JURNAL PENDIDIKAN EKONOMI, PERKANTORAN DAN AKUNTANSI
http://pub.unj.ac.id/index.php/jpepa

THE INFLUENCE OF LEARNING MEDIA AND LEARNING MOTIVATION ON CRITICAL THINKING ABILITY OF FE UNJ STUDENTS

Khosyatillah Musfikhuna[1], Ryna Parlyna[2], Nadya Fadillah Fidhyallah[3]

[1] *Universitas Negeri Jakarta, Indonesia*
[2] *Universitas Negeri Jakarta, Indonesia*
[3] *Universitas Negeri Jakarta, Indonesia*

Article Info

Article history:
Received: 6 Agustus 2021
Accepted:
Published: 18 Desember 2021

Keywords:
Learning Media, Learning Motivation, Critical Thinking Skills

Abstract

This study aims to determine the effect of learning media in the form of audio-visual and learning motivation on critical thinking skills. This research was conducted for six months starting from January 2021 to July 2021. The method used in this study is a quantitative method through a surveys by distributing questionnaires to respondents which is carried out online via Google Form. The population in this study were students of the Faculty of Economics, State University of Jakarta, and the samples taken were active students of the Faculty of Economics, State University of Jakarta, class of 2017 and 2018 who had or were using audio-visual learning media. The sampling technique used was purposive sampling as many as 243 respondents. While the analysis technique in this study uses simple linear regression. The results of this study are in accordance with the hypothesis that has been formulated that: There is a positive and significant influence of learning media on critical thinking skills. There is a positive and significant influence between learning motivation on critical thinking skills.

Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh media pembelajaran berupa audio visual dan motivasi belajar terhadap kemampuan berpikir kritis. Penelitian ini dilakukan selama enam bulan terhitung sejak bulan Januari 2021 sampai Juli 2021. Metode yang digunakan dalam penelitian ini adalah metode kuantitatif melalui survei dengan menyebarkan kuesioner kepada responden yang dilakukan secara daring melalui Google Form. Populasi pada penelitian ini adalah Mahasiswa Fakultas Ekonomi Universitas Negeri Jakarta, dan sampel yang diambil adalah Mahasiswa aktif Fakultas Ekonomi Universitas Negeri Jakarta angkatan 2017 dan 2018 yang pernah atau sedang menggunakan media pembelajaran audio visual. Teknik pengambilan sampel yang digunakan adalah purposive sampling sebanyak 243 responden. Sedangkan teknik analisis pada penelitian ini menggunakan regresi linear sederhana. Hasil penelitian ini sesuai dengan hipotesis yang sudah dirumuskan bahwa: Terdapat pengaruh media pembelajaran terhadap kemampuan berpikir kritis secara positif dan signifikan. Terdapat pengaruh antara motivasi belajar terhadap kemampuan berpikir kritis secara positif dan signifikan.

How To Cite :

* Corresponding Author.
kmusfikhuna@gmail.com Khosyatillah Musfikhuna

ISSN
2302-2663 (online)
DOI: doi.org/10.21009/JPEPA.007

INTRODUCTION

Education today is very important as one of the steps taken to advance a nation, because education is able to develop capabilities and shape the character and civilization of a dignified nation in order to educate the life of the nation itself. To create a quality education, quality resources are also needed. On the other hand, the failure of an education is one of the reasons for the lack of qualified and competent human resources in supporting the success and goals of education.

In the 21st century the improvement and development of the quality of human resources continues to be carried out in all fields, as well as the improvement of human resources in the field of education focused on high-level thinking skills or critical thinking. Critical thinking skills are needed and must be prepared for students in this century at all levels of education to be able to respond to the demands of an era that continues to develop and be competitive. The ability to think critically is one of the demands for graduates today, because critical thinking is a decision-making process to solve problems in everyday problems which are also included in higher-order thinking skills.

The ability to think critically is also one of the abilities that need to be mastered by future generations in the face of the industrial era 4.0. The following are the results of the Program for International Student Assessment (PISA) survey in 2018:

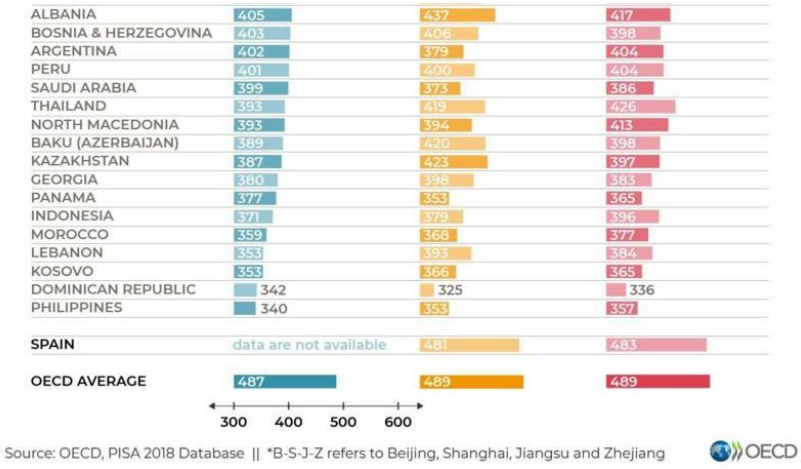

Figure 1 PISA research results (2018)

Source: BBC News (2019)

Based on Figure 1 above, Indonesia is ranked 72 out of 77 countries above Morocco, Lebanon, Kosovo, Dominican Republic, and in the last place is the Philippines. In fact, among the weaknesses of the Indonesian education system are students who are not trained in critical thinking during the learning process.

Efforts that can be made so that students have critical thinking skills are to choose and apply appropriate learning strategies, so that the learning process takes place optimally and is able to develop critical thinking skills so as to allow the

emergence of bright ideas in students in the learning process (Wahyuni et al., 2018).

Many factors affect students' critical thinking skills, one of the factors that can affect students' critical thinking skills is audio-visual learning media. Audio visual learning media is used in learning, because the learning media is interesting, and can convey learning material to students by displaying audio (sound) and visuals (images) simultaneously which this learning media has better and more effective abilities because of the characteristics of sound and images compared to other media (Lestari et al., 2017).

Another factor that can affect critical thinking skills is learning motivation. Learning motivation has a role to create and be able to improve students' critical thinking skills, both motivation through internal and external factors. If a student has low critical thinking skills but has high learning motivation, it can keep him motivated and try his best to be able to have good critical thinking skills (Sulistianingsih, 2017).

Based on this background and problems, the researcher conducted a research on the influence of learning media and learning motivation on critical thinking skills of students of the Faculty of Economics, State University of Jakarta. Researchers conducted research novelty because there are not many studies that discuss students' critical thinking skills, especially students of the Faculty of Economics, State University of Jakarta.

RESEARCH THEORITICAL

Instructional Media

Learning media is one of the factors that can improve students' understanding. By using appropriate and fun learning media, the teaching and learning process will be more effective because the learning atmosphere will be fun, more focused, motivation will increase and also increase student understanding to be clearer (Nurlaela, 2017). Meanwhile, according to (Karlina et al. (2018) learning media is a tool used in the learning process to make it easier, flexible and can help achieve learning objectives. Learning media is also a tool or means used in the learning process, where this media is used as a tool help the teacher to convey information to students, while audio-visual media is a tool in learning that displays sound (audio) and images (visual) in presenting the material and content of the media does not depend on understanding words (Pradilasari et al., 2019).

There are four indicators that can be used to measure learning media in the form of audio-visual in this study, namely the suitability of the material with the learning objectives, attractiveness of appearance, ease of understanding the material, and collaboration.

Motivation to learn

Learning motivation is an effort made to change one's behavior to achieve a result in learning activities, motivation can appear by itself in a person and some

motivation must be driven by the goals to be achieved (Khairani et al., 2020). Meanwhile, according to Emda (2017) learning motivation can be classified into two, namely intrinsic motivation and extrinsic motivation. Intrinsic motivation is a factor that comes from within oneself to carry out a learning activity, while extrinsic motivation is a motivation that comes from outside oneself which also encourages to carry out a learning activity.

There are four indicators that can be used to measure learning motivation in this study, namely the desire and effort to succeed in lessons, diligent and tenacious in doing assignments, happy to solve problems in doing assignments, and appreciation or rewards in learning.

Critical Thinking Ability

According to Sciven and Paul (1987) in Khairani et al. (2020) states that critical thinking ability is a disciplined and intellectual attitude, actively creates concepts skillfully, applies, analyzes and evaluates assessments obtained from observation, experience, reasoning, reflection and communication as a way of thinking. Meanwhile, according to Komara et al. (2017) critical thinking is a cognitive activity related to the use of reason in one's thinking, one's ability to think critically can provide the right instructions in activities and decide things, thus helping a person think analytically and appropriately. Critical thinking ability is the ability of students to solve problems and draw conclusions in the form of decisions from various points of view and aspects, critical thinking can also improve cognitive abilities as an appropriate means and environment (Pertiwi et al., 2021).

There are five indicators that can be used to measure critical thinking skills in this study, namely analyzing arguments, collecting valid and appropriate data, drawing conclusions, compiling answers or solutions accompanied by reasons, and developing problem solving designs.

Research Hypothesis

The hypotheses formulated in this study are as follows:
H1 = Learning Media has a positive and significant effect on Ability Critical thinking.
H2 = Learning Motivation has a positive and significant effect on Ability Critical thinking.

METHODELOGY

The researcher uses a quantitative approach by using a questionnaire or questionnaire to collect information and data from the sample. The questionnaire used by the researcher was in the form of an online questionnaire via Google Form with data measurement techniques using a 5-point Likert scale.

Population

The population in this study were students of the Faculty of Economics, State University of Jakarta

Sample

The sampling technique used in this study is non-probability sampling, which is a sampling technique by providing equal opportunities and opportunities for the entire population selected and used as a sample, using purposive sampling technique, namely a sample selection technique using certain criteria (Sugiyono, 2010). 2018).

The criteria set for sampling in this study are:

1. Active student of the Faculty of Economics, State University of Jakarta
2. Class of 2017 or 2018 students
3. Have or are currently using audio-visual learning media

In this study, the population is known to be 837 students of the Faculty of Economics, State University of Jakarta, class of 2017 and 2018. Therefore, in determining the number of samples, this study uses the theory proposed by Isaac & Michael in Sugiyono (2010) which refers to the table of the number of samples and the population of Isaac & Michael with an error rate of 5%. Based on this, it was determined that the sample size to be used in this study was 243 students.

Data collection technique

This study uses two data collection techniques, namely in the form of questionnaires or questionnaires to obtain primary data from respondents and secondary data used in the form of theories sourced from scientific journals, books and several news portals. The distribution of questionnaires or questionnaires to respondents is carried out online or online via Google Form.

DISCUSSION AND RESULT

Validity and Reliability Test

Validity and reliability tests were carried out to determine whether the data was valid and reliable or not. To measure the validity of this study, the Pearson product moment formula was used with a total of 30 respondents and an error rate of 5%. Therefore, if the correlation value between statement items is > 0.361, it can be said that the data is valid. Meanwhile, the reliability test of the research instrument was carried out using the Cronbach's alpha formula, if the Cronbach's alpha value > 0.70 then the instrument was declared reliable.

Table 1 – Validity and Reliability Test Results

Variabel	Item	Rhitung	*Cronbach's alpha*	Hasil
Media Pembelajaran	MP1	0,746	0,767	Valid
	MP2	0,56		Valid
	MP3	0,633		Valid

	MP4	0,603		Valid
	MP5	0,565		Valid
	MP6	0,567		Valid
	MP7	0,448		Valid
	MP8	0,831		Valid
Motivasi Belajar	MB1	0,793	0,906	Valid
	MB2	0,711		Valid
	MB3	0,639		Valid
	MB4	0,795		Valid
	MB5	0,762		Valid
	MB6	0,856		Valid
	MB7	0,814		Valid
	MB8	0,842		Valid
Kemampuan Berpikir Kritis	KBK1	0,648	0,874	Valid
	KBK2	0,434		Valid
	KBK3	0,618		Valid
	KBK4	0,824		Valid
	KBK5	0,551		Valid
	KBK6	0,649		Valid
	KBK7	0,795		Valid
	KBK8	0,761		Valid
	KBK9	0,824		Valid
	KBK10	0,788		Valid

Classic assumption test

Normality test

The normality test was conducted to determine whether the regression model from the data obtained, both independent and dependent variables, had residuals that were normally distributed or not. In this study, the normality test used the Kolmogorov-Smirnov test with a significance level of 5% or 0.05. The decision making criteria is if the significance > 0.05, then Ho is accepted, which means the data is normally distributed. On the other hand, if it is significant < 0.05, then Ho is rejected, which means that the data is not normally distributed.

Table 2 – Normality Test Results

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			243
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		3.02347527
Most Extreme Differences	Absolute		.061
	Positive		.061
	Negative		-.051
Test Statistic			.061
Asymp. Sig. (2-tailed)			.031[c]
Monte Carlo Sig. (2-tailed)	Sig.		.324[d]
	99% Confidence Interval	Lower Bound	.312
		Upper Bound	.336

Based on Table 2 above, the calculation results of the Kolmogorov Smirnov normality test with the SPSS 22.0 program show that the significance value is 0.324. The significance value of 0.324 is greater than 0.05 (0.324 > 0.05), so Ho is accepted, which means that the data in the regression model is normally distributed in this study.

Linearity Test

The linearity test can be used to determine whether the data obtained between the dependent variable and the independent variable has a linear relationship or not significantly, and is carried out based on the significance value that has been obtained. If Linearity > 0.05, then the influence of the two variables is not linear or Ho is accepted and vice versa, if the significance of Linearity < 0.05, then the influence of the two variables is declared linear or Ho is rejected.

Table 3 – Linearity Test Results for Variable X1 against Y

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
KBK * MP	Between Groups	(Combined)	1746.385	16	109.149	9.272	.000
		Linearity	1480.609	1	1480.609	125.779	.000
		Deviation from Linearity	265.776	15	17.718	1.505	.104
	Within Groups		2660.356	226	11.771		
	Total		4406.741	242			

Source: Data processed by Researchers (2021)

Based on Table IV.15 above, it shows that the learning media (X1) has a linearity value of 0.000 which is smaller than 0.05. Therefore, it can be concluded that the relationship between learning media variables (X1) and critical thinking skills (Y) has a significant linear relationship.

Table 4 – Linearity Test Results for Variable X1 against Y

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
KBK * MB	Between Groups	(Combined)	2013.692	16	125.856	11.886	.000
		Linearity	1807.852	1	1807.852	170.734	.000
		Deviation from Linearity	205.839	15	13.723	1.296	.206
	Within Groups		2393.049	226	10.589		
	Total		4406.741	242			

Source: Data processed by Researchers (2021)

Based on Table 4 above, it shows that learning motivation (X2) has a linearity value of 0.000 which is smaller than 0.05. Therefore, it can be concluded that the relationship between the motivation variable (X2) and critical thinking ability (Y) has a significant linear relationship.

Simple Linear Regression Equation

The equation used in this study is a simple linear regression equation which aims to explain the linear relationship between two variables that can be explained by the influencing and the affected variables. The results of the calculation of the simple linear regression test in this study using SPSS 22.0, with the following results:

Instructional Media

Simple linear regression analysis between learning media (X1) and critical thinking skills (X2) produces a coefficient of 0.629 and a constant of 21.360. Thus, the form of the influence of learning media on critical thinking skills has a regression equation = 21.360 + 0.629X. This shows that every increase in one learning media score (X1) will result in an increase in critical thinking ability (Y) of 0.629 with a constant of 21.360.

Motivation to learn

Simple linear regression analysis between learning motivation (X2) and critical thinking ability (Y) produces a coefficient of 0.710 and a constant of 18.451. Thus, the form of the influence of learning motivation on critical thinking skills has a regression equation = 18.451 + 0.710X. This shows that each increase in learning motivation score (X2), will result in an increase in critical thinking ability (Y) of 0.710 with a constant of 18.451.

Hypothesis testing
Partial Test (T Test)

The test was carried out using the t test at a significance level of 0.05. With the test criteria if tcount > ttable, then Ho is rejected and Ha is accepted or has a probability value of sig. <0.05, and there is a significant effect. On the other hand, if tcount < ttable, then Ho is accepted and Ha is rejected or the probability value is sig. > 0.05, and there is no effect.

H1: Learning media has a positive and significant effect on critical thinking skills.

Table 5 – Partial Significant Test (t-test) Learning Media (X1)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.360	1.927		11.086	.000
	MP	.629	.057	.580	11.043	.000

a. Dependent Variable: KBK

Source: Data processed by Researchers (2021)

The partial test results for the learning media variable (X1) on critical thinking skills (Y) show that the significant value is 0.000 and the tcount is 11.043, while the ttable with an error level of 0.05 and df (nk-1) = (243-2- 1) = 1.651. So that tcount (11.043) > ttable (1.651) with the direction of the coefficient is positive and the p value is 0.000, so that the p value is < 5% (0.000 < 0.05), meaning that there is a significant effect of learning media variables on critical thinking skills. Thus, it can be concluded that the first hypothesis, namely, "learning media has a positive and significant effect on critical thinking skills" is accepted.

H2: Learning motivation has a positive and significant effect on critical thinking skills.

Table 6 – Partial Significant Test (t-test) Learning Motivation (X2)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.451	1.869		9.873	.000
	MB	.710	.055	.641	12.948	.000

a. Dependent Variable: KBK

Source: Data processed by Researchers (2021)

The partial test results for the learning motivation variable (X2) on critical thinking ability (Y) show that the significant value is 0.000 and the tcount is 18.451, while the ttable with an error level of 0.05 and df (nk-1) = (243-2- 1) = 1.651. So that tcount (18.451) > ttable (1.651) with the direction of the coefficient is positive and the p value is 0.000, so p value <5% (0.000 <0.05), meaning that there is a significant effect of learning motivation variables on

critical thinking skills. Thus, it can be concluded that the second hypothesis, namely, "learning motivation has a positive and significant effect on critical thinking skills" is accepted.

Correlation Coefficient and Determination

a. Correlation coefficient

The value of the correlation coefficient (R) is within the limit of -1≤ r 1. A positive result indicates a positive or direct effect, while a negative result indicates a negative or indirect effect.

Table 7 – Correlation and Determination Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.580[a]	.336	.333	3.484

a. Predictors: (Constant), MP

b. Dependent Variable: KBK

Source: Data processed by Researchers (2021)

Based on the data in the table above, it shows that the correlation coefficient (R) is 0.580. This shows that the relationship between learning media variables and critical thinking skills has a moderate interpretation. The coefficient of determination (R2) of learning media is 0.336, which means 33.6% of the variation in the dependent variable of critical thinking ability (Y) can be explained by the independent variable of learning media (X1), while the other 66.4% is influenced by other variables.

Table 8 – Correlation and Determination Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.641[a]	.410	.408	3.284

a. Predictors: (Constant), MB

b. Dependent Variable: KBK

Source: Data processed by Researchers (2021)

Based on the data in the table above, it shows that the correlation coefficient (R) is 0.641. This shows that the relationship between learning motivation variables and critical thinking skills has a high interpretation. The coefficient of determination (R2) of learning motivation is 0.410, which means that 41% of the variation in the dependent variable of critical thinking ability (Y) can be explained by the independent variable of learning motivation (X2), while the other 59% is influenced by other variables.

DISCUSSION

1. The Influence of Learning Media on Critical Thinking Ability

Based on the results of the tests that have been carried out, it can be concluded that the learning media in the form of audio-visual media has a positive and significant influence on critical thinking skills. This conclusion is indicated by the results of the coefficient of 0.629, the tcount value of 11,043 and the significance value of 0.000 which means that it is significant based on the results of the significance test (t test) of the X1 variable on the Y variable that tcount (11.043) > ttable (1.651) so that the hypothesis Ha is accepted. On the other hand, based on table 7 the value (R) of 0.580 which shows that the relationship between the variables of learning media and critical thinking ability has a moderate interpretation and the value (R2) of learning media shows that the variable of critical thinking ability (Y) can be explained by learning media variable (X1) is 0.336 (33.6%). Based on the test results, it can be concluded that the relationship between learning media and critical thinking skills is as expected and the hypothesis can be accepted.

The results of this study are in line with previous research conducted by Mashami & Gunawan (2018) with the title "The Influence of Sub-Microscopic Media Animation on Students' Critical Thinking Skills Based on Gender". critical thinking of students, both male and female. In another study conducted by Misrulloh & Dewi (2020) in their research entitled "Influence of Science Digital Storytelling Against Motivation of Learning and Critical Thinking Ability Learners" that audio-visual-based learning media can improve students' critical thinking skills. So that the results of this previous study strengthen the results of research conducted that learning media has a positive and significant effect on critical thinking skills.

2. The Influence of Learning Motivation on Critical Thinking Ability

Based on the results of the tests that have been carried out, it can be concluded that learning motivation has a positive and significant influence on critical thinking skills. This conclusion is shown by the results of the coefficient of 0.710, the tcount value of 12,948 and the significance value of 0.000, which means that it is significant based on the results of the significance test (t test) of the X2 variable on the Y variable that tcount (12,948) > ttable (1,651) so that the Ha hypothesis is accepted. On the other hand, based on table 8 the value (R) of 0.641 which shows that the relationship between the variable of learning motivation and critical thinking ability has a high interpretation and the value (R2) of learning motivation shows that the variable of critical thinking ability (Y) can be explained by learning motivation variable (X2) is 0.410 (41%). Based on the test results, it can be concluded that the relationship between learning motivation and critical thinking skills is as expected and the hypothesis can be accepted.

The results of this study are also in line with the research of Fajari et al. (2020) in his research entitled "Student Critical Thinking Skills and Learning Motivation in Lementary Students" shows that there is an influence of learning motivation on critical thinking skills, the higher students' learning motivation, the higher their critical thinking abilities. In a study conducted by Khairani et al. (2020) in his research entitled "The Influence of Problem Based Learning (PBL) Model Collaborative and Learning Motivation Based on Students' Critical Thinking Ability Science Subjects in Class V State Elementary School 105390 Island Image"

also stated that students' critical thinking skills with motivation higher is better than students who have low motivation. So the results of this previous study strengthen the results of research conducted that learning motivation has a positive and significant effect on critical thinking skills.

CONCLUTION AND SUGGESTION

CONCLUTION

Based on the results of research that has been carried out by researchers, the conclusions that can be concluded are as follows:

1. There is a positive and significant influence between learning media on critical thinking skills of students of the Faculty of Economics, State University of Jakarta. The better, appropriate and effective learning media used by students in learning, the more students' critical thinking skills will be improved.

2. There is a positive and significant influence between learning motivation on critical thinking skills of students of the Faculty of Economics, State University of Jakarta. The higher the learning motivation possessed by students, the higher the students' critical thinking skills.

SUGGESTION

1. In this study, the researcher only used three variables consisting of two independent variables and one dependent variable. It is better to use other variables outside this research so that a larger coefficient of determination can be obtained.

2. It is better to use a sample that covers the population more in order to get different data results.

3. Should be able to use a different scope with the research conducted in order to get more varied results and can be used as research novelties.

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* Corresponding Author.
fachrinurhidayat@gmail.com Fachri Nurhidayat

ISSN
2302-2663 (online)
DOI: doi.org/10.21009/JPEPA.007.2.3