0,040
Test Statistic		0,050
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: SPSS v26 data processing results

Data normality testing is a test carried out to ensure that the data obtained from the population is in a normal distribution. (Syamsul et al., 2023). Based on the *output* of the normality test, the Asymp. Sig. (2-tailed) value obtained was 0.200. This indicates that the significance value is more than 0.005, indicating that the collected data are normally distributed. Therefore, it can be concluded that the measurement

results of each research variable are normally distributed and do not have any normality disturbances.

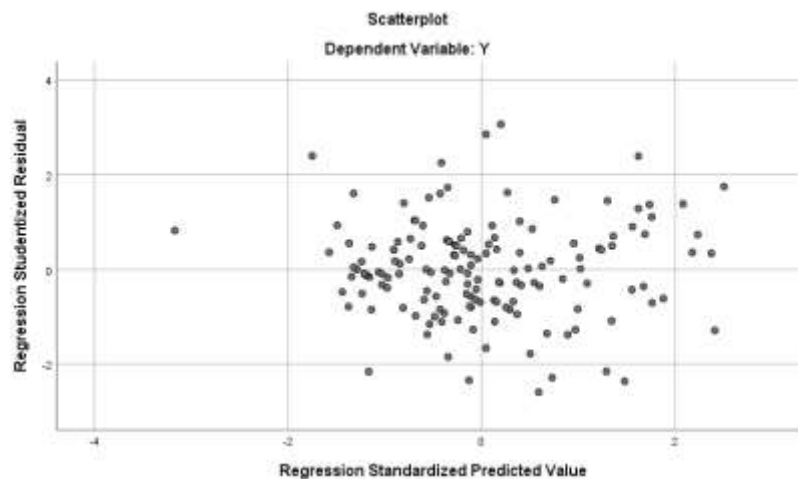
**Table 4. Multicollinearity Test Results.**

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF
1	(Constant)	14.280	3.348			
	Self-Efficacy	0.536	0,112	0,365	0,446	<b>2,241</b>
	Kecerdasan Emosional	0,189	0,117	0,109	0,578	<b>1,731</b>
	Kemandirian Belajar	0,420	0,077	0,401	0,486	<b>2,057</b>

a. Dependent Variable: Kemampuan Berpikir Kritis

Source: SPSS v26 data processing results

The multicollinearity test is a test carried out to determine whether there is a correlation between independent variables. (Nugraha, 2022) Based on the results of the multicollinearity test, the VIF values obtained for each independent variable ranged from 1.496 to 1.541. This indicates that the VIF value is <10, indicating no correlation between the tested variables. Therefore, it can be concluded that the data/measurement results from each research variable can provide accurate interpretation and meet the requirements for further regression testing because there is no significant correlation between the independent variables.



**Figure 2. Output Heteroscedasticity Test**

Source: SPSS v26 data processing results

The heteroscedasticity test is a test performed to analyze differences in residual variance results from one observation to another. This test is necessary to ensure that hypothesis testing produces fully reliable regression results. The graphical results-*scatter plot*- illustrate that *residual errors* for all variables are randomly distributed, above and below the value 0 on the Y-axis. *Residual Error*: They do not gather at one point, forming a specific pattern, such as wavy or widening and then narrowing. Therefore, it can be concluded that the data/measurement results from each research variable meet the requirements for further hypothesis testing because there is no heteroscedasticity between the independent variables.

**Table 5. T-Test Results**

Model		Coefficients <sup>a</sup>			t	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	14,280	3,348		4,265	<b>0,000</b>
	<i>Self-Efficacy</i>	0,536	0,112	0,365	4,778	<b>0,000</b>
	Kecerdasan Emosional	0,189	0,117	0,109	1,617	<b>0,108</b>
	Kemandirian Belajar	0,420	0,077	0,401	5,470	<b>0,000</b>

a. Dependent Variable: Kemampuan Berpikir Kritis

Source: SPSS v26 data processing results

The T-test is a test conducted to measure the significance of the influence of independent variables on dependent variables individually or partially (Amruddin et al., 2022). Based on the T-test results in the table above, it shows that the significance level for the variables *Self-Efficacy*(X1) and the learning independence variable (X3) is 0.000, which is smaller than 0.05. This finding shows that *self-efficacy* and learning independence have a significant partial effect on critical thinking skills, so the first hypothesis (H1) and the third hypothesis (H3) are accepted. Meanwhile, the significance value of the emotional intelligence variable (X2) is at 0.108, which is greater than 0.05. This finding indicates that emotional intelligence does not have a significant effect on critical thinking skills, so the second hypothesis (H2) is rejected.

The results of the T-test above also serve as the basis for analyzing linear regression equations to explain and illustrate the influence of two or more independent variables on the dependent variable. The results of the regression analysis show that *self-efficacy* ( $\beta = 0.536$ ), emotional intelligence ( $\beta = 0.189$ ), and learning independence ( $\beta = 0.420$ ) have positive regression coefficients, which means that an increase in each variable will be followed by an increase in critical thinking skills, assuming that the other variables are constant. *Variable self-efficacy* is the most dominant independent variable in influencing the critical thinking skills of class X Accounting students.

**Table 6. F Test Results**

Model		ANOVA <sup>a</sup>				Sig.
		Sum of Squares	df	Mean Square	F	
1	Regression	4811,069	3	1603,690	<b>77,662</b>	<b>.000<sup>b</sup></b>
	Residual	3097,425	150	20,649		
	Total	7908,494	153			

a. Dependent Variable: Kemampuan Berpikir Kritis

b. Predictors: (Constant), Kemandirian Belajar, Kecerdasan Emosional, Self-Efficacy

Source: SPSS v26 data processing results

The F test is a test carried out to measure the significance of the influence of independent variables on dependent variables together or as a whole. (Amruddin et al., 2022). This test aims to determine the simultaneous relationship between independent variables, namely *self-efficacy*, emotional intelligence, and learning independence, on the dependent variable, namely critical thinking skills. Based on the F-test calculation in Table 4.20, F is obtained with a count of 77.662. Meanwhile, the test criteria ( $F_{table}$ ) can be seen from the F distribution table with a significance level of 0.05, which produces an  $F_{value_{table}}$  of 2.665. Thus, the  $F_{value_{count}}$  of 77.662 is greater than 2.665. Furthermore, the significance value obtained is  $0.000 < 0.05$ . Based on the results of this analysis, it can be concluded that H4 is accepted or in other words, *self-efficacy*,

emotional intelligence, and learning independence together have an influence on critical thinking skills.

**Table 7. Results of the Determination Coefficient Test**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780 <sup>a</sup>	0,608	0,601	4,54417
a. Predictors: (Constant), Kemandirian Belajar, Kecerdasan Emosional, Self-Efficacy				

Source: SPSS v26 data processing results

The coefficient of determination essentially aims to assess the influence of the variance of a particular variable on the variance of another variable (Sugiyono, 2019). This test is useful for assessing the extent to which each independent variable contributes to and influences the dependent variable as a whole. Based on the table above, the R Square value is 0.608. This coefficient of determination is in the moderate category because it is in the range of 0.33–0.67. This indicates that self-efficacy, emotional intelligence, and learning independence can influence investment decisions by 60%. Meanwhile, the remaining 40% is explained by other factors outside the model that influence the dependent variable.

**3.2. Discussion**

Based on the results of the t-test, F, and coefficient of determination tests that have been carried out, the research results are described as follows.

**a. Influence of Self-Efficacy on Critical Thinking Skills**

Based on the results of this study, the variables *self-efficacy*(X1) is proven to have a positive and significant influence on critical thinking skills (Y). The results of the t-test show a t-value<sub>count</sub> of 4.778 > 1.97 and a significance value of 0.000 < 0.05. Thus, *self-efficacy* is proven to have a positive and significant influence on critical thinking skills, and it can be concluded that the first hypothesis (H1) is accepted. This finding indicates that the level of confidence in students' self-potential can improve their critical thinking process. These results are supported by previous research conducted by Nuryadi et al. (2025), Simorangkir & Raidil (2025), and Salea et al. (2022), which stated that *self-efficacy* has a significant positive influence on accounting critical thinking skills.

**b. The Influence of Emotional Intelligence on Critical Thinking Skills**

Based on the results of this study, the emotional intelligence variable (X2) was proven to have no significant influence on critical thinking skills (Y). The results of the t-test showed a t-value of 0.05, a count of 1.617 < 1.97, and a significance value of 0.108 > 0.05. Thus, it can be concluded that emotional intelligence does not have a significant influence on critical thinking skills or it can be concluded that the second hypothesis (H2) is rejected. These results indicate that students' critical thinking skills in the context of accounting learning are not directly determined or influenced by students' ability to manage emotions, but rather are more influenced by other factors such as self-confidence and learning behavior. These results are supported by previous studies conducted by Palma-Luengo et al. (2025) and Rosyida & Bahtiar (2024), which stated that emotional intelligence does not have a significant influence on individuals' critical thinking skills.

**c. The Influence of Learning Independence on Critical Thinking Skills**

Based on the results of this study, the learning independence variable (X3) was proven to have a positive and significant influence on critical thinking skills (Y). The results of the t-test showed a t-value<sub>count</sub> of 5.470 > 1.97 and a significance

value of  $0.000 < 0.05$ . Thus, statistically, learning independence has a positive and significant influence on critical thinking skills, especially in the context of accounting learning, or it can be concluded that the third hypothesis (H3) is accepted. This finding indicates that the greater the willingness of students to actively and independently manage and control their learning process, the better the critical thinking process they use in solving accounting problems. This result is supported by previous research conducted by Maimun & Bahtiar (2023), Nuryana & Chaidar (2022), and Siagian et al. (2021), which stated that learning independence has a significant positive influence on students' critical thinking skills.

#### **d. Influence of *Self-Efficacy*, Emotional Intelligence, and Learning Independence on Critical Thinking Skills**

Based on the results of this study, all independent variables, namely *self-efficacy* (X1), emotional intelligence (X2), and learning independence (X3), were proven to influence critical thinking skills (Y) together. This is supported by the F value. count is 77.662, greater than  $F_{table}$  of 2.665. Furthermore, the significance value obtained is 0.000, which is smaller than 0.05. Based on the results of this test, it can be concluded that *self-efficacy*, emotional intelligence, and learning independence jointly influence critical thinking skills; thus, the fourth hypothesis (H4) is accepted. This finding indicates that the combination of students' self-confidence, emotional control, and independent learning behavior can enhance their critical thinking process in solving accounting problems. This finding is supported by research conducted by Azizah et al. (2022), Hermiati et al. (2024), and Aminullah & Suparman (2025), which also states that *self-efficacy*, emotional intelligence, and learning independence together can improve students' critical thinking skills.

## **4. CONCLUSION**

Based on the test results, analysis, and discussion regarding the influence of *self-efficacy*, emotional intelligence, and learning independence on the critical thinking abilities of class X Accounting students, it can be concluded that:

- a. *Self-Efficacy* has a significant influence on students' critical thinking skills.
- b. Emotional intelligence does not have a significant effect on students' critical thinking skills.
- c. Learning independence has a significant influence on students' critical thinking skills.
- d. *Self-efficacy*, emotional intelligence, and learning independence have a significant influence on students' critical thinking skills.

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