

# THE EFFECT OF CRITICAL THINKING ABILITY, LEARNING DISCIPLINE AND LEARNING MOTIVATION ON LEARNING INDEPENDENCE

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**Abstract: The Effect of Critical Thinking Ability, Learning Discipline and Learning Motivation on Learning Independence.** This study aims to determine: (1) the effect of critical thinking skills on student learning independence, (2) the effect of learning discipline on student learning independence, (3) the effect of learning motivation on student learning independence, and (4) The effect of critical thinking ability, learning discipline and learning motivation on the student learning independence. The results of the study show that: (1) there is a positive effect of Critical Thinking Ability on Independent Learning of 22,3% with an  $r^2_{x_1y}$  of 0,223 and a significance coefficient of 0,000, so the first hypothesis is supported. (2) there is a positive effect of Learning Discipline on Independent Learning by 25% with an  $r^2_{x_2y}$  of 0,250 and a significance of 0,000, so the second hypothesis is accepted. (3) There is a positive effect of learning motivation on learning independence by 26.1% with an  $r^2_{x_3y}$  of 0,261 and a significance of 0,000, so the third hypothesis is accepted. (4) There is a positive effect of critical thinking ability, learning discipline, and learning motivation together on independent learning by 32,5%

**Keywords:** Critical Thinking, Learning Discipline, Learning Motivation dan Independence Learning.

**Abstrak: Pengaruh Kemampuan Berpikir Kritis, Disiplin Belajar dan Motivasi Belajar Terhadap Kemandirian Belajar.** Penelitian ini bertujuan untuk mengetahui: (1) pengaruh kemampuan berpikir kritis terhadap kemandirian belajar siswa, (2) pengaruh disiplin belajar terhadap kemandirian belajar siswa, (3) pengaruh motivasi belajar pada kemandirian belajar siswa, (4) Pengaruh kemampuan berpikir kritis, disiplin belajar dan motivasi belajar terhadap kemandirian belajar siswa. Hasil penelitian menunjukkan bahwa: (1) terdapat pengaruh positif Kemampuan Berpikir Kritis terhadap Kemandirian Belajar sebesar 22,3% dengan  $r^2_{x_1y}$  sebesar 0,223 dan koefisien signifikansi sebesar 0,000 sehingga hipotesis pertama didukung. (2) terdapat pengaruh positif Disiplin Belajar terhadap Kemandirian Belajar sebesar 25% dengan  $r^2_{x_2y}$  sebesar 0,250 dan signifikansi sebesar 0,000 sehingga hipotesis kedua diterima. (3) terdapat pengaruh positif Motivasi Belajar terhadap Kemandirian Belajar sebesar 26,1% dengan  $r^2_{x_3y}$  sebesar 0,261 dan signifikansi sebesar 0,000 sehingga hipotesis ketiga diterima. (4) terdapat pengaruh positif kemampuan berpikir kritis, disiplin belajar dan motivasi belajar terhadap kemandirian belajar by 32,5%

**Keywords:** Kemampuan Berpikir Kritis, Disiplin Belajar, Motivasi Belajar, Kemandirian Belajar.

## INTRODUCTION

In Indonesia, today's curriculum is the 2013 curriculum (K-13) which was applied to replace the 2006 curriculum. However, at the same time as the Covid-19 pandemic, the state gave schools the freedom to choose a learning method that was following the needs of learning implementation. In the 2013 curriculum, learning is carried out with student-centered learning (Student-Centered Learning), which places students no longer as objects of learning but as the study subject. Students are expected to be active and independent learners in their learning and are responsible for recognizing learning needs and finding learning resources. Therefore, students are required to be able to learn independently without depending on the teacher, especially when students have to take limited face-to-face learning, whereas when students are scheduled to take lessons from home, independence in learning becomes a significant factor. Independent learning must be improved so that learning objectives can be achieved.

According to Hidayat's research (Hidayat et al., 2020b), high school, vocational, and college students in Jakarta show that student learning independence during the pandemic is still low. The reason is that not all students are accustomed to online learning (Agus Purwanto et al., 2020). Learning independence is an important attitude for students during the learning

process. Without students' independence in learning, students' sense of responsibility is reduced, depending on teachers and friends when studying and making decisions.

Based on observations during the implementation of Educational Practices and the results of discussions with students and teacher, learning independence is one of the problems that occurs during distance learning because students have to study without direct guidance from the teacher. During the implementation of distance learning and limited face-to-face learning, accounting learning at SMK N 1 Pengasih is carried out via Whatsapp Group, Google meet, and Google Classroom, which requires students' awareness to take part in learning without being asked by the teacher. However, students often reasoned that they could not participate in learning and even did not do assignments for various reasons. When implementing face-to-face online learning, teachers usually use Google Meet to monitor and check the extent to which students understand the material.

In learning, it is important to apply discipline to train students to know their obligations and responsibilities as a student. Students who do not have a disciplined attitude in learning can have difficulty achieving their learning goals. Based on the results of the mini-research, student learning discipline is still lacking. This can be seen from the delay of students in collecting

assignments even though the teacher has given a time limit. Students' sense of responsibility and awareness in learning is still lacking, so the teacher must remind students to collect their assignments. Because there is no direct monitoring and interaction with the teacher, students became lazy in participating in learning using Whatsapp or Google Meet. Often students were late to join when learning with Google Meet because of forgetting, and the teacher cannot supervise student learning at home.

Motivation is one of the influential factors supporting student learning activities' success. Without motivation, the learning process will be difficult to achieve maximum success. On learning motivation, there was a lack of enthusiasm from students when answering the teacher's greetings and questions in the class Whatsapp group, there were some students who were not active in the group. Based on students' answers, they are often sleepy in class when the teacher uses the lecture method without any practice questions.

Based on these various problems, it is necessary to conduct research to determine the effect of critical thinking ability, learning discipline, and learning motivation on the student independent learning of class X Accounting and Financial Institution at SMK Negeri 1 Pengasih academic year 2021/2022.

## **LITERATURE REVIEW**

Hardi & Farida interpret learning independence as when a person learns with the encouragement of himself who is chosen and responsible for himself (Hidayat et al., 2020). Students who are independent in learning can be seen when they can do learning tasks without depending on others. Students who are independent in learning will be able to seek information based on their motivation to master the material (Nuritha & Tsurayya, 2021). Learning independence is the nature of individuals who are able to take the initiative, overcome problems and have self-confidence without requiring direction from others in carrying out learning activities.

Pilgrim (Pilgrim et al., 2019) in his research considers critical thinking ability as the ability to reflect, analyze and ask questions and see things from a different perspective. Sulistiani & Masrukan (Sulistiani & Masrukan, 2016) states that critical thinking is rational thinking about something, which is then collecting as much information as possible using examination or reasoning methods as the basis for making decisions about action. Susilawati (Susilowati et al., 2019) state that a student's critical thinking ability is developed through learning and assessment instruments that reflect critical thinking ability. Based on the above understanding, it can be concluded that critical thinking ability is a person's ability to think by analyzing, reflecting, applying, and

assessing a problem based on the information that has been obtained to make a decision.

Critical thinking ability is a person's ability to collect information, analyze, assess, and ask questions as a basis for making decisions to solve a problem. Designing and making learning strategies is a characteristic of student learning independence. Critical thinking ability is one of the characteristics of independent learning. If students have high critical thinking ability in solving a problem, the student will not depend on others and be able to work alone when facing difficult questions. When students have critical thinking ability, students will be able to learn independently and can increase activeness in learning. Thus, it is suspected that there is an effect between critical thinking ability and learning independence.

Discipline is an act that shows an attitude of obedience, orderly respect, and obeying applicable decisions, rules, and orders (Utami, 2021). Discipline is the ability of individuals to control themselves and not to take actions that are contrary to the agreed rules (Jainuddin; et al., 2020). Discipline is one of the characteristics that must be possessed by every individual, including in terms of learning. Learning discipline can also be defined as being obedient and obedient to the rules and being able to control oneself to always learn in order to achieve good results (Matussolikhah & Rosy, 2021).

Learning discipline is a student's obedient attitude to existing rules. With the discipline of learning, students will understand their duties and responsibilities so that awareness in students will arise without the need to be asked by others. Thus, it is suspected that there is an effect between learning discipline and learning independence.

In the implementation of learning, one of the determinants of student learning success is the existence of learning motivation. Learning motivation in students is an important factor in achieving learning success. Learning motivation, according to Monika & Adman (Monika & Adman, 2017), is explained as a driving force to carry out learning activities that come from within and outside the individual to foster a spirit of learning. Learning motivation can encourage students to achieve learning goals.

Learning motivation is a driving force to carry out learning activities that come from within and outside the individual to foster a spirit of learning. The existence of learning motivation can encourage students to achieve learning goals. By having high learning motivation, students will try to learn independently without any coercion from others.

Based on the theoretical study above, it can be seen that in learning activities, to be able to run independently without depending on teachers or parents, it is necessary to have the ability to think critically in reasoning and

use their abilities in learning. Learning discipline is needed so that students are aware of their obligations to succeed in their studies. Learning motivation is also necessary to encourage students to want to learn. High motivation will make students learn independently without having to be asked.

Thus, based on the description above, it is suspected that critical thinking ability, learning discipline, and learning motivation affect learning independence.

## RESEARCH METHOD

The research used in this research is ex post facto. “Ex post facto research is research that aims to find out the causes that allow changes in behaviour by an event, symptom, or phenomenon caused by an event, symptom, or phenomenon that results in changes in the independent variable after it occurs” (Widarto, 2013). This research was conducted at SMK N 1 Pengasih which is located at Jl. Kawijo No.11 Pengasih, Kulon Progo Yogyakarta. Research data collection was carried out in May-June 2022. The population in this study were students of SMK N 1 Pengasih. Class X Accounting and Financial Institution Competency, totaling 71 people. This study uses the entire existing population, so it is called population research.

The data collection stage is an essential phase in a study and will determine the

results of the study. In this study, the data collection technique used was a questionnaire. The instrument trial was conducted on students of SMK N 1 Samigaluh. SMK N 1 Samigaluh was chosen because it has the same criteria, namely using the same curriculum, expertise competency, and accreditation. The class chosen to be the respondents were students of class X Financial Accounting and SMK N 1 Samigaluh at the same level as the respondents in this study. The number of students who filled out the instrument trial questionnaire was 46 students. The result of the instrument trial was tested using Pearson Product Moment correlation. The result of the validity test. The results of the validity test can be seen in the table below:

Table 1. Result of Validity Test

Variable	Number of Initial Item	Number of Dropped Items	Number of Valid Items
Independent Learning	18	2	16
Critical Thinking Ability	18	3	15
Learning Discipline	24	2	22
Larning Motivation	18	2	16

Invalid statements have been omitted, and items deemed sufficient to represent each indicator so that they are still feasible to use.

The reliability test in this study uses the reliability coefficient of Cronbach's Alpha. Based on the results of the reliability test, the results of the reliability test calculations are obtained in the table as follows:

Table 2. Reliability Test Calculation Results

No	Variable	No. of Item	Koefisien Alpha Cronbach	Reliability
1.	Independent Learning	16	0,718	Reliable
2.	Critical Thinking Ability	15	0,716	Reliable
3.	Learning Disciplines	22	0,714	Reliable
4.	Learning Motivation	16	0,711	Reliable

## FINDINGS AND DISCUSSION

### Findings

#### A. Data Description

##### 1. Description of Critical Thinking Ability Variable ( $X_1$ )

The data in this variable was obtained through a questionnaire consisting of 15 statements. The categories of critical thinking ability variable are as follows:

Table 3. Score Categories of Critical Thinking Ability Variable

No	Score range	Category
1	$X \geq 48$	Very High
2	$44 \leq X < 48$	High
3	$38 \leq X < 44$	Low
4	$X < 38$	Very Low

Based on the calculations, the criteria for the tendency of the critical thinking ability variable as follows:

Table 4. Trend of Critical Thinking Ability Variable

No	Category	Freq.	Percent %
1	Very High	6	8,45
2	High	20	28,16
3	Low	36	50,70
4	Very Low	9	12,67
		71	100,00%

The distribution table above shows the tendency of the variable of critical thinking ability to learn to be in a low category. This tendency is shown by the number of respondents who answered the most in the low category with a learning independence score between 38 to 43, namely 36 students (50,70%). Then the number of students

who answered in the very high category with a score range of more than equal to 48 were 6 students (8,45%), in the high category with a score between 44 to 47, as many as 20 students (28,16) and in the very low category in the range score less than 38 as many as 9 students (12,67%).

## 2. Description of Learning Discipline Variables (X<sub>2</sub>)

The data in this variable was obtained through a questionnaire consisting of 22 statements. The score categories of learning discipline variables are as follows:

Table 5. Score Categories of Learning Discipline Variable

No	Score range	Category
1	$X \geq 73$	Very High
2	$68 \leq X < 73$	High
3	$63 \leq X < 68$	Low
4	$X < 63$	Very Low

Based on the calculations, the criteria for the tendency of the learning discipline variable are as follows:

Table 6. Trend of Learning Discipline Variable

No	Category	Freq.	Percent %
1	Very High	18	25,35
2	High	21	29,57
3	Low	18	25,35
4	Very Low	14	19,71
		71	100,00%

The distribution table above shows the tendency of the learning discipline variable to be in the high category. This tendency is shown by the number of respondents who answered the most in the high category with a learning discipline score between 68 to 72, namely as many as 21 students (29,57%). Then the number of students who answered in the very high category with a score range of more than equal to 73 were 14 students (25,35%), the low category with a score between 63 to 67 was 18 students (25,35) and in the very low category in the range score less than 63 as many as 14 students (19,71%).

## 3. Description of Learning Motivation Variable (X<sub>3</sub>)

The data in this variable was obtained through a questionnaire consisting of 16 statements. The score categories of learning motivation variables are as follows:

Table 7. Score Categories of Learning Motivation

No	Score Range	Category
1	$X \geq 52$	Very High
2	$48 \leq X < 52$	High
3	$44 \leq X < 48$	Low
4	$X < 44$	Very Low

Based on the calculations, the criteria for the tendency of the learning motivation variable are as follows:

Table 8. Trend of Learning Motivation Variable

No	Category	Freq.	Percent (%)
1	Very High	20	28,16
2	High	17	23,94
3	Low	23	32,39
4	Very Low	6	8,45
		71	100,00%

The distribution table above shows the tendency of the learning motivation variable to be in a low category. This tendency is shown by the number of respondents who answered the most in the very low category with a learning motivation score between 44 to 47, namely 23 students (32,39%). Then the number of

students who answered in the very high category with a score range of more than equal to 52 was 20 students (20,16%), the high category with scores between 48 to 51 were 17 students (23,94%), and in the very low category at score range less than 44 as many as 6 students (8,45%).

#### 4. Description of Independent Learning Variable (Y)

The data in this variable was obtained through a questionnaire consisting of 16 statements. The score categories of the learning independence variable are as follows:

Table 9. Score Categories of Independent Learning

No	Score range	Category
1	$X \geq 49$	Very High
2	$45 \leq X < 49$	High
3	$41 \leq X < 45$	Low
4	$X < 41$	Very Low

Based on the calculations, the criteria for the tendency of the independent learning variable are as follows:



Table 10. Trend of Independent Learning Variable

No	Category	Freq.	Percent (%)
1	Very High	13	18,30
2	High	14	19,44
3	Low	24	33,80
4	Very Low	20	28,16
		71	100,00%

## B. Analysis Prerequisite Test

### Normality Test

A normality test is conducted to test whether the data is normally distributed or not. To test the normality of the data using the Kolmogorov-Smirnov and Asymp methods. Sig. (2-tailed). The normality of the data can be met if the significance obtained is  $> 0,05$  or  $0,05$ . If the significance value is below 5% or  $0,05$ , then the data is not normally distributed. The results of the normality test show the Asymp value. Sig. of  $0,200$  means more than  $0,05$ , so it can be concluded that the residual value is normally distributed.

### Linearity Test

A linearity test was conducted to determine whether the independent variables Critical thinking ability, learning discipline, and learning motivation have a linear relationship to learning independence. The result of linearity test, all the variables are linear.

## Heteroscedasticity Test

A heteroscedasticity test is performed to test whether residual variance inequality of observations in the regression model occurs in other observations. This study used the Glejser test in conducting the heteroscedasticity test. If the significance value is more than  $0,05$ , then it can be concluded that there is no heteroscedasticity. And based on the result, all the variables shows that there were no heteroschedasticity.

## Multicollinearity Test

Multicollinearity test was used for the prerequisites for regression testing. The multicollinearity test aims to search for a correlation between the variables of critical thinking ability, learning discipline, learning motivation, and learning independence. The summary of the test result shows that there were no multicollinearity.

## C. Analysis Results

### First Hypothesis Result

Table 7. First Hypothesis Test Results

Constant	Unstrandardized Coefficient	r	r <sup>2</sup>
19,837	0,560	0,473	0,223

Based on the table above, the regression line equation is stated as follows:

$$Y = 0,560X_1 + 19,837$$

The equation above shows that the constant is 19,837, which means that the consistent value of the critical thinking ability variable is 19,837. The X regression coefficient of 0,560 indicates that for every 1 addition to the value of critical thinking ability, the value of learning independence will increase by 0,560. The table of the regression analysis above shows that the value of the correlation coefficient ( $r_{x_1y}$ ) is 0,473. Based on the first regression analysis table, it is known that critical thinking ability has an effect of 22,3% on learning independence, and 77,7% is influenced by other factors or variables.

### Second Hypothesis Test

Table 8. Second Hypothesis Test Results

<i>Constant</i>	<i>Unstandardized Coefficient</i>	r	r <sup>2</sup>
16,967	0,389	0,500	0,250

Based on the table above, the regression line equation is stated as follows:

$$Y = 0,389X_2 + 16,967$$

The equation above shows that the constant is 16,967, which means that the

consistent value of the critical thinking ability variable is 16,967. The X regression coefficient of 0,389 indicates that for every 1 addition to the value of critical thinking ability, the value of learning independence will increase by 0,389. The table of results of the regression analysis above shows that the value of the correlation coefficient ( $r_{x_2y}$ ) is 0.500. Based on the first regression analysis table, it is known that the ability of learning discipline has an effect of 25% on learning independence, and 75% is influenced by other factors or variables.

### Third Hypothesis Result

Table 9. Third Hypothesis Test Results

<i>Constant</i>	<i>Unstandardized Coefficient</i>	r	r <sup>2</sup>
16,540	0,550	0,511	0,261

Based on the table above, the regression line equation is stated as follows:

$$Y = 0,550X_3 + 16,540$$

The equation above shows that the constant is 16,540, which means that the consistent value of the critical thinking ability variable is 16,540. The X regression coefficient of 0,550 indicates that for every 1 addition to the value of critical thinking ability, the value of learning independence will increase by 0,550. The table of results of the

regression analysis above, shows that the value of the correlation coefficient ( $r_{x_3y}$ ) is 0.511. Based on the first regression analysis table, it is known that critical thinking ability has an effect of 26.1% on learning independence, and other factors or variables influence 73.9%.

#### Fourth Hypothesis Test

Table 10. The Result of the Fourth Hypothesis Test

Var.	Const	Unstandardized Coefficient	r	r <sup>2</sup>
X <sub>1</sub>	9,454	0,221	0,570	0,325
X <sub>2</sub>		0,150		
X <sub>3</sub>		0,295		

Based on the table above, the regression line equation can be expressed in the following equation:

$$Y = 0,221X_1 + 0,150X_2 + 0,295X_3 + 9,454$$

The equation above shows that the regression coefficient value of X<sub>1</sub> is 0,221, indicating that if the value of critical thinking ability increases by one unit, the value of learning independence (Y) will increase by 0,221 with the assumption that X<sub>2</sub> and X<sub>3</sub> remain. The X<sub>2</sub> regression coefficient is 0,150, which means that if the value of learning discipline increases by one unit, the value of learning independence will increase by

0,150 points with the assumption that X<sub>1</sub> and X<sub>3</sub> remain. The results of the regression analysis showed a coefficient of determination of 0,325, which illustrates that 32,25% of changes in learning independence (Y) can be explained by the variables of critical thinking ability (X<sub>1</sub>) and learning discipline (X<sub>2</sub>), and learning motivation (X<sub>3</sub>).

## Discussion

### 1. The effect of critical thinking ability on independent learning

Based on the simple regression results, the regression coefficient value is positive at 0,560, which means that if the value of critical thinking ability increases by one unit, the learning independence will increase by 0,560 units. Then the value of the correlation coefficient ( $r_{x_1y}$ ) is 0,473, which is positive, then the critical thinking ability variable has a positive effect on learning independence. The results of the significance test with the t-test showed a tcount of 4,4455, which was consulted with the value of ttable at a significance level of 5%, which was 1,996, then tcount > ttable (4,4455 > 1,996) so that the critical thinking ability variable affected learning independence.

The value of the determinant ( $r^2_{x_1y}$ ) in the regression analysis obtained the result of 0,223, which means that the ability to

think critically has an effect of 22,3% on learning independence. From the description above, it can be concluded that the ability to think critically has a positive and significant effect of 22,3% on the learning independence of students class X Accounting and Financial Institution at SMK N 1 Pengasih SMK N 1 Pengasih. Students who have high critical thinking ability will try to solve the learning problems they face. To improve critical thinking ability, teachers can use learning methods that can hone problem-solving skills.

This research is in line with research by Samuel Tri Susetyo Parwoto (2013) with the title "The effect of Thinking Ability, Learning Style and Adaptation Ability to Independent Learning of Students at SMK N 3 Yogyakarta". The results showed that there was a positive effect of critical thinking skills on learning independence as indicated by the results of the t-test analysis, the results of the first hypothesis testing were  $t_{count} = 8.111 > t_{table} = 1.991$  with a significance of  $0.000 < 0.05$ . From these results, it can be concluded that the ability to think critically has a positive effect on the learning independence of class XI students of electrical power installation engineering competence at SMK N 3 Yogyakarta.

Thus it can be seen that the ability to think critically positively affects learning independence. This is in line with Phan's opinion (Phan, 2010) that critical thinking as a cognitive practice helps develop one's learning independence. By having the ability to think critically, one can solve problems without depending on others.

## 2. The effect of learning discipline on independent learning

Based on the results of a simple regression, the value of the regression coefficient is positive at 0,389, which means that if the value of learning discipline increases by one unit, learning independence increases by 0,389 units. Then the value of the correlation coefficient ( $r_{xly}$ ) of 0,500 is positive, the learning discipline variable has a positive effect on learning independence. The results of the significance test with the t-test showed  $t_{count}$  of 4,795, which was consulted with the value of  $t_{table}$  at a significance level of 5%, which was 1,996, then  $t_{count} > t_{table}$  ( $4,795 > 1,996$ ) so that the learning discipline variable had an effect on learning independence.

The value of the determinant ( $r^2_{x2y}$ ) in the regression analysis obtained the result of 0.250, meaning that learning discipline affects 25% on learning independence. From the description above, it can be concluded that learning discipline has a positive and significant effect of 25% on

the learning independence of students class X Accounting and Financial Institution at SMK N 1 Pengasih SMK N 1 Pengasih.

This research is in line with Levina Dwi Kemalasari's research in 2018 with the title "The Effect of Motivation and Discipline on Independent Learning of Economics among High School Students". The results of this study indicate that the learning discipline variable can be t test  $6.106 > 1.66$  so that the results of the analysis can be proven that learning discipline has an effect on learning independence. So it can be concluded that learning discipline affects the independence of learning economics lessons among high school students.

Based on the description above, it can be seen that learning discipline has an effect on student learning independence. This is in line with Munadi's opinion (Educhannel.id, 2021) that discipline in complying with applicable rules, being aware of rights and obligations, traffic safety, and carrying out obligations is one of the internal factors that fosters one's learning independence. Students who have high learning discipline will have self-awareness to understand their responsibilities as students and can control themselves. With this awareness, students do not need to be reminded to study both

at home and at school so that students will be independent in learning.

### 3. The effect of learning motivation on learning independence

Based on the results of a simple regression, the regression coefficient value is positive at 0,550, which means that if the learning value increases by one unit, the learning independence increases by 0,550 units. Then the value of the correlation coefficient ( $r_{x1y}$ ) of 0,511, which is positive, then the learning motivation variable has a positive effect on learning independence. The results of the significance test with the t-test showed tcount of 4,942, which was consulted with the value of ttable at a significance level of 5%, which was 1,996, then  $t_{count} > t_{table}$  ( $4,942 > 1,996$ ) so that the learning motivation variable had an effect on learning independence.

The value of the determinant ( $r^2_{x3y}$ ) in the regression analysis obtained the result of 0,261, which means that learning motivation has an effect of 26,1% on learning independence. From the description above, it can be concluded that learning motivation has a positive and significant effect of 26,1% on the learning independence of students class X Accounting and Financial Institution at SMK N 1 Pengasih SMK N 1 Pengasih. Learning motivation is the impetus that drives individuals to achieve their learning

goals. With high learning motivation, a student will be willing to learn without coercion from others, so that which will encourage the emergence of independent learning.

This study is in line with research by Vika Noviana Safitri (2021) with the title "The Effect of Creativity and Motivation on Learning Independence of Grade X Students at Christian High School." The results showed an effect of learning motivation on learning independence. on learning independence has a positive and significant effect because  $t_{table} = 1,960$  and  $t_{count} = 3,266$  so  $t_{count} > t_{table}$ . Thus, it can be concluded that learning discipline affects the independence of learning economics among high school students.

Based on the explanation above, it can be seen that learning discipline affects learning independence. This is in line with Djaali's opinion (Djaali, 2017) that motivation is an internal factor in forming independent learning. To achieve learning independence, students must have learning independence (Nurhayati, 2011).

#### 4. The effect of critical thinking ability, learning discipline, and learning motivation on learning independence

The results of this study indicate that there is a positive influence on students' independence on critical thinking skills, learning discipline, and learning

motivation. The analysis results using multiple regression and the correlation coefficient  $R_{y(1,2,3)}$  is 0,570, and the coefficient of determination  $R^2_{y(1,2,3)}$  is 0,325. These results mean that the influence of critical thinking, learning discipline, and learning motivation on learning independence is 32.5%, then 67.5% is influenced by other factors not examined in this study. Based on the F test, the results obtained by the  $F_{count}$  value of 10,744 while  $F_{table}$  at the 5% significance level is 2.7416, then  $F_{count} > F_{table}$  ( $10,744 > 2,7416$ ) so that critical thinking skills (X1), learning discipline (X2) and motivation learning (X3) has a significant effect on learning independence (Y), so it can be concluded that there is a positive and significant influence on critical thinking skills, learning discipline, and learning motivation on student learning independence.

Based on the data from multiple regression, the critical thinking ability gives a relative contribution of 27,44%, the learning discipline variable is 30,03%, and the learning motivation variable is 32,50%. The practical contribution of the critical thinking ability variable is 8,91%, learning discipline is 9,78%, and learning motivation is 10,56%.

The results of the analysis are reinforced by the theory from Sriyono

(Sriyono, 2015) that the factors that influence learning independence consist of internal and external factors. Critical thinking skills, learning discipline, and learning motivation are factors within a person that can increase student learning independence. Based on this explanation, it can be concluded that there is a positive influence on critical thinking skills, learning discipline and learning motivation together on independent learning.

## CONCLUSIONS AND SUGGESTIONS

### Conclusions

Based on the description of the discussion above, the following conclusions can be drawn:

1. Critical thinking ability positively affects the learning independence of students in class X Accounting and Financial Institution at SMK N 1 Pengasih by 22.3%. The positive effect is shown by the correlation value of 0.473.
2. Learning discipline positively affects students' learning independence in class X Accounting and Financial Institution at SMK N 1 Pengasih SMK N 1 Pengasih by 25%. The positive effect is shown by the correlation value of 0.500.
3. There is a positive effect of learning discipline on the learning independence of

students in class X Accounting and Financial Institution at SMK N 1 Pengasih SMK N 1 Pengasih by 26.1%. The positive effect is shown by the correlation value of 0.511.

4. Critical thinking ability, learning discipline, and learning motivation positively affect the learning of students class X Accounting and Financial Institution at SMK N 1 Pengasih SMK N 1 Pengasih by 32.25%. The positive effect is shown by the correlation value of 0.570.

### Suggestions

Based on the results of the study and the conclusions obtained, the following suggestions can be given:

1. For students
  - a. Students are expected to hone and develop critical thinking ability so that in dealing with a problem, students can try to solve and find additional information to be able to solve the problem. In attempting to find additional information either through books or the internet independently, students will not depend on teachers or others when they encounter problems.
  - b. Students are expected to have the discipline of learning by doing school assignments on time without being reminded again by the teacher. When in class, students should focus on paying

attention to instructions from the teacher and put aside playing with cell phones.

- c. Students are expected to motivate themselves to study harder in learning without the need for coercion from others. Students can get used to studying every day and doing school assignments without delaying and managing their study schedules.
2. For Teachers
- a. To improve students' critical thinking ability, teachers can apply learning methods to hone problem-solving skills. Teachers can provide stimuli that can provoke students to think critically.
  - b. Teachers are expected to provide motivational encouragement for students before starting learning to increase student enthusiasm.

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