

THE EFFECT OF INDEPENDENT LEARNING ON CRITICAL THINKING SKILLS MEDIATED BY LEARNING MOTIVATION IN ONLINE LEARNING DURING A PANDEMIC

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Abstract

This research aims to determine the effect of independent learning on critical thinking skills mediated by learning motivation in students of the Faculty of Social Sciences, State University of Jakarta 2018. This study uses a descriptive quantitative approach with a survey method. The population in this study amounted to 767 students and the sample in this study was 332 students. The respondent selection technique used proportional random sampling, namely using the proportional random method. In data management, the researcher processed the questionnaire using a Likert scale. The variables of Critical Thinking Ability, Learning Independence, and Learning Motivation are data. The results showed that learning independence had an effect on critical thinking skills with learning motivation as a mediation between the two.

Abstrak

Penelitian ini bertujuan untuk mengetahui terdapat pengaruh antara kemandirian belajar terhadap kemampuan berpikir kritis dimediasi oleh motivasi belajar pada mahasiswa Fakultas Ilmu Sosial Universitas Negeri Jakarta 2018. Penelitian ini menggunakan pendekatan deskriptif kuantitatif dengan metode survei. Populasi pada penelitian ini berjumlah 767 mahasiswa dan sampel pada penelitian ini adalah 332 mahasiswa. Teknik pemilihan responden menggunakan proportional random sampling, yaitu menggunakan metode acak proporsional. Pengelolaan data, peneliti mengolah kuesioner dengan menggunakan skala likert. Variabel Kemampuan Berpikir Kritis, Kemandirian Belajar, dan Motivasi Belajar merupakan data. Hasil penelitian menunjukkan kemandirian belajar berpengaruh terhadap kemampuan berpikir kritis dengan motivasi belajar sebagai mediasi diantara keduanya

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INTRODUCTION

Education is an important aspect of human life and cannot be separated from life since childhood. This can be seen from the non-formal education and formal education that we must have received and instilled from childhood to adulthood. According to the Law of the Republic of Indonesia No. 20 of 2003 article 1 paragraph 1 concerning the National Education System SISDIKNAS (2003) states that: "Education is a conscious and planned effort to liven up the learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by himself and the community, nation and state." (Nasional, 1982).

The ability to think critically in social studies learning is a situation where students not only have knowledge of Social Sciences but also have the ability to solve a problem in the social environment. This causes learning to go directly to the environment by interacting with other people is very effective in developing students' thinking skills. However, online learning which is forced to be done independently at home due to Covid-19 makes students' critical thinking skills in learning Social Sciences low. Because learning that occurs generally is only a process of transferring knowledge from teacher to student without actively involving students and without directing or encouraging students to go directly to see how things are factually in the social environment.

Based on these problems, the researchers conducted a pre-research on changes in ability or understanding felt by students of the Faculty of Social Sciences, State University of Jakarta, which obtained the following results:

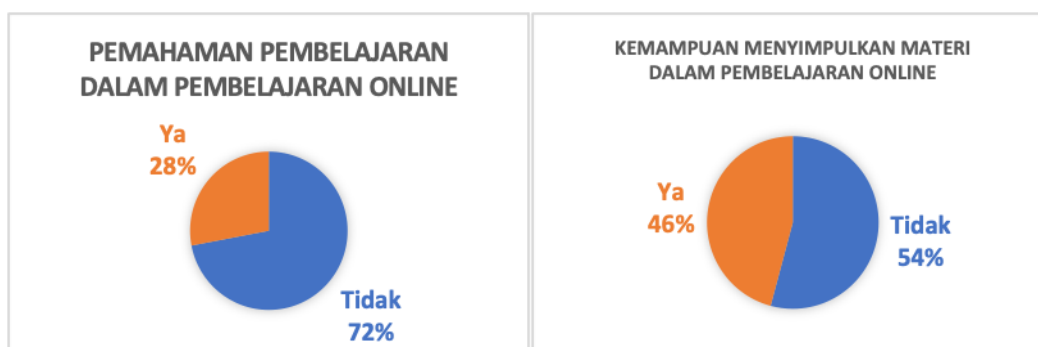


Figure 1.1 Results of Pre-Research Online Learning

Source: Data Processed by Researchers (2021)

It can be concluded from the statement "Are you able to understand well the learning that the lecturer provides in online learning? (YES/NO) please explain!" The results showed that 72% of students felt unable to understand well the learning materials taught online because there were many obstacles in technical learning and because they could not focus more on learning because they did not meet face-to-face. In terms of students' ability in concluding the discussion material, 54% stated that they were unable to conclude online learning material because they did not listen or did not understand due to the obstacles they faced when learning online.

Then the researchers conducted a pre-research on critical thinking skills to 30 students of the Faculty of Social Sciences, State University of Jakarta, who got the following results:



Figure 1.2 Pre-Research Results of Critical Thinking Ability

Source: Data Processed by Researchers (2021)

This is indicated by the results of pre-research conducted by the researchers found that the behavior that shows aspects of critical thinking skills is low. Critical thinking ability can be seen from how students interpret, analyze, evaluate, infer, provide explanations, and regulate themselves. In terms of inference, it can be seen that the ability of students to write and re-explain lessons that have been learned during online learning during a pandemic is relatively low with a figure of 34%, this indicates that the ability of students to interpret the knowledge provided is low. Based on the results of the pre-research that the researchers have done, the researchers are interested in conducting research with the title "The Effect of Independent Learning on Critical Thinking Skills Mediated by Learning Motivation in Online Learning During a Pandemic"

BACKGROUND OF THEORY

Critical Thinking Skills

According to Mulyati (2020) "Critical thinking is an indispensable skill that can be used to deal with situations or challenges that hang in life. Apart from thinking critically, students also have creativity in facing challenges and society." According to Chen (2020) "Critical thinking is an intellectual process that is required for a person to store, reflect on, make reports, apply knowledge, analyze or assess". According to Sutiani (2021) "Critical thinking skills include scientific activities such as asking questions, making statements, choosing the right choice, and making decisions". According to experts and research above, critical thinking ability is a cognitive ability or higher order thinking that involves the process of scientific activities such as asking questions, making statements, choosing the right choice, and drawing conclusions.

Independent Learning

According to Chau (2010) "Self Regulated learning is understood as learning which uses interactive process to regulate their own learnings." According to Maliya (2019), "independence of learning as the ability to monitor one's own behavior, and is the independence of human personality". According to Rohmah (2017) Learning independence is defined as the willingness that has been attached to oneself to learn the material to be studied without the help of others. This is in line with the meaning of *kara* independently by itself, students must rely on themselves in the learning process. Based on the experts

and the research above, it can be concluded that independent learning is learning that is carried out with the initiative or willingness of students to learn by utilizing the potential that exists around students. In this case, students also play a full role in regulating their learning by utilizing learning resources and determining appropriate strategies and evaluating learning to master in-depth learning concepts.

Learning Motivation

According to Agus Rahmad Timor (2021) "Learning motivation is one of the factors of students' success in achieving maximum learning outcomes. Students who are highly motivated to learn will be better at receiving lessons, and the attitudes caused by students will become more positive in learning". According to Darmayanti & Sueca (2020) learning motivation is encouragement or enthusiasm both from others and from yourself in learning to achieve what you want. According to Syafii (2021) "Motivation to learn is a change in energy within a person (person) which is marked by the emergence of feelings and reactions to achieve goals". Based on the experts and the research above, it can be concluded that learning motivation is an encouragement that arises from both internal and external which is felt by students in learning to achieve the desired learning goals or outcomes.

METHOD

This study uses a descriptive quantitative approach with a survey method. The population in this study amounted to 767 students and the sample in this study was 332 students. The respondent selection technique used proportional random sampling, namely using the proportional random method. In data management, the researcher processed the questionnaire using a Likert scale. The variables of Critical Thinking Ability (Y), Learning Independence (X1), and Learning Motivation (X2) are data.

In testing this research using analytical techniques with the Partial Least Square (PLS) method. This research uses causal modeling or relationship and influence, or it can also be called path analysis. In testing the hypothesis that will be proposed using the Structural Equation Modeling (SEM) model fit analysis technique which is operated using Smart PLS 3.0.

RESULTS AND DISCUSSIONS

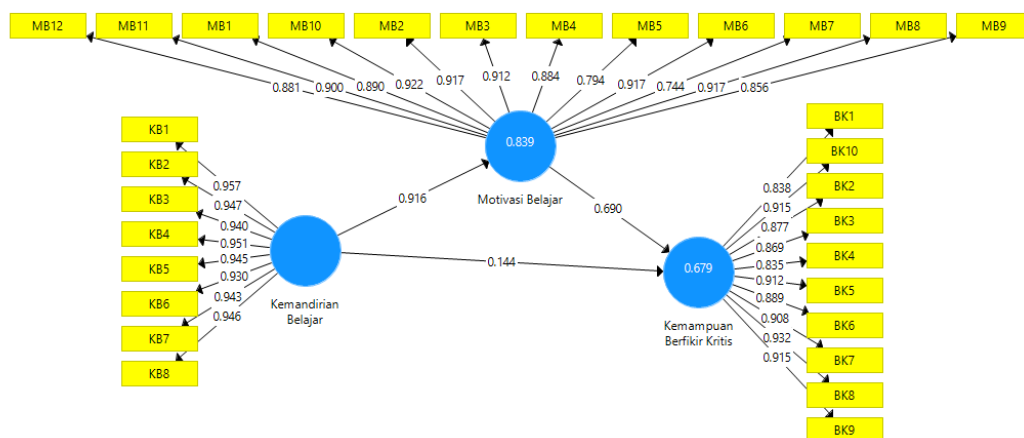


Figure 4.5 Analysis of the Outer Model

The tests carried out on the outer model are Convergent validity, discriminant

validity, composite reliability, average variance extracted (AVE), and Cronbach Alpha. In interpreting the results of data analysis from SmartPLS 3, the researcher refers to the module compiled by (Hussein, 2015).

	Kemampuan Berfikir Kritis	Kemandirian Belajar	Motivasi Belajar
BK1	0,838		
BK10	0,915		
BK2	0,877		
BK3	0,869		
BK4	0,835		
BK5	0,912		
BK6	0,889		
BK7	0,908		
BK8	0,932		
BK9	0,915		
KB1		0,957	
KB2		0,947	
KB3		0,940	
KB4		0,951	
KB5		0,945	
KB6		0,930	
KB7		0,943	
KB8		0,946	
MB1			0,890
MB10			0,922
MB11			0,900
MB12			0,881
MB2			0,917
MB3			0,912
MB4			0,884
MB5			0,794
MB6			0,917
MB7			0,744
MB8			0,917
MB9			0,856

Based on the results of the outer loading factor which can be seen in table 4.7, it can be concluded that the overall indicators of the construct of critical thinking ability (BK), learning independence (KB), learning motivation (MB) have a value > 0.7, so the indicators of all variables meet the requirements validity.

Table 4.8 Cronbach's Alpha

	Cronbach's Alpha
Kemampuan Berpikir Kritis	0,971
Kemandirian Belajar	0,983
Motivasi Belajar	0,973

In table 4.8 it can be seen that the Cronbach alpha value for the critical thinking ability variable is 0.971; learning independence is 0.983 and learning motivation is 0.73 The value of all indicators on the variables of critical thinking ability, learning independence, and

learning motivation > 0.6, it can be concluded that all constructs in this research variable are said to be valid.

Table 4.9 Composite Reliability and Average Variance Extracted

	Composite Reliability	Average Variance Extracted (AVE)
Kemampuan Berpikir Kritis	0,974	0,791
Kemandirian Belajar	0,985	0,893
Motivasi Belajar	0,976	0,773

The results of the composite reliability test table IV.9 show that the composite reliability value of all variables has a value > 0.7, so all constructs in this study are declared reliable. Meanwhile, the AVE value for each variable in this study is quite varied. The AVE value of critical thinking ability is 0.791; learning independence 0.893; and learning motivation is 0.773. All AVE values in this study are > 0.5. Based on table IV.6 it can be concluded that all constructs in this research variable are reliable.

Table 4.11 R-Square (R2)

	R Square
Kemampuan Berpikir Kritis	0,679
Motivasi Belajar	0,839

Based on the R-Square (R2) table above, it can be described as follows:

- R-Square path model I = 0.679, meaning that the ability to construct learning independence variables in explaining critical thinking skills is 0.679 or 68% in rounding (moderate).
- R-Square path II model = 0.839, meaning that the ability to construct learning independence variables in explaining learning motivation is 0.839 or 84% in rounding (strong).
- It can be concluded that independent learning has a relationship with critical thinking skills and in the second path, independent learning has a greater relationship with learning motivation as a mediator.

Table 4.12 f-square (f2)

	Kemampuan Berfikir Kritis	Kemandirian Belajar	Motivasi Belajar
Kemampuan Berpikir Kritis			
Kemandirian Belajar	2,517		5,229
Motivasi Belajar	0,239		

From the table above, it can be concluded as follows:

- The relationship between the variable construct of learning independence and the construct of learning motivation is 5,229 which means that both have a strong relationship
- The relationship between the construct of the learning independence variable and the critical thinking ability construct is 2,517, which means that both have a strong relationship
- The relationship between the variable construct of learning motivation and the construct of critical thinking ability is 0.239, which means that both have a moderate relationship.

Table 4.14 Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Kemandirian Belajar -> Kemampuan Berfikir Kritis	0,216	0,214	0,085	2,554	0,011
Kemandirian Belajar -> Motivasi Belajar	0,916	0,917	0,018	52,153	0,000
Motivasi Belajar -> Kemampuan Berfikir Kritis	0,690	0,689	0,131	5,263	0,000

H1: Independent Learning has a Direct Effect on Critical Thinking Ability

Based on the results of the path coefficient test in the table above, the variable of learning independence has a direct effect on critical thinking skills, which can be seen from the original sample value of 0.216 and t-statistic > 1.96 which is 2.554. Then, based on the p-values, namely 0.011 < 0.05. So it can be concluded that learning independence has a direct effect on critical thinking skills directly, so H1 in this study is accepted.

H2: Independent Learning has a Direct Effect on Learning Motivation

Based on the results of the path coefficient test in the table above, the perceived convenience variable has a direct effect on attitudes towards use, which can be seen from the original sample value of 0.916 and t-statistic > 1.96, which is 52.153. Then, based on the p-values, namely 0.000 < 0.05. So it can be concluded that learning independence has a direct effect on learning motivation directly, so H2 in this study is accepted.

H3 : Learning Motivation Directly Affects Critical Thinking Ability

Based on the results of the path coefficient test in the table above, the perceived usefulness variable has a direct effect on intention to use it directly, it can be seen from the original sample value of 0.690 and t-statistic > 1.96 which is 5.263. Then, based on the p-values, namely 0.000 < 0.05. So it can be concluded that learning motivation has a direct effect on critical thinking skills directly, so H3 in this study is accepted.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Kemandirian Belajar -> Motivasi Belajar -> Kemampuan Berfikir Kritis	0,632	0,632	0,124	5,110	0,000

H4 : Learning Motivation Mediates Independent Learning Against Critical Thinking Ability Indirectly

Based on the results of the calculations in the indirect effect table above, the independent learning variable affects critical thinking skills with learning motivation as a mediator between the two. The original sample value of the influence of these three variables is 0.632 and the t-statistic is $5.110 > 1.96$. Then, based on p-values $0.000 < 0.05$. So it can be concluded that the independent learning variable has an indirect effect on critical thinking skills with learning motivation as a mediation, therefore H4 in this study is accepted.

CONCLUSION

The results of the study show that learning independence for students of the 2018 Faculty of Social Sciences UNJ has a positive and significant effect on critical thinking skills through learning motivation as a mediation. The results of this study are in accordance with previous research by Setiaji (2021), Fajriaturrohmah (2019), Muktiningsih (2020) which stated that there was a positive and significant influence between learning independence on critical thinking skills mediated by learning motivation.

Critical thinking skills will be formed if students actively participate in learning or in other words can carry out their learning independently, where learning independence is closely related to learning motivation. It can be concluded that high learning independence will produce high critical thinking skills as well, but to create high learning independence requires high learning motivation from students. So with that it can be said that learning independence affects critical thinking skills which are influenced indirectly by learning motivation

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