

Analysis of The Learning Motivation of Students in Mathematics Education Online Learning, State University of Medan

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Abstract. This study aims to describe the effect of implementing online learning during the Covid-19 pandemic on the learning motivation of students of mathematics education at the State University of Medan (UNIMED). This study is an ex post facto study involving 100 respondents who had attended online lectures at Unimed Mathematics Education during the Covid-19 pandemic. The research instrument used a questionnaire distributed via the Google Form link to measure student learning motivation towards online learning implementation. Analysis of the research data shows the regression equation for student learning motivation towards the implementation of bold learning is $Y = 8,428 + 0,582X + 0,157$. For t count in this research activity 0,529, it can be concluded that there is a positive influence on student motivation during the Covid-19 Pandemic. The value of $R^2 = 0,279$, as much as 27,9% indicates that the online learning system for Unimed mathematics education students affects learning motivation during the Covid-19 pandemic.

1. Introduction

Covid-19 entered Indonesia in early March 2020, to be precise, in West Java Province. All sectors of life have been affected by the Covid-19 pandemic, including the education sector. Based on Circular Number 4 of 2020 concerning the Implementation of Education Policies in the emergency period of the spread of the virus, the Minister of Education and Culture urges all educational institutions not to carry out direct or face-to-face teaching-learning process, but distance learning system [1]. The online learning system is the main alternative so that learning. The changes that occur significantly affect student learning motivation. According to Sur, Hasanah, and Mustofa [2], online education positively impacts student learning motivation during the pandemic. The same thing was expressed by Sari and Rusmini [3] that the learning atmosphere created by the teacher has a significant effect on students' learning motivation.

Gowing [5] divides learning motivation into four aspects: (a) Desire to Achieve Something Students feel the desire to strive to get their wishes and hopes. (b) Commitment is an integral part of the learning process. Students who usually have an awareness of learning can do assignments and can balance tasks. (c) Initiative students must have initiatives that can support their success and success in completing their education because they already know and even understand themselves. (d) Optimistic, does not give up in pursuit of goals and always believes. Motivation to learn arises from within individuals who can encourage them to achieve learning goals [6]. Based on the opinion of experts, we can conclude that learning motivation is essential for students.



Online learning is in line with 21st-century innovative learning with learning characteristics leading to an active, scientific, contextual, collaborative, and learner-centered learning process [7]. According to Khusniah and Hakim [8], many research results state that technology positively impacts learning. Martin [9] said that students and teachers are currently using the internet as a learning resource [10].

2. Method

This research is an ex post facto research using the quantitative descriptive method. The study is in the even semester of 2019/2020 at Unimed. The population is active students from 2017 to 2019 who carried out online learning during the Covid19 pandemic. The number of samples desired is 100 respondents; for that, if 100 is sufficient, then the questionnaire taking is closed. Learning motivation in research is an independent variable. At the same time, the free variable on it is online learning. Student learning motivation is measured using a questionnaire determined and translated into 20 items and two items in the form of a description—data collection via Google Form with a link that students could easily access. The questionnaire used in this study adopted a Likert scale with four answer choices, namely Strongly Agree, Agree, Disagree, and Strongly Disagree. According to Sugiyono [11], the Likert scale can measure the attitudes, opinions, and perceptions of an individual or group of people towards social phenomena. The research instrument used is an e-questionnaire designed in the form of Google Form. In this research, data collection was carried out in private and is direct because the respondent just chooses the answer that is considered appropriate with his opinion. The media used to share is WhatsApp media, which provide a questionnaire link to the respondent. Each question made has weight different. A validity test was held, and an Instrument reliability test.

The data analysis technique used in this research is descriptive statistics Quantitative with the Classical Assumption Test, namely Test Normality and Linearity Test, for know that the variables in this study are typically distributed and have a linear relationship. This analysis aims to determine the influence between the independent variable with the dependent variable, namely between online lectures and motivation learn, with the regression equation.

$$Y = a + bX + e$$

Hypothesis testing in this study uses the test—Researcher to determine the independent variable's significant effect on the dependent variable—hypothesis Formulation.

H_0 : Online lectures provide influence on learning motivation college student

H_1 : Online lectures do not influence the learning motivation of college students

Testing criteria If $t < t_{table}$ then H_1 is accepted and H_0 is rejected, which means not giving influence. If $t_{count} > t_{table}$, then H_1 received and H_0 left which means take effect. Conclusion Withdrawal. If $t_{count} < t_{table}$, then H_1 is accepted and H_0 was rejected, which means online lectures do not motivate college students to learn. Vice versa if $t_{count} > t_{table}$, then H_1 is accepted and H_0 declined, which means there are influence online lectures on learning motivation college student.

3. Results and Discussion

This research was conducted on the Moon September 2020 with Student research subjects active Mathematics Education batch 2017, 2018, and 2019. The respondents are 100 respondents who have filled an incomplete questionnaire to be used as research data sources. The following is presented data on online lectures and motivation learn. Based on the results of the deployment questionnaire to 100 respondents about variable online courses and learning motivation, obtained frequency the answers in Table 1

Table 1. Percentage of respondents answers

	The percentage of the score			
	1	2	3	4
Online learning	34%	12%	35%	19%
Motivation learning	20%	45%	18%	17%

Table 1 shows that the percentage of online learning indicators is in the highest answer score at number 3, which is about 35% of respondents feel agree with the lecture system online in the mathematics education study program. About 34% of respondents disagree, 19% respondents strongly agree. Table 1 also shows the motivation to learn over time. In the Covid-19 pandemic, the highest percentage on a score of 2, 45% of respondents disagree. Base on Tabel 1 for the learning motivation variable, most students feel not motivated by the implementation of learning online during this time of the pandemic. About 18% of respondents think motivated, 20% of respondents highly unmotivated, and 17% of other respondents feel highly motivated.

Normality testing using the Kolmogorov Smirnov formula to find out whether the data generally distribute with a significant level of 5%. Following the results of normality testing with SPSS. Table 2 shows the sig values (2-tailed) Kolmogorov Smirnov of 0.087, concluded that the distribution of the data obtained is expected because of the significance of more than 0.05.

Table 2. Normality Test

Unstandardized Residue	
N	100
Normal Parameters ^{a,b} Mean	.0000000
Std Deviation	3.23127835
Test Statistic	.127
Asymp Sig (2-tailed)	.087

Table 3 Linearity Test Results Student Motivation Variables and Implementation of Online learning system

Tabel 3. Linearity test

	Sum of Squares	df	Mean Square	F	Sig
Motivasi *Online Learning System	428.409	12	31.047	3.47	.001
Between Groups (Combined)	209.907	1	227.67	24.78	.000
Linearity	186.563	14	17.760	1.65	.087
Deviation from Linearity					

The linearity test in table 3 obtain a deviation from linearity sig. is 0.87 or greater than 0.05. It can conclude that there is a significant linear relationship between online lecture variables and variables motivation to learn. Table 4 Analysis Results Linear Regression for Learning Motivation Variables Students and System Implementation Online Learning

Tabel 4. Simple Linear Regression Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std Error	Beta		
1. (Constant/Online Lecturer	8.428	3.247		3.089	.003
	.582	157	.479	5.528	.000

The test results are in Table 4 above regression analysis results obtained with the following equation

$$Y = 8,428 + 0,582X + 0,157$$

The value 8,428 is a constant as meaning if the variable x (online college) the score is 0 or not there is an online lecture. The consistency value of the variable Y (learning motivation) is equal to 8,428. The value of 0.582 means for each additional X unit (1%) of the implementation online lecture (X), the motivation to learn will increase by 0.157. The value of t is calculated based on Table 5 is 5.528. With a

level of trust 95%, then the value of $\alpha = 0.05$. The formula for t table is $0.05 / 2 = 0.025$ (two-tailed test), degrees free (df) = n-k or $100-2 = 98$ is obtained table value of 3.044053.

Hypothesis Test Results

H_0 : Online lectures provide influence on learning motivation college student

H_1 : Online lectures do not provide influence on learning motivation college student

Therefore t count is greater than t table ($4,419 > 3,044053$), H_1 is accepted, and H_0 rejected which means online lectures influence learning motivation. Based on the value of R Square (coefficient of determination), which aims to measure the goodness of the regression equation, it can seem that The value of R Square lies between 0-1. Result R Square testing on variables online lectures and motivation variables learning can be seen in Table 5.

Table 5. Coefficient Of Determination

Model	R	R Square	Adjusted R Square	Std. An error of the Estimate
1	.439 ^a	.279	.233	3.498

Based on Table 5, it is known that the value of R Square 0.279 or 27.9%. That figure means that online lectures affect motivation to learn as much as 27.9%. At the same time, other variables influence the remaining 72.1%. Also, it can seem that the correlation between the implementation of online lectures with student learning motivation is 0.439.

Based on the results of the Hypothesis Test and the Calculation of the coefficient of determination, can it say that the implementation of online learning has a positive effect on motivation learning mathematics Unimed students? The results of this study support by research Widya et al. [11] states that the learning motivation of students who take the Statistics course increases with online learning; the increase occurs around

4. Conclusions

Based on the research results done, it can be concluded that online lectures affect student learning motivation during the time the Covid-19 pandemic was 27.9%. Meanwhile, the remaining 72.9% is influenced by other variables. There was an increase in learning the reason for students by implementing lectures online during the Covid-19 pandemic with correlation ranges from 0.439.

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