



Analysis of the Influence of Biology Teachers' Creativity on Motivation, Critical Thinking Ability and Student Learning Outcomes During a Pandemic Through Online Learning of the Concept of the Human Reproductive System in Class XI Students of SMA Angkasa Lanud Pattimura, SMAN 3 Ambon and SMAN 7 Ambon

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Abstract:

At this time the Covid-19 pandemic or known as the corona virus has been endemic in the world and has affected aspects of human life. To break the chain of transmission of the corona virus, the government has set various policies for the community, one of which is in the world of education. Social distancing and physical distancing policies to break the spread of the corona virus outbreak, forcing a change from formal education in school to learning from home using an online system on a national scale, this makes teachers required to be able to design the learning process creatively by using models, methods, and methods. media and learning strategies that are in accordance with the subject matter in order to stimulate motivation, critical thinking skills and student learning outcomes and make students less likely to feel bored in participating in the online learning process. This study aims to examine the effect of biology teacher creativity on online learning to improve motivation, critical thinking skills and learning outcomes of class XI MIPA students at SMA Angkasa Lanud Pattimura Ambon, SMAN 3 Ambon and SMAN 7 Ambon. The data of this study were analyzed using multiple regression test. Through this research, it can be said that the creativity of biology teachers in carrying out online learning of the concept of the human reproductive system in the midst of the covid-19 pandemic in class XI students of SMA Angkasa Lanud Pattimura, SMAN 3 Ambon and SMAN 7 Ambon has a significant effect on motivation, critical thinking skills and student learning outcomes.

Keywords : Covid-19 Pandemic, Online Learning, Teacher Creativity, Motivation, Critical Thinking Ability, Learning Outcomes.

INTRODUCTION

Education is one of the main indicators of development and the quality of human resources, so the quality of human resources is highly dependent on the quality of education itself (Arends, 2013). At this time the Covid-19 pandemic or known as the corona virus has been endemic in the world and has affected aspects of human life. To break the chain of transmission of the corona virus, the government has set various policies for the community, one of which is in the world of education. Social distancing and physical distancing policies to stop the spread of the corona virus outbreak have forced a change from formal education at school to learning from home using an online system on a national scale (Kumparan.com, 2020). Mulyasa (2011), that online learning makes teachers have an important role to achieve learning objectives. Teachers must be creative in the selection of learning media and creative in making teaching materials, besides the behavior and attitudes of teachers in managing the teaching and learning process are also very much needed in learning during the learning from home program. Learning planning is a very important step before the implementation of learning. Careful planning is needed so that the implementation of learning runs effectively. In relation to the learning process during the COVID-19 pandemic, teachers should be able to direct and guide students actively in online learning activities so as to create good interactions between teachers and students in the learning process (Mujahidin, 2017).

Learning motivation is a condition where a person has a desire or drive in himself to be able to change behavior for the better through a series of experiences in the learning process to be able to master the learning objectives. Motivation in learning can direct learning activities correctly and get a positive attitude in learning activities so as to provide enthusiasm for students to continue learning, high learning motivation can make students more active in participating in the learning process and can improve critical thinking skills and learning outcomes good (Winarsih, 2009; Sanjaya, 2010; Kompri, 2016). Putra (2015), that critical thinking ability is a thinking process ability that allows a person to evaluate or investigate the evidence, assumptions, and logic underlying the ideas of others. Critical thinking skills are important in the learning process because it can provide opportunities for students to learn through discovery (Simbolon & Tapilouw, 2015). Learning outcomes are changes in student behavior both in cognitive, affective and psychomotor aspects after learning. The change in behavior in question is a situation where students have understood the subject matter that has been studied and are able to achieve the competency standards and minimum completeness criteria (KKM) that are applied (Aji & Rusiyanto, 2018).

Based on data from observations conducted through direct interviews with biology subject teachers at Angkasa Lanud Pattimura High School, SMAN 3 Ambon and SMAN 7 Ambon related to the online learning process since the outbreak of the corona virus, it greatly affects student learning outcomes, it is also common for students to take part in learning via zoom, classroom or other face-to-face applications, when the learning process takes place many of the students often turn off the camera and do other activities and are not serious in participating in learning, so here the teacher is required to be able to design the learning process creatively by using models, methods, media and learning strategies that are in accordance with the subject matter in order to stimulate motivation, critical thinking skills and student learning outcomes and make students less likely to feel bored in following the learning process.

METHODS

Types of research

This research is a quasi-experimental research. Quasi-experimental research was conducted to determine the effect of biology teacher creativity on motivation, critical thinking

skills and student learning outcomes during the pandemic through online learning of the concept of the human reproductive system in class XI MIPA SMA Angkasa Lanud Pattimura, SMAN 3 Ambon and SMAN 7 Ambon. This research was conducted on April 5, 2021 to July 05, 2021. The population in this study were all students of class XI majoring in Mathematics and Natural Sciences at SMA Negeri 3 Ambon, SMA Negeri 7 Ambon and SMA Angkasa Lanud Pattimura Ambon (479 students). The samples used in this study were students of class XI MIPA-1 SMA Negeri 3 Ambon (30 students), SMA Negeri 7 Ambon (30 students) and SMA Angkasa Lanud Pattimura Ambon (30 students). The independent variable is the creativity of the biology teacher (X) and the dependent variable is the motivation, critical thinking ability and student learning outcomes (Y). Data collection techniques using observation, questionnaires, tests, documentation.

Research design

In this study, the analysis used is multiple regression analysis. There is 1 independent variable (X) and 3 dependent variables (Y1, Y2, Y3), so that in general the research design is described as follows :

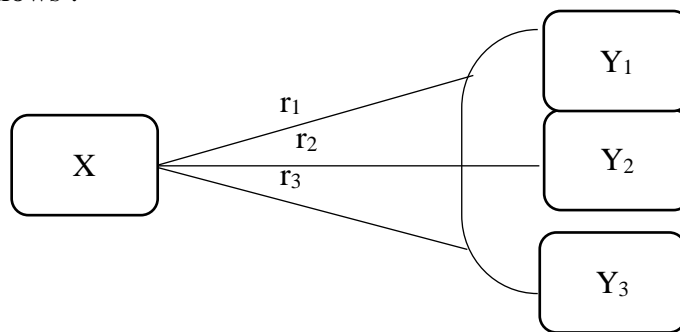


Image 1. Research design

Data analysis

Validity test can be known by looking at the calculated r. If $r_{count} > r_{table}$ = valid and $r_{count} < r_{table}$ = invalid. To test the reliability is done using the Cronbach Alpha method, where the questionnaire is said to be reliable if the Cronbach Alpha value is greater than 0.60. Normality test in this study using the Kolmogorov-Smirnov Test. The t-test (t-test) tests the partial regression coefficients, this test is carried out to determine the partial role significance between the independent variables on the dependent variable by assuming that the independent variable is considered constant, (t-test) the results of this calculation are then compared with t-table using an error rate of 0.05. If there is acceptance of H_0 , it can be concluded that there is no significant effect, whereas if H_0 is rejected, it means that there is a significant effect. The design of this hypothesis test is to test whether there is an influence between the independent variable (X) namely Teacher Creativity on the dependent variable (Y1) Motivation, (Y2) Critical Thinking Ability and (Y3) Learning Outcomes. Statistical analysis used in this study is the analysis of three predictor regression data used to determine the regression equation of the influence of teacher creativity, student motivation, students' critical thinking skills, and student learning outcomes at SMA Negeri 3 Ambon, SMA Negeri 7 Ambon and SMA Angkasa Lanud. Pattimura Ambon. The equations used for the three predictors are: $X = a + b_1Y_1 + b_2Y_2 + b_3Y_3$. Data analysis was carried out using the SPSS 20 program.

RESULTS AND DISCUSSION

Critical Thinking Ability Result Score

Table 1. Results of Analysis of Critical Thinking Skills at SMA Angkasa Lanud Pattimura

No	Indicator	Percentage	Category
1	Classify	98.0	Very Critical
2	Hypothesize	89.4	Very Critical
3	Conclude	89.4	Very Critical
4	Interpret data	94.0	Very Critical
5	Analyze	95.4	Very Critical
6	Evaluate	84.6	Very Critical
	Jumlah	550.8	Very Critical

(Source: Processed Development Research Data)

Based on the results of the study, data on students' critical thinking skills obtained by Angkasa Lanud Pattimura High School students were based on six indicators, namely: The first indicator is classifying. At SMA Angkasa, the improvement in this aspect is included in the "very critical" category with a percentage result of 98.0. This is because students are very serious in classifying the problems they are working on. The second indicator is to hypothesize. At SMA Angkasa, the improvement in this aspect is included in the "very critical" category with a percentage result of 89.4. This is because students focus on providing hypotheses for the problems being worked on. The third indicator is to conclude. At SMA Angkasa, the improvement in this aspect is included in the "very critical" category with a percentage result of 89.4. This is because students are trained to draw conclusions from their work.

The fourth indicator is interpreting the data. At SMA Angkasa, the improvement in this aspect is included in the "very critical" category with a percentage result of 94.0. This is because in the learning process students are trained to understand the data presented in learning resources. The fifth indicator is analyzing. At SMA Angkasa, the improvement in this aspect is included in the "very critical" category with a percentage of 95.4. This is because in learning students are accustomed to analyzing the problems to be solved. The last indicator is evaluating. At SMA Angkasa, the improvement in this aspect is included in the "very critical" category with a percentage of 84.6. This is because in learning students are able to evaluate the results of their work.

Table 2. Results of Analysis of Critical Thinking Ability of SMA Negeri 3 Ambon

No	Indicator	Percentage	Category
1	Classify	88.6	Very Critical
2	Hypothesize	90.0	Very Critical
3	Conclude	88.0	Very Critical
4	Interpret data	70.0	Critical
5	Analyze	91.4	Very Critical
6	Evaluate	99.4	Very Critical
	Jumlah	527.4	Very Critical

(Source: Processed Development Research Data)

Based on the results of the study, data on students' critical thinking skills obtained by students of SMAN 3 Ambon based on six indicators are: The first indicator is classifying. At SMA Negeri 3 Ambon, the improvement in this aspect is in the "very critical" category with a percentage result of 88.6. This is because students are very serious in classifying the problems they are working on. The second indicator is to hypothesize. At SMA Negeri 3 Ambon, the improvement in this aspect is in the "very critical" category with a percentage result of 90.0. This is because students focus on providing hypotheses for the problems being worked on. The third indicator is to conclude. At SMA Negeri 3 Ambon, the improvement in this aspect is in the "very critical" category with a percentage result of 88.0. This is because students are trained to draw conclusions from their work.

The fourth indicator is interpreting the data. At SMA Negeri 3 Ambon, the improvement in this aspect is in the "critical" category with a percentage of 70.0. This is because in the learning process students are trained to understand the data presented in learning resources. The fifth indicator is analyzing. At SMA Negeri 3 Ambon, the improvement in this aspect was in the "very critical" category with a percentage result of 91.4. This is because in learning students are accustomed to analyzing the problems to be solved. The last indicator is evaluating. At SMA Negeri 3 Ambon, the improvement in this aspect is in the "very critical" category with a percentage result of 99.4. This is because in learning students are able to evaluate the results of their work.

Table 3. Results of Analysis of Critical Thinking Ability of SMA Negeri 7 Ambon

No	Indicator	Percentage	Category
1	Classify	94.0	Very Critical
2	Hypothesize	95.4	Very Critical
3	Conclude	92.0	Very Critical
4	Interpret data	90.8	Very Critical
5	Analyze	95.4	Very Critical
6	Evaluate	90.8	Very Critical
	Jumlah	558.4	Sangat Kritis

(Source: Processed Development Research Data)

Based on the results of the study, data on students' critical thinking skills obtained by students of SMAN 7 Ambon based on six indicators are: The first indicator is classifying. At SMA Negeri 7 Ambon, the improvement in this aspect is in the very critical category with a percentage result of 94.0. This is because students are very serious in classifying the problems they are working on. The second indicator is to hypothesize. At SMA Negeri 7 Ambon, the improvement in this aspect is in the very critical category with a percentage of 95.4. This is because students focus on providing hypotheses for the problems being worked on. The third indicator is to conclude. At SMA Negeri 7 Ambon, the improvement in this aspect is in the very critical category with a percentage of 92.0. This is because students are trained to draw conclusions from their work.

The fourth indicator is interpreting the data. At SMA Negeri 7 Ambon, the improvement in this aspect is in the very critical category with a percentage of 90.8. This is because in the learning process students are trained to understand the data presented in learning resources. The fifth indicator is analyzing. At SMA Negeri 7 Ambon, the improvement in this aspect is in the very critical category with a percentage of 95.4. This is because in learning students are

accustomed to analyzing the problems to be solved. The last indicator is evaluating. At SMA Negeri 7 Ambon, the improvement in this aspect is in the very critical category with a percentage of 90.8. This is because in learning students are able to evaluate the results of their work.

Classification of Learning Outcomes

Table 4. Learning Outcomes of Angkasa Lanud Pattimura High School

Interval	Frequency	Percentage (%)	Information
86–100	18	60	Very good
77–85	11	36,67	Well
68–76	1	3,33	Enough
55–67	-	-	Not enough
≤ 50	-	-	Very less
Jumlah	30	100	-

(Source: Processed Development Research Data)

Based on the table of cognitive learning outcomes for students of class XI MIPA at SMA Angkasa Lanud Pattimura, the results obtained are, 18 students with a percentage of 60% obtained an interval value (86-100) with the information "very good", 11 students with a percentage of 36.67% obtained interval (77-85) with "good" information and 1 student with a percentage of 3.33% obtained an interval (68-76) with "enough" information.

Table 5. Learning Outcomes of SMA Negeri 3 Ambon

Interval	Frequency	Percentage (%)	Information
86–100	16	53,33	Very good
77–85	12	40	Well
68–76	2	6,67	Enough
55–67	-	-	Not enough
≤ 50	-	-	Very less
Jumlah	30	100	-

(Source: Processed Development Research Data)

Based on the table of cognitive learning outcomes for students of class XI MIPA at SMAN 3 Ambon, the results obtained are, 16 students with a percentage of 53.33% obtained an interval value (86-100) with the description "very good", 12 students with a percentage of 40% obtained an interval (77-85) with "good" information and 2 students with a percentage of 6.67% obtained an interval (68-76) with "enough" information.

Table 6. Learning Outcomes of SMA Negeri 7 Ambon

Interval	Frequency	Percentage (%)	Information
86–100	16	53,33	Very good

77–85	10	33,33	Well
68–76	4	13,33	Enough
55–67	-	-	Not enough
≤ 50	-	-	Very less
Jumlah	30	100	-

(Source: Processed Development Research Data)

Based on the table of cognitive learning outcomes for students of class XI MIPA at SMAN 7 Ambon, the results obtained are, 16 students with a percentage of 55.33% obtained an interval value (86-100) with the description "very good", 10 students with a percentage of 33.33% obtained an interval (77-85) with "good" information and 4 students with a percentage of 13.33% getting an interval (68-76) with "enough" information.

Reliability Test Results

Table 7. High School Reliability Test Results Angkasa Lanud Pattimura
Reliability Statistics

Cronbach's Alpha	N of Items
.916	101

(Source: SPSS 20 output attachment, 2021)

Based on table 4.7, the reliability test results obtained all the values of the x and y variables at SMA Angkasa resulted in Cronbach's Alpha value of 0.916 > and that value > 0.60 so it was declared reliable.

Table 8. Reliability Test Results of SMA Negeri 3 Ambon
Reliability Statistics

Cronbach's Alpha	N of Items
.748	101

(Source: SPSS 20 output attachment, 2021)

Based on table 4.8, the results of the reliability test obtained all the values of the x and y variables at SMA Negeri 3 Ambon resulting in a Cronbach's Alpha value of 0.748 > and the value > 0.60 so it was declared reliable.

Table 9. Reliability Test Results of SMA Negeri 7 Ambon
Reliability Statistics

Cronbach's Alpha	N of Items
.815	101

(Source: SPSS 20 output attachment, 2021)

Based on table 4.9, the results of the reliability test obtained all the values of the x and y variables at SMA Negeri 7 Ambon resulting in Cronbach's Alpha value of 0.815 > and the value > 0.60 so it was declared reliable.

Normality Test Results

Table 10. The results of the Normality Test of the Angkasa Lanud Pattimura High School

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.210	30	.528	.882	30	.421

a. Lilliefors Significance Correction

(Source: SPSS 20 output attachment, 2021)

Based on table 10, the results of the normality test show that the significant value of all variables at SMA Angkasa is greater than $0.05 > 0.528$ on the Kolmogorov-Sminorv test and 0.421 on the Shapiro-Wilk. So from the results of the normality test of all these variables, the residual value is declared to be normally distributed.

Table 11. Normality Test Results for SMA Negeri 3 Ambon

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.136	30	.166	.955	30	.229

a. Lilliefors Significance Correction

(Source: SPSS 20 output attachment, 2021)

Based on table 11, the results of the normality test show that the significant value of all variables at SMA Negeri 3 Ambon is greater than $0.05 > 0.166$ on the Kolmogorov-Sminorv test and 0.229 on the Shapiro-Wilk. So from the results of the normality test of all these variables, the residual value is declared to be normally distributed.

Table 12. Normality Test Results of SMA Negeri 7 Ambon

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.150	30	.185	.907	30	.212

a. Lilliefors Significance Correction

(Source: SPSS 20 output attachment, 2021)

Based on table 12, the results of the normality test show that the significant value of all variables at SMA Negeri 7 Ambon is greater than $0.05 > 0.185$ on the Kolmogorov-Sminorv test and 0.212 on the Shapiro-Wilk. So from the results of the normality test of all these variables, the residual value is declared to be normally distributed.

T test results

Table 13. T-Test Result of Angkasa Lanud Pattimura High School

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	56.256	73.219		4.768	.049
	Motivasi	.264	.214	.250	2.234	.028
	Hasil Belajar	.934	.628	.312	2.986	.019
	Berpikir Kritis	.243	.859	.060	3.283	.030

a. Independent Variable: Kreatifitas Guru

(Source: SPSS 20 output attachment, 2021)

Based on table 13, the t-count for motivation is 2.234 with a significant value of 0.028, for the learning outcome variable 2.986 with a significant value of 0.019, for the critical thinking variable 3.283 with a significant value of 0.030. To determine the t-table, the statistical attachment of the t-table is 1.685, using a significant level of 0.05. With (df) $n - k$ or $40 - 2 = 38$. This means the value of $\text{sig} < 0.05$ or $t\text{-count} >$ from the t-table which means H_0 is rejected and H_a is accepted. The direction of the positive regression coefficient means that teacher creativity has a positive and significant influence on motivation, critical thinking and student learning outcomes.

Table 14. T-Test Results of SMA Negeri 3 Ambon

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	143.423	42.360		9.386	.002
	Motivasi	.025	.200	.024	2.125	.015
	Berpikir Kritis	.268	.308	.168	1.871	.042
	Hasil Belajar	.165	.340	.093	3.486	.025

a. Independent Variable: Kreatifitas Guru

(Source: SPSS 20 output attachment, 2021)

Based on table 14, the t-count for motivation is 2.125 with a significant value of 0.002, for learning outcomes variable 3.486 with a significant value of 0.025, for critical thinking variable 1.871 with a significant value of 0.042. To determine the t-table, the statistical attachment of the t-table is 1.685, using a significant level of 0.05. With (df) $n - k$ or $40 - 2 = 38$. This means the value of $\text{sig} < 0.05$ or $t\text{-count} >$ from the t-table which means H_0 is rejected and H_a is accepted. The direction of the positive regression coefficient means that teacher creativity has a positive and significant influence on motivation, critical thinking and student learning outcomes.

Table 15. T-Test Results of SMA Negeri 7 Ambon

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	143.597	57.856		4.482	.020
	Motivasi	.069	.142	.095	1.988	.039
	Berpikir Kritis	.467	.695	.130	1.873	.007
	Hasil Belajar	.019	.435	.009	2.044	.028

a. Independent Variable: Kreatifitas Guru

(Source: SPSS 20 output attachment, 2021)

Based on table 15, the t-count for motivation is 1.988 with a significant value of 0.020, for the learning outcome variable 2.044 with a significant value of 0.028, for critical thinking variable 1.873 with a significant value of 0.007. To determine the t-table, the statistical attachment of the t-table is 1.685, using a significant level of 0.05. With (df) $n - k$ or $40 - 2 = 38$. This means the value of $\text{sig} < 0.05$ or $t\text{-count} >$ from the t-table which means H_0 is rejected and H_a is accepted. The direction of the positive regression coefficient means that teacher creativity has a positive and significant influence on motivation, critical thinking and student learning outcomes.

Multiple Regression Test

Table 16. Results of Regression Analysis of Angkasa Lanud Pattimura High School

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	56.256	73.219		4.768	.049
	Motivasi	.264	.214	.250	2.234	.028
	Hasil Belajar	.934	.628	.312	2.986	.019
	Berpikir Kritis	.243	.859	.060	3.283	.030

a. Independent Variable: Kreatifitas Guru

(Source: SPSS 20 output attachment, 2021)

$$X = a + b_1Y_1 + b_2Y_2 + b_3Y_3$$

$$X = 56,256 + 0,264 + 0,934 + 0,243$$

From the regression equation, it can be interpreted as follows:

- Constant regression value is 56,256, indicating that on motivation, learning outcomes and students' critical thinking skills with constant conditions or $Y = 0$, then the creativity of biology teachers towards online learning is 56,256.
- Y_1 (Motivation) regression coefficient is 0.264, it can be said that X (Teacher's Creativity) has a positive effect on Y_1 (Motivation).
- Y_2 (Critical Thinking Ability) regression coefficient is 0.243, it can be said that X (Teacher's Creativity) has a positive effect on Y_2 (Critical Thinking Ability).
- Y_3 (Learning Outcomes) regression coefficient of 0.934, it can be said that X (Teacher's Creativity) has a positive effect on Y_3 (Learning Outcomes).

So, based on these results, it can be concluded that the variable X (Teacher Creativity) has a positive effect on the variables Y_1 (Motivation), Y_2 (Critical Thinking Ability) and Y_3 (Learning Outcomes) in class XI MIPA SMA Angkasa Lanud Pattimura.

Table 17. Results of Regression Analysis for SMA Negeri 3 Ambon

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	143.423	42.360		9.386	.002
	Motivasi	.025	.200	.024	2.125	.015
	Berpikir Kritis	.268	.308	.168	1.871	.042
	Hasil Belajar	.165	.340	.093	3.486	.025

a. Independent Variable: Kreatifitas Guru

(Source: SPSS 20 output attachment, 2021)

$$X = a + b_1Y_1 + b_2Y_2 + b_3Y_3$$

$$X = 143,423+0,025+0,268+0,165$$

From the regression equation, it can be interpreted as follows:

- a) Constant regression value is 143,423, indicating that on motivation, learning outcomes and students' critical thinking skills with constant conditions or $Y = 0$, then the creativity of biology teachers towards online learning is 143,432.
- b) Y1 (Motivation) regression coefficient is 0.025, it can be said that X (Teacher's Creativity) has a positive effect on Y1 (Motivation).
- c) Y2 (Critical Thinking Ability) regression coefficient is 0.268, it can be said that X (Teacher's Creativity) has a positive effect on Y2 (Critical Thinking Ability).
- d) Y3 (Learning Outcomes) regression coefficient is 0.165, it can be said that X (Teacher's Creativity) has a positive effect on Y3 (Learning Outcomes).

So, based on these results, it can be concluded that the variable X (Teacher Creativity) has a positive effect on the variables Y1 (Motivation), Y2 (Critical Thinking Ability) and Y3 (Learning Outcomes) in class XI MIPA SMA Negeri 3 Ambon.

Table 18. Results of Regression Analysis of SMA Negeri 7 Ambon

Coefficients ^a		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	143.597	57.856		4.482	.020
	Motivasi	.069	.142	.095	1.988	.039
	Berpikir Kritis	.467	.695	.130	1.873	.007
	Hasil Belajar	.019	.435	.009	2.044	.028

a. Independent Variable: Kreatifitas Guru

(Source: SPSS 20 output attachment, 2021)

$$X = a + b_1Y_1 + b_2Y_2 + b_3Y_3$$

$$X = 143,597 + 0,069 + 0,467 + 0,019$$

From the regression equation, it can be interpreted as follows:

- a) Constant regression value is 143.597, indicating that on motivation, learning outcomes and students' critical thinking skills with constant conditions or $Y = 0$, then the creativity of biology teachers towards online learning is 143.597.
- b) Y1 (Motivation) regression coefficient is 0.069, it can be said that X (Teacher's Creativity) has a positive effect on Y1 (Motivation).
- c) Y2 (Critical Thinking Ability) regression coefficient is 0.467, it can be said that X (Teacher's Creativity) has a positive effect on Y2 (Critical Thinking Ability).
- d) Y3 (Learning Outcomes) regression coefficient is 0.019, it can be said that X (Teacher's Creativity) has a positive effect on Y3 (Learning Outcomes).

So, based on these results, it can be concluded that the variable X (Teacher Creativity) has a positive effect on the variables Y1 (Motivation), Y2 (Critical Thinking Ability) and Y3 (Learning Outcomes) in class XI MIPA students of SMA Negeri 7 Ambon.

CONCLUSION

Based on the results of the research obtained on the problems raised in this study, it was concluded that the creativity of biology teachers in carrying out online learning of the concept of the human reproductive system in the midst of the covid-19 pandemic in class XI students

of SMA Angkasa Lanud Pattimura, SMAN 3 Ambon and SMAN 7 Ambon had an effect on significant on motivation, critical thinking skills and student learning outcomes.

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