

## Using of Students' Modules and Role on Learning Achievement in Covid-19 Pandemic

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### ABSTRACT

The article explored the relationship between the use of teaching materials and the role of students with learning achievement during the COVID-19 period. The research was correlational quantitative approach with research subjects at the Mechanical Engineering Vocational School. Collecting data using interviews, documentation, and questionnaires. Pearson Product Moment correlation technique analysis, t-test, and F test, with SPSS software. The results showed that the use of teaching materials is an external factor that supports the effectiveness of student learning outcomes, adds motivation to the spirit of learning, improves skills directly, creates an independent learning atmosphere according to interests, speed and a certain way, was able to independently assess and evaluate the results of using materials. The role of students when learning from home (BDR) was not good enough, caused by various factors, namely the role of educators which must be maximized again, providing motivation and support even though learning was carried out online from home. The role of students, in this case, was actively paying attention to the presentation of learning with modules through the zoom platform, understanding learning materials, summarizing and concluding subject matter, participating actively in asking questions, and responding either individually or in groups. Learning achievement produced by students in the Covid-19 era could not be separated from the effectiveness of using modules, but there were still obstacles experienced by students when learning from home online, less active participation during the learning process, and late in collecting assignments.

**Keywords:** *Teaching Materials, Learning Achievement, Learning Pandemic Era*

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## INTRODUCTION

World Health Organization (WHO) emergency committee, under national health regulations declared the acute respiratory disease covid-19 as Health emergencies are an international concern, of course, the journey of this epidemic has a different ending (Lee, 2020). Based on WHO data, it was found that COVID-19 has become a global pandemic with 223 confirmed countries, 172,242,495 deaths, and 3,709,397 worldwide (update: 06-06-2021) (WHO, 2020). While the Southeast Asia region reported more than

1.5 million cases and more than 29,000 new deaths, a decrease of 24% and 8% compared to the previous year. In particular, Indonesia with 39,986 new cases; 14.6 new cases per 100,000; an increase of 20%, 1057 new deaths; 0.4 new deaths per 100,000; 15% reduction (update: 01-06-2021).

The impact of Covid-19 disrupting daily life has changed various aspects of life, especially education in Indonesia. Adjustment of learning policies during the covid-19 pandemic that was implemented to minimize its spread, policies issued by the Indonesian government to reduce the rate of spread of the corona virus by imposing online distance learning (BDR), the covid-19 pandemic required testing of distance education in conditions that were not yet available. experienced before (L. Sun et al., 2020). According to (Milman, 2015) technology allows students and educators to carry out the learning process even though they are in different locations.

To prevent the spread of Covid-19, WHO urges to stop activities that can cause crowds. According to (Stein, 2020) Implementing social distancing is considered a necessary step in suppressing the spread of COVID-19. Therefore, face-to-face learning in which many students participate in class is examined for its implementation. Learning should take place in a scenario where physical contact between learners and educators can be prevented and online learning or learning can be arranged (Firman & Rahayu, 2020). (Jamaluddin et al., 2020) stated that it is necessary to remember that online learning has its own advantages, challenges, and obstacles. Zhang et al., (2004) the use of the internet (online) and multimedia technology can change the way knowledge is conveyed and provide an alternative to traditional classroom learning.

In Indonesia, the online distance learning process is currently seen as a good solution to reduce the number of cases exposed to COVID-19. Online distance learning is defined as learning that utilizes the internet network with accessibility, connectivity, flexibility, and the ability to develop various forms of learning interactions (Sadikin & Hamidah, 2020). The consequences of the COVID-19 pandemic have surprisingly required maintaining online learning, learning design and development must address the development of science and technology and the current pandemic situation (Nurdyansyah & Luly Riananda, 2016). This condition makes all elements innovate and adapt related to the use of available technology to support the learning process. Educators and students as important components in learning that transform rapidly from face-to-face learning to online learning or distance learning, online learning shows persistence or weak motivation of students which seriously reduces the effectiveness of their learning (Bao, 2020).

To ensure that students concentrate on online learning, they apply modular teaching methods, provide teaching content in the form of modules, and increase student involvement in online learning to overcome physical barriers that do not occur in face-to-face learning (Ahmed et al., 2020). (Kuo et al., 2014) stated that online learning is student-centered and can lead to student responsibility and autonomy in learning. Online learning requires students to prepare, organize, and evaluate their lessons while maintaining motivation to learn (Sun, 2014) . Nurdyansyah et al., (2017) clarifies " The education world must innovate in a whole. It means that all the devices in education system have its role and be the factors which take the important effect in successful of education system". (Nurdyansyah. N., & Andiek widodo, 2015) The learning process does not only involve educators and students, but also various stakeholders involved in the learning process. However, the role of the use of teaching materials is also very important in the learning process. Learning needs to provide a

certain atmosphere in the learning process so that students can feel comfortable while learning (Nurdyansyah et al., 2017).

Teaching materials are a set of subject matter related to the curriculum used to achieve certain competency standards and basic abilities (Ika Lestari, 2013). Achieving measurement/evaluation competence is required to acquire capability. Accurate management and analysis are needed to assess learning success (Nurdyansyah. N., & Andiek widodo, 2015). Teaching materials help support education in carrying out learning activities. For students, it serves as a guide for learning during the learning process. Teaching materials can function to regulate and monitor the process of obtaining student information. This material is a module designed to help students achieve their goals and as a means of self-study at their own pace.

Based on the pre-survey/pre-research in the field, which was carried out in several vocational schools in South Sumatra, the researchers conducted interviews related to the use of teaching materials and the role of students in learning outcomes several educators and students. The researcher interviewed the teacher of lathe machining technique and said that during the Covid-19 situation, the 2013 curriculum was implemented by adjusting to the Covid-19 conditions, where all learning processes were carried out online. So it is necessary to adjust to the emergency curriculum during this pandemic, for module teaching materials to be given or sent to students via the google classroom learning link, then an introduction will be given to learning and presenting learning materials online ( Via Zoom Meeting, Meet, SiSMART , etc.) , students will be given the opportunity to ask questions, in order to achieve active learning goals.

Referring to the results of previous studies showing that learning done with E-learning can help teaching, this system needs to be ensured that no students are constrained because of location, social class and so on. The use of google classroom can be used anytime and anywhere and is supported by online learning with the Via Zoom Meeting module, SiSMART, so that it will make learning effective. Then when giving assignments, practice questions are also directly given through learning with the features of google classroom by providing a limit for collecting assignments. The role of students during the teaching and learning process can be said to be active and can follow the online learning process, but there are still obstacles when educators give assignments or practice questions, sometimes there are still those who have not reported assignments and do not even collect assignments because of some obstacles experienced. Researchers also obtained documentation of students' daily scores on lathe engineering subjects and there were still some students who had not reached the KKM score.

Furthermore, interviews were also conducted with several students at SMKN 2 Palembang, SMKN 4 Palembang, SMKN SUMSEL and SMK YP Gajah Mada Palembang, regarding the teaching materials used during the learning process, the media or platforms used when studying, the use of teaching materials, the role of students. during PBM and student learning outcomes. However, the problems experienced by students are the use of teaching materials that have not been maximized, interest, and minimal motivation to learn because of the COVID-19 pandemic situation which certainly affects students, then students are also difficult and constrained to participate in PBM activities online through the Google platform. classroom, SiSMART, and Whatsapp during the Covid-19 pandemic, many factors were the cause, one of which was internet access, then there were some students who didn't have a device and had to try to borrow, even to the internet cafe, and most of the

students when given an assignment didn't do, and just doing attendance only. Documentation is also obtained from subject educators, where it turns out that there are still many who do not meet the KKM. Referring to the results of Dhawan's research (2020) shows that learning with E-learning can help to teach, but such a system needs to be developed in educational institutions that ensure that no student loses their education because of location, social class, ethnicity, and so on. Online teaching methods support and facilitate teaching and learning activities, but there is an urgent need to weigh the pros and cons of technology and exploit its potential. From this research, researchers know that online learning has many weaknesses, therefore in this study researchers will show whether online learning using the Via Zoom Meeting, SiSMART module will make learning effective and have an impact on student achievement.

Learning outcomes in activities that take place at SMK Palembang, especially in lathe machining engineering subjects, have relatively low learning outcomes, the average student test results are below the KKM (Minimum Completeness Criteria). This may be caused by several problems, including (1) the use of teaching materials that have not been maximized during the learning process; (2) Interest and motivation to learn with students are still low; (3) Ineffective use of teaching materials during learning; (4) The students' backgrounds are different, (5) The Covid-19 pandemic situation makes students have to do online BDR or PJJ learning models by utilizing gadgets, there is no one who accompanies learning from home, of course, students have problems when capturing lessons. . While students find it difficult to learn independently if analyzed the causes can be from students, educators, facilities and infrastructure as well as teaching materials and even learning models used. Less successful learning activities can also be caused by a lack of motivation to learn by being less active in interacting during learning activities. The aspects of learning achievement that are measured are cognitive and affective aspects. Various studies have found what factors can affect the ineffectiveness of online learning, not using modules, but from this research, it will be known the impact of using modules in several learning features on student learning achievement in SMK.

Based on the description above which is the background of this research, the authors conducted an analysis to determine the relationship between the effectiveness of the use of module teaching materials and the involvement of students in learning achievement at the lathe engineering vocational school in the covid-19 era. It is very important to know the relationship between the two during online learning in the hope of providing information and improvements in the future.

## **METHOD**

Research is conducted by researchers using correlational quantitative research with the ex post facto method, ex post facto research is one of the studies used to examine events that have occurred and then look back to find out the exact cause that could lead to it happening or things that caused the incident. (Sugiyono, 2004: 7). Ex post facto research is also research in which there are independent variables, which have existed when the researcher started by observing the dependent variable in a study.

Then the sampling technique used was Proportional Random Sampling, which resulted in 156 subjects using the Isaac and Michael formula. Data collection techniques in this study used the method of documentation and questionnaires. Description of research data analysis includes descriptive statistics, parametric statistics with analysis

requirements test (normality test, linearity test, and multicollinearity test), and hypothesis testing. Data management uses the 21st SPSS (Statistical Package for the Social Sciences) software. In this study, there were two variables to look for whether there was a relationship or correlation between the two. The independent variable (independent variable) is the use of module teaching materials, and the role of students, and the dependent variable (dependent variable) is the learning outcomes of students of the lathe engineering vocational school in Palembang.

## RESULT AND DISCUSSION

The following will describe the descriptive analysis of research data including the mean (mean), median (Me), modus (Mo), standard deviation (SD), frequency distribution, percentage calculation, and diagrams of all variables.

### 1. Variable Use of Teaching Materials ( $X_1$ )

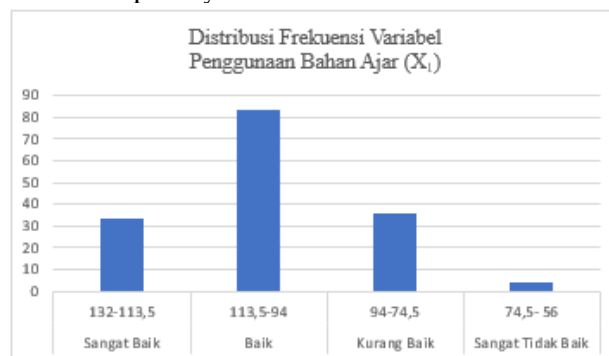
Analysis of the data on the variable use of teaching materials consisted of 33 questions grouped into 4 categories, namely Very Good (4), Good (3), Less Good (2), and Very Bad (1) with a total of 156 respondents. Data management using the 21st SPSS (Statistical Package for the Social Sciences) software. The mean value is 102.55, the median is 101.50, the modus is 99, and the standard deviation is 14,471. The following is a table of the frequency distribution of the variable use of teaching materials with the calculation of intervals, frequencies, and percentages.

Table 1. Variable frequency distribution table of the use of teaching materials

No	Category	Interval	Frekuensi	Persentase (%)
1	Very Good	132 - 113,5	33	21 %
2	Good	113,5 - 94	83	53 %
3	Less Good	94 - 74,5	36	23 %
4	Very Bad	74,5 - 56	4	3 %
Total			156	100 %

Based on Table 1, it can be concluded that the data on the distribution of the use of teaching materials for mechanical engineering SMK students in Palembang is 21% with very good criteria, 53% with good criteria, 23% less good criteria, and 3% including very bad criteria. Based on the results of the analysis, it can be concluded that the use of students' teaching materials is included in Good criteria. Here's the distribution diagram:

Picture 1. Variable frequency distribution of the use of teaching materials



### 2. Student Role Variables ( $X_2$ )

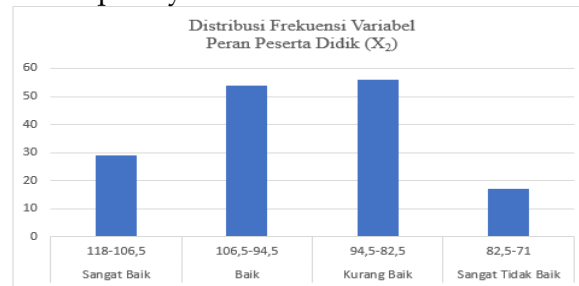
The collection of data analysis on the student role variable resulted in a mean value is 95.97, the median is 95.50, the modus is 90, and the standard deviation is 10.909. The following is a table of the frequency distribution of the student role variables with the calculation of intervals, frequencies, and percentages.

Table 2. of the frequency distribution of student role variables

No	Category	Interval	Frekuensi	Persentase (%)
1	Very Good	118 – 106,5	29	18 %
2	Good	106,5 – 94,5	54	35 %
3	Less Good	94,5 – 82,5	56	36 %
4	Very Bad	82,5 - 71	17	11 %
Total			156	100 %

Based on Table 2, it can be concluded that the data on the distribution of the roles of mechanical engineering vocational students in Palembang is 18% in the very good category, 35% in the good category, 36% in the less good category, and 11% in the very bad category. Based on the results of the analysis, it can be concluded that the role of students is included in the Less Good criteria. Here's the distribution diagram:

Picture 2. Frequency distribution of student role variables



### 3. Learning Outcome Variable (Y)

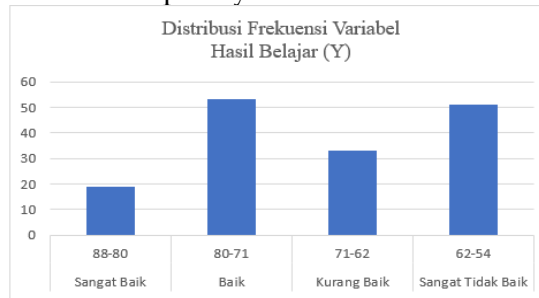
Collecting data on the learning outcomes variable resulted in a mean value is 81.45, the median is 82.00, the modus is 85, and the standard deviation is 3.324. The following is a table of the frequency distribution of learning outcomes with interval, frequency, and percentage calculations.

Table 3. Variable frequency distribution table of learning outcomes

No	Category	Interval	Frekuensi	Persentase (%)
1	Very Good	88 – 80	19	12 %
2	Good	80 – 71	53	34 %
3	Less Good	71 – 62	33	21 %
4	Very Bad	62 - 54	51	33 %
Total			156	100 %

Based on Table 3, it can be concluded that the distribution of learning outcomes for students of Mechanical Engineering SMK students in Palembang is 12% in the very good category, 34% in the good category, 21% in the less good category, and 33% in the very bad category. Based on the results of the analysis, it can be concluded that the learning outcomes of students are included in the Good criteria. The following table diagram is as follows:

Picture 3. Variable frequency distribution of learning outcomes



## Test Requirements Analysis

### 1. Normality test

Normality test is used to test the normal distribution of the study, the normality must be tested first. This study using the Kolmogorov Smirnov normality test aims to check whether the population is normally distributed or not. If the significance value (Sig.) is greater than 0.05, the data obtained is normally distributed. On the other hand, if the significance value (Sig.) is less than 0.05, the data obtained is not normally distributed.

Table 4. Data Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandar dized Residual
N		154
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std.	8.73298743
	Deviation	
	Absolute	.050
Most Differences	Extreme Positive	.036
	Negative	-.050
Kolmogorov-Smirnov Z		.622
Asymp. Sig. (2-tailed)		.833
Exact Sig. (2-tailed)		.814
Point Probability		.000
a. Test distribution is Normal.		
b. Calculated from data.		

Based on the Kolmogorov Smirnov normality test, SPSS version 21 Output, produces the Asymp value. Sig (2-tailed)  $0.833 > 0.05$ , then all variables with residual values are normally distributed. Then strengthened by using the Exact Sig method. (2-tailed) ie  $0.814 > 0.05$  which is more accurate, resulting in data that is normally distributed.

### 2. Linearity Test

The linearity test serves to measure the attachment of the variable, the independent variable has a linear effect on the dependent variable. Correlation is said to be good if it has a linear relationship between variables. Linearity testing is tested

with the Test for Linearity at a significance level of 5% with a linearity test decision making if the value of Sig. Deviation from Linearity  $> 0.05$  or 5%, then between the independent variable (X) and the dependent variable (Y) has a linear relationship, if the value of Sig. Deviation from Linearity  $< 0.05$ , then between the independent variable (X) and the dependent variable (Y) there is no linear relationship.

Table 5. Data Linearity Test Results

No	Variable	Significant Level	Description
1	X <sub>1</sub> , Y	0,489	Linier
2	X <sub>2</sub> , Y	0,323	Linier

Based on the results of the linearity test, the value of sig. deviation from linearity of the variable use of teaching materials (X<sub>1</sub>) to the learning outcome variable (Y) which is  $0.489 > 0.05$ , the student role variable (X<sub>2</sub>) to the learning outcome variable (Y) is  $0.323 > 0.05$ , then there is a relationship which is linear between the independent variable (X) and the dependent variable (Y).

### 3. Multicollinearity Test

Multicollinearity is a linear relationship between independent variables in a multiple linear correlation model. The purpose of the multicollinearity test is to determine the existence of a correlation or relationship between independent variables. How to detect the presence of multicollinearity in the multiple linear correlation model using tolerance values and VIF (Variance Inflation Factor). Decision-making provided that if the tolerance value is  $> 0.10$  and  $VIF < 10$ , then there is no multicollinearity. The researcher used SPSS software (Statistical Package for the Social Sciences) version 21. The steps are taken included input, analysis, and output, resulting in the following multicollinearity test data:

Table 6. Data Multicollinearity Test Results

No	Independent Variable (independent)	Collinearity Statistics		Description
		Tolerance	VIF	
1	Use of Teaching Materials (X <sub>1</sub> )	0,583	1,714	There is no multicollinearity
2	Student Role (X <sub>2</sub> )	0,583	1,714	There is no multicollinearity

Based on the data multicollinearity test table above, the variable use of teaching materials (X<sub>1</sub>) and the student role variable (X<sub>2</sub>) has a tolerance value of 0.583, meaning the tolerance value  $> 0.10$  and the VIF value 1.714, meaning the VIF value  $< 10$ , so the independent variable (independent) there is no multicollinearity.

### Hypothesis Testing

Hypothesis testing serves to prove a provisional conjecture that is supported by empirical data. This study uses the associative/relationship hypothesis consisting of 3 hypothesis tests, namely the first hypothesis test, the second using simple correlation analysis with the Pearson Product Moment correlation technique and t-test, while the third hypothesis test with multiple correlation analysis and the F test. A correlation test

was carried out to determine the relationship between the independent variable (independent) with the dependent variable (dependent).

#### 1. First Hypothesis Testing ( $H_1$ )

The first hypothesis that was tested was that the use of teaching materials had a relationship with the learning outcomes of lathe engineering vocational students in Palembang. Hypothesis testing using simple correlation analysis, data management using SPSS (Statistical Package for the Social Sciences) version 21 software. It is known that the basis for decision making, if the significance value is  $< 0.05$ , then it is correlated. If the significance value is  $> 0.05$ , then there is no correlation. So the output will look like this:

Table 7. First Hypothesis Test Results

<b>Correlations</b>			
		Use of Teaching Materials (X1)	Learning outcomes (Y)
Use of Teaching Materials (X1)	Pearson Correlation	1	.245**
	Sig. (2-tailed)		.002
	N	154	154
Learning outcomes (Y)	Pearson Correlation	.245**	1
	Sig. (2-tailed)	.002	
	N	154	154

Based on the results of the SPSS output in table 7, it can be explained that the significance value of the relationship between the use of teaching materials ( $X_1$ ) and learning outcomes (Y) is  $0.002 < 0.05$ , meaning that there is a relationship between the use of teaching materials and student learning outcomes. While the Pearson Correlation value is 0.245 with a positive direction of the relationship. Then it can be concluded that the use of teaching materials is positively related to learning outcomes with a weak correlation degree. N The Pearson Correlation value can also be compared with the r table, if the Pearson Correlation value  $> r$  table then it has a relationship, if the Pearson Correlation value  $< r$  table then it is not related. Pearson Correlation has a value of 0.245 while the r table with  $N = 154$ ,  $df = 154 - 2 = 152$  sig. 0.05 is 0.1582, it can be concluded that the Pearson Correlation value of  $0.245 > 0.1582$  (r table) here is a relationship between the use of teaching materials and learning outcomes.

Based on the t-test used to determine the variable significantly, it is known that the value of Sig. for  $X_1$  to Y is equal to  $0.004 < 0.05$  and the value of tcount  $2.906 > t$ table 1,976, the calculation of the value of ttable ( $\alpha = 0,05$ ). So it can be concluded that  $H_1$  is accepted, which means that there is a significant relationship between the variable use of teaching materials ( $X_1$ ) and the variable learning outcomes (Y). The following is hypothesis testing using t-test and simple correlation.

Table 8. First Hypothesis t Test Results

<b>Coefficients<sup>a</sup></b>
---------------------------------

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	54.764	5.123		10.689	.000
1 Use of Teaching Materials (X1)	.144	.049	.229	2.906	.004

a. Dependent Variable: Learning outcomes (Y)

## 2. Second Hypothesis Testing (H<sub>2</sub>)

Testing the second hypothesis is the relationship between the role of students and the learning outcomes of students in the lathe engineering vocational school in Palembang. Hypothesis testing using simple correlation analysis, data management using SPSS (Statistical Package for the Social Sciences) version 21 software. Basic decision making, if the significance value  $< 0.05$ , then it is correlated. If the significance value is  $> 0.05$ , then there is no correlation. The following output results with SPSS are as follows:

Table 9. Second Hypothesis Test Results

Correlations			
		Student Role (X <sub>2</sub> )	Learning outcomes (Y)
Student Role (X <sub>2</sub> )	Pearson Correlation	1	.151
	Sig. (2-tailed)		.062
	N	154	154
Learning outcomes (Y)	Pearson Correlation	.151	1
	Sig. (2-tailed)	.062	
	N	154	154

Based on the results of the SPSS output in table 9, the significance value of the relationship between the role of students (X<sub>2</sub>) and learning outcomes (Y) is  $0.062 > 0.05$ , meaning that there is no significant relationship between the role of students and learning outcomes. While the Pearson Correlation value is 0.151 the direction of the relationship is positive. Then it can be concluded that the role of students is positively related to learning outcomes with the degree of relationship there is no correlation. The Pearson Correlation value can also be compared with the r table, if the Pearson Correlation value  $> r$  table then it has a relationship, if the Pearson Correlation value  $< r$  table then it is not related. Pearson Correlation has a value of 0.151 while the r table with  $N = 154$ ,  $df = 154 - 2 = 152$  sig. 0.05 is 0.1582, it can be concluded that the Pearson Correlation value of  $0.151 < 0.1582$  (r table) there is no relationship between the role of students and learning outcomes.

Based on the t-test used to obtain significant variables, it is known that the value of Sig. for X<sub>2</sub> o Y is equal to  $0.062 > 0.05$  and the value of tcount  $1.878 < t$ table 1.976, the calculation of the value of ttable ( $\alpha = 0.05$ ). So it can be concluded that H<sub>2</sub> is rejected, which means that there is no significant relationship between the student role variable (X<sub>2</sub>) and the learning outcome variable (Y). The following is hypothesis testing using t-test and simple correlation.

Table 10. Second Hypothesis t-Test Results

Coefficients <sup>a</sup>						
Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	57.374	6.570			8.733	.000
1 Student Role (X2)	.128	.068	.151		1.878	.062

a. Dependent Variable: Learning outcomes (Y)

### 3. Third Hypothesis Testing (H<sub>3</sub>)

The third hypothesis tested was the relationship between the use of teaching materials (X<sub>1</sub>) and the role of students (X<sub>2</sub>) on the learning outcomes (Y) of the students of the lathe engineering vocational school in Palembang. Hypothesis testing using multiple correlation analysis, data management using software SPSS (Statistical Package for the Social Sciences) version 21. Based on the basic decision-making in the multiple correlation test, if the value of sig. F Change < 0.05, then it is correlated. If the value of sig. F Change > 0.05, then it is not correlated. The following output results with SPSS are as follows:

Table 11. Third Hypothesis Test Results

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	F Change	df1	df2	Sig. F Change
1	.245 <sup>a</sup>	.060	.048	8.79063	.060	4.815	2	151	.009

a. Predictors: (Constant), Student Role (X2), Use of Teaching Materials (X1)

Based on the results of the SPSS output above in table 11 with a summary model, the sig value is generated. F Change is 0.009. Because of the value of sig. F change < 0.05, then the decision is that the variable use of teaching materials and the role of students is related simultaneously and significantly to the variable learning outcomes. The calculated r-count can also be compared with the r table to determine the relationship, if the calculated r count > r table then it has a relationship, and if the calculated r count < r table then there is no relationship. The calculated r-value has a value of 0.245 while the r table with N = 154, df = 154-2 = 152 sig. 0.05 is 0.1582, it can be concluded that the calculated r-count 0,245 > 0,1582 r table, so there is a simultaneous relationship between the use of teaching materials and the role of students with learning outcomes.

The results of the analysis with the F test and multiple correlations resulted that among the variables of the use of teaching materials (X<sub>1</sub>), the role of students (X<sub>2</sub>) simultaneously there was a significant relationship to learning outcomes (Y). This is indicated by 0.009 < 0.05 and the value of Fcount 4,815 > Ftable 3,06, he calculation of the value of Ftable ( $\alpha = 0,05$ ) is attached in Appendix 5.I. So it can be stated that there is a significant relationship between the variables of the use of teaching materials (X<sub>1</sub>), the role of students (X<sub>2</sub>) on learning outcomes (Y) of Mechanical Engineering Vocational High School in Palembang. The following is the hypothesis testing using the F test and multiple correlations.

Table 12. Third Hypothesis F Test Results

ANOVA <sup>a</sup>					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	744.012	2	372.006	4.815	.009 <sup>b</sup>
Residual	11666.014	151	77.258		
Total	12410.027	153			
a. Dependent Variable: Learning outcomes (Y)					
b. Predictors: (Constant), Student Role (X <sub>2</sub> ), Use of Teaching Materials (X <sub>1</sub> )					

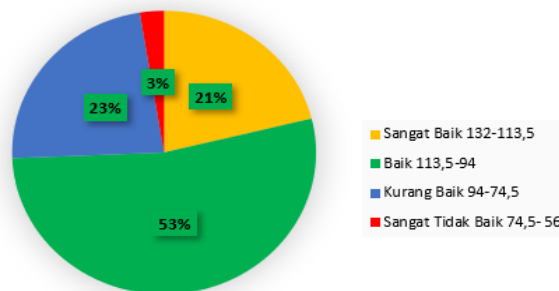
This study aims to determine several problems proposed to be answered in this study, namely: 1) The relationship between the use of teaching materials and learning outcomes; 2) The relationship of the role of students to learning outcomes; 3) The relationship between the use of teaching materials and the role of students on the learning outcomes of students in lathe engineering vocational school in Palembang. The research data collection was carried out in several stages, the first step was a pre-survey conducted in several vocational schools in Palembang. Data collection at this stage was obtained through interviews with educators and several students of class XII lathe machining techniques. Other data were obtained in the form of image documentation, daily grades of students, module teaching materials, school profiles, school structure, attendance, study schedule, syllabus, curriculum, lesson plans. Then the last data collection obtained was the results of the questionnaire/questionnaire, at the stage of testing the instrument and distributing the questionnaire, before testing the instrument and distributing the questionnaire to the sample, the instrument was first validated to obtain valid data (measurement results). When an instrument is valid, it can be tested and distributed to a predetermined sample. The sample used for the trial amounted to 50 samples and at the time of data collection, there were 156 samples of students. Based on the results of interviews, data documentation and research data questionnaire results obtained from 3 public vocational schools and 1 private vocational school in Palembang, namely SMKN 2 Palembang, SMKN 4 Palembang, SMKN Sumsel, and SMK YP Gajah Mada Palembang, and have been analyzed as follows:

#### 1. Description of Questionnaire Data

##### a. The Relationship of the Use of Teaching Materials to Learning Outcomes

This study aims to determine the relationship between the use of teaching materials on the learning outcomes of students of the lathe engineering vocational high school in Palembang. The following are the results of the data analysis that has been carried out:

Picture 4. Diagram Pie Variabel X<sub>1</sub>

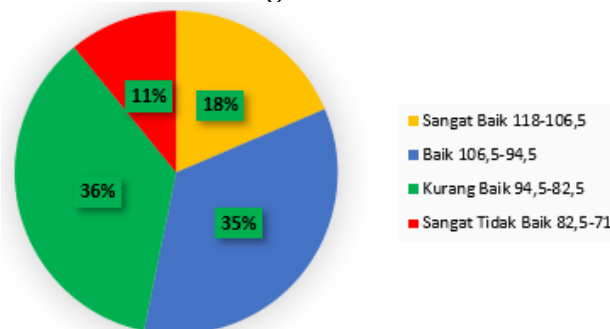


Based on the results of the analysis of data testing that has been carried out by researchers, the use of teaching materials, in this case, the effectiveness of the use of teaching materials for the lathe engineering student module in Palembang shows that it has a positive influence on learning outcomes with a correlation coefficient ( $r$ ) is 0.245 and a coefficient of determination ( $r^2$ ) is 0,060.

b. The Relationship of Students' Roles to Learning Outcomes

The purpose of this study was to determine the relationship between the role of students on the learning outcomes of students in the lathe engineering vocational school in Palembang. The following are the results of the data analysis that has been carried out:

Picture 5. Diagram Pie Variabel  $X_2$



The results of the analysis of data testing that has been carried out by researchers, the role of students in this case the activity of students in lathe machining techniques during learning in Palembang shows that it has a positive influence on learning outcomes with a correlation coefficient ( $r$ ) is 0.151 and a coefficient of determination ( $r^2$ ) is 0,023.

c. The Relationship between the Use of Teaching Materials and the Role of Students on Learning Outcomes

The purpose of this study was to determine the relationship between the use of teaching materials and the role of students on the learning outcomes of students in lathe engineering vocational schools in Palembang. The results of the analysis of data testing that has been carried out, the use of module teaching materials, and the role of students (Activity) of Mechanical Engineering Vocational Schools in Palembang simultaneously show that they have a positive influence on learning outcomes, the correlation coefficient ( $r$ ) is 0.060 and the coefficient of determination ( $r^2$ ) is 0.245. The magnitude of the influence of the variables can be seen in the following table:

Table 13. Effect of each variable

No	Variabel	R Square
1	X <sub>1</sub> , Y	0,060
2	X <sub>2</sub> , Y	0,023

Based on the value of R Square above, it can be seen the magnitude of the influence/relationship of the independent variable with the dependent variable, so it can be stated that the use of teaching materials has the highest influence on the learning outcomes of students of Mechanical Engineering Vocational School in Palembang.

The results of this study found that the use of teaching materials was positively and significantly related to learning achievement,  $0.004 < 0.05$  and the  $t_{\text{value}}$  was  $2,906 > t_{\text{table}}$  was  $1,976$ . The role of students has a positive relationship but not significantly related to learning achievement,  $0.062 > 0.05$  and the value of  $t_{\text{count}}$   $1.878 < t_{\text{table}}$   $1.976$ . The use of teaching materials and the role of students simultaneously gave a positive and significant relationship to learning achievement,  $0.009 < 0.05$  and the calculated  $F_{\text{value}}$  was  $4.815 > F_{\text{table}}$   $3.06$ . The results of other research are the use of teaching materials in the good category, the role of students is not good, and learning achievement in the covid-19 era is in the good category.

Based on researchers from Evi (2021), it is known that the use of e-learning media in learning mathematics during the COVID-19 pandemic is in the poor category based on indicators, teacher's ability to manage learning, student activities, student responses, and learning outcomes tests. learners. If the use of media is still difficult, educators can optimize the use of module teaching materials in order to overcome the poor learning outcomes of students, because in this study it was found that the use of teaching materials had the highest influence on the learning outcomes of mechanical engineering vocational students in Palembang.

Furthermore, based on the results of research from Asrilia (2020), which was carried out by filling out a questionnaire, in general the implementation of learning from home (BDR) for grade VI students of SD Muhammadiyah 18 Surabaya was quite effective. It is recommended that in learning from home (BDR), teachers are required to be able to design learning activities from planning to an evaluation in a simpler, more creative and effective way. Planning that can be done by teachers is to design the use of student module teaching materials so that learning becomes more effective. In this study it was found that the use of teaching materials had the highest influence on the learning outcomes of mechanical engineering vocational high school students in Palembang, so the use of teaching materials should be optimized and taken seriously by educators.

Another study from Nilasari et al. (2016), it was found that using the contextual learning module there were differences in student learning outcomes. Thus, there is an effect of the use of contextual learning modules on student learning outcomes in class V. The existence of this influence is indicated by the average posttest score of control class learning outcomes of 70.00 which is lower than the posttest value of experimental class learning outcomes of 82.27. Furthermore, the results of statistical analysis using an independent t test assisted by IBM SPSS 21 showed significant results,  $p \text{ value} = 0.01 < 0.05$ , so  $H_0$  was rejected. Therefore, it can be concluded that the use of contextual learning modules has an influence on the learning outcomes of fifth graders on thematic content at SD Muhammadiyah 9 Malang. In line with this research, this study also found that the use of teaching materials had the highest influence on the learning outcomes of mechanical engineering vocational high school students in Palembang, so

it can be concluded that module teaching materials can have an influence on student learning outcomes at the elementary and vocational school levels. Research from Puspitasari (2019) also strengthens that the use of electronic modules is very effective in increasing students' learning motivation, besides that it is also effective for improving student learning outcomes, as well as critical thinking skills. In line with this research, this study found that the use of teaching materials in this case the effectiveness of the use of teaching materials for students' modules for lathe machining techniques in Palembang showed that it had a positive influence on learning outcomes.

As for the results of research from Tsayania (2020), it was found that in its implementation, the online school concept brings significant obstacles and impacts for both children as students and teachers as teaching staff. Lack of adequate supporting facilities and limited understanding of access to technology and internet networks are the main obstacles felt by both parties. One of the facilities needed in learning activities is module teaching materials which must facilitate students so that learning can be well received by students. In this study, it was found that the use of module teaching materials and the role of students (Activity) of Mechanical Engineering Vocational School in Palembang simultaneously showed a positive influence on learning outcomes, so the use of module teaching materials became one of the aspects that must be considered so that students' learning outcomes learn to be optimal.

In the study of Padwa & Erdi (2021), it was stated that the use of e-modules was more attractive to students than the usual print media modules. Several studies have explained the effectiveness of the module as a learning medium. Therefore, e-modules can be used as learning media and will be more interesting with other innovations. Next, the results of research from Nurhidayati et al. (2019) which is described from the data on the value of learning outcomes in the cognitive domain from the e-module class, it can be seen that there is an increase in learning outcomes that are influenced by the PBL learning model using e-module teaching materials. Module teaching materials have a positive influence on learning outcomes even though they are used with learning models. Module teaching materials have an important role in learning so if they are used properly, student learning outcomes will also be good because the use of teaching materials has the highest influence on student learning outcomes.

This research has contributed to making educators aware that module teaching materials have a great influence on student learning outcomes, then it is connected to other learning support applications, namely Via Zoom Meeting, Meet, SiSMART so that educators are expected to optimize the use of module teaching materials and the role of students properly.

## **CONCLUSION**

Based on the results of data analysis of the relationship between the use of teaching materials, the role of students on learning outcomes at the lathe engineering vocational school in the Covid-19 era in Palembang, the following conclusions were obtained: The use of teaching materials is positively and significantly related to the learning outcomes of lathe engineering SMK students in Palembang in the covid-19 era. The role of students has a positive direction of relationship but there is no significant relationship to the learning outcomes of students at the lathe engineering vocational school in Palembang in the covid-19 era. There is a positive and significant relationship between the use of teaching materials and the role of students on the learning outcomes of lathe engineering vocational school students in Palembang in the covid-19 era.

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## AUTHOR CONTRIBUTION STATEMENT

RH (Rudi Hermawan) is the main researcher in this research. SM and MLOS acted as mentors in conducting this research. Guidance is provided from all aspects from the beginning to the end of the research. Submission of this article is done with permission of SM and MLOS.

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