



## The Effect of Google Classroom Media on Student Learning Outcomes in Lathe Machinery Engineering Class XI SMKN 5 Medan, North Sumatera, Indonesia

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**ABSTRACT:** The purpose of this study was to find out whether there is an influence between online learning using Google Classroom media on student learning outcomes in Class XI Lathe Machinery Engineering at SMKN 5 Medan, North Sumatera, Indonesia. This research used quantitative methods. The population in this study were students of class XI SMKN 5 Medan with a descriptive statistical approach. Questionnaires and tests are used to collect data. Furthermore, simple linear regression analysis was used to analyze the data. Based on the research findings, it is known that the sig. of 0.009, which is less than the alpha value of 0.05, means that  $H_0$  is rejected and  $H_a$  is accepted. As a result, online learning using Google Classroom has a significant influence on student learning outcomes Lathe Engineering at SMK Negeri 5 Medan by 10.3%. The percentage of 10.3% is derived from the R Square value, which is 0.103 or the equivalent of 10.3%, while the remaining 89.7% is influenced by other factors.

**KEYWORDS:** Google classroom; Online learning; Student learning outcomes.

### INTRODUCTION

The advancement of science and technology continues at a breakneck pace. Changing occurs at a rapid pace, in addition to rapid development. With technological advancements, the world of education now incorporates technology into the learning process, so that learning is not limited by space and time. Online learning, also known as e-learning, is one method of learning that makes use of technology. Online learning is defined as learning through the use of a distance learning system, as well as online collaboration between students and teachers or lecturers [1]. According to Nadzirah [2], e-learning is a learning method that employs web-based information technology that can be accessed remotely, allowing the teaching and learning process to take place not only in the classroom and during specific hours, but also at any time and from anywhere.

There are many applications and websites that can be used as supporting media in replacing the learning process in the classroom when using e-learning, which is commonly referred to as online learning media. According to Arnesi and Hamis [3], online learning media is media that includes a controller that the user can use to control and access what the user requires. Google Classroom is one of the online learning media that can be used. Google Classroom was chosen because learning media as a whole is quite effective in terms of aspects of lesson planning, aspects of designing and producing materials, aspects of delivery methods, aspects of learning interactions, aspects of learning evaluation, and learning implementation criteria, with a trend rate of 77.27% [4].

By using Google Classroom as an online learning medium, teachers can save time, collect assignments in a simple and paperless manner, students can organize assignments and material that has been given, good communication is maintained, and many people use it because Google Classroom is provided free of charge, so teachers and students only need an internet network to access it. This explanation is consistent with the belief [5] that the benefits of Google Classroom are as follows: 1) easy preparation for use, 2) time savings, 3) simple paperless assignments, 4) can improve organization, 5) improve communication, and 6) cost-effective. Because of the spread of the corona virus in Indonesia, which caused a delay in face-to-face activities (involving masses in one gathering point of more than 20 people), all teaching and learning activities for students were temporarily carried out at home through online or online learning.

According to the findings of researchers at SMKN 5 Medan, the midterm exam scores (UTS) for class XI lathe machining techniques decreased but remained below standard. The authors are interested in conducting research with the title "The Effect of Online Learning Using Google Classroom Media on Learning Outcomes of Class XI Lathe Engineering Students at SMKN 5 Medan" based on the description of the problem above.



## METHODS

### *Research Population*

The population is the totality of the characteristics of the object under investigation. The participants in this study were students from SMKN 5 Medan's class XI Mechanical Engineering. The specifics are as follows.

**Table 1.** Research Population

No.	Class	Number of Participants
1	TPM 1	32
2	TPM 2	34
Total		66

### *Sample Population*

The study is guided by Arikunto's opinion [13], which states: "For just random, if the subject is less than 100, it is better to take all of them so that the research is a population study." Because the total population in this study was less than 100, the sample was drawn using a total sampling techniques. As a result, the researcher selected an overall sample of 66 students from class XI Mechanical Engineering at SMK Negeri 5 Medan.

### *Type of Research*

This is a quantitative study in which the outcomes of observations are converted into numbers so that statistical techniques can be used to analyze the data. Quantitative data is information in the form of numbers or scores, and it is processed using the SPSS 25 application.

### *Data Collection Techniques*

Questionnaires and test methods were used to collect data in this study. Questionnaires or questionnaires are data collection techniques in which respondents are given a set of questions or written statements to answer [14]. This data collection method is used to obtain data about the use of Google Classroom, whereas the test method, according to Hamzah and Satria [15] in his book entitled Learning Assessment, is a set of tasks that students must complete or a number of questions that students must answer to measure the level of understanding and mastery of the scope of material required and in accordance with certain teaching objectives. Test-type research instruments are used to measure learning outcomes in the context of learning. The data retrieval technique used in this test aims to determine the learning outcomes of class XI mechanical engineering students at SMKN 5 Medan.

## DATA ANALYSIS TECHNIQUE

### *Descriptive Analysis*

It is common for descriptive analysis to provide information data that is unrelated to hypothesis testing. Data will be obtained in the form of mean values, minimum values, maximum values, and standard deviations in this descriptive analysis.

### *The Prerequisite Test (Inferential Analysis)*

The prerequisite test or inferential analysis in this study was carried out before testing the research hypothesis. Prerequisite tests in this study included normality tests and linearity tests which were carried out with the help of SPSS version 25 software.

### *Simple Regression Analysis*

The following steps are used in this analysis to determine the effect of online learning using Google Classroom media on student learning outcomes in the Lathe machining engineering subject [16]:

$$Y = a + bx$$

Where:

Y: The subject in the predicted dependent variable.

a: If X = 0, price Y (constant price)

b: The direction number or regression coefficient that shows the increase or decrease in the dependent variable based on the independent variable; if b (+), the dependent variable increases; if b (-), the dependent variable decreases.

x: Dependent on the independent variable, which has a specific value. Internship

**RESULTS AND DISCUSSION**

**Validity Test Results**

The Google Classroom instrument has 7 invalid statement questions and 23 valid statement item items based on the results of the validity test from 30 statement questions (Table 2). The calculated price is less than the rtable price, indicating that the statement questions are invalid. The seven invalid statement questions are then avoided. As a result, the data collection items are 23 statement questions. Following are the results of the validity test using the SPSS 25 program:

**Table 2.** Validity Test Results

Variabel	Number of Questions	Number of Unvalid Questions	Number of Valid Questions
Google Classroom	30	7	3
Student Learning Outcomes	30	2	8

While the validity test results were obtained from 30 items of statement questions on learning outcomes instruments, which included 2 items of invalid statement questions and 28 items of valid statement questions. The calculated price is less than the rtable price, indicating that the statement questions are invalid. These two invalid statement questions are then avoided. So the data collection item items are 28 statement item items.

**Reliability Test Results**

A reliability value of 0.912 was obtained from 23 total item statement questions administered to 30 students based on the results of data processing using SPSS 25 software. The research instrument was said to be extremely reliable.

A reliability value of 0.896 was obtained from 28 total item statement questions administered to 30 students based on the results of data processing using SPSS software. The research instrument was said to be extremely dependable.

**Table 3.** Reliability Test Results

Variable	Number of Questions	Cronbach's Alpha	Explanation
Google Classroom (X)	23	0.912	reliable
Student Learning Outcomes (Y)	28	0.896	reliable

**Analysis Results of Variable Data Description Using Google Classroom**

The highest score was 90, and the lowest score was 53, based on the analysis of variable data using Google Classroom and the SPSS Statistics 25 computer program, with a Mean (M) value of 67.95, Median (Me) of 67.00, and Mode (Mo) of 67.



**Figure 1.** Online Learning Histogram Using Google Classroom



**Description of Student Learning Outcome Variable Data**

In the main data tabulation, it can be obtained that the score of the student learning outcomes variable has the lowest score of 71.42 and the highest score is 92.85, so the range of values is 21.43. From the results of calculations using the SPSS Version 25 for windows program, the average price (M) = 82.40, median (Me) = 82.14 and mode (Mo) = 82.14. So that the details of the calculation results of the analysis of the data description variable student learning outcomes can be seen in the following table:

**Table 4.** Student Learning Outcome Variable Data

No	Interval Score	Frequency
1	60-70	0
2	70-80	25
3	80-90	36
4	90-100	5

Data on the frequency distribution of student learning outcomes can be observed through the histogram in the following figure:



**Figure 2.** Histogram of Student Learning Outcome Frequency Distribution Data

**Normality Test Results**

The normality test is carried out to find out whether the distribution of a data follows or approaches a normal distribution or not. The criteria used to determine the normality test with the One Simple Kolmogorov Smirnov method, simply read the significance value (Asymp. Sig. 2-tailed). If the significance > 0.05 then the data is stated to be normally distributed, whereas if the significance is <0.05 it is stated that the data is not normally distributed.

**Table 5.** One Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		66
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	1.42349889
Most Extreme Differences	Absolute	.085
	Positive	.085
	Negative	-.058
Test Statistic		.085
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>



Where:

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

Based on the table above, the results of the normality test for the distribution of scores show that the significance value (Asymp. Sig. 2-tailed) is 0.200 with a significance level of > 0.05, which means that the residual data is normally distributed.

**Linearity Test Results**

The results of the linearity test can be seen in full in the appendix and a summary of the results of the linearity test can be seen in Table 6 below:

**Table 6.** Summary of Linearity Test Results

Google Classroom Learning Outcomes	Between Groups	(Combined)	45.189	20	2.259	1.000	.480
		Linearity	15.151	1	15.151	6.706	.013
		Deviation from Linearity	30.038	19	1.581	.700	.799
	Within Groups		101.675	45	2.259		
	Total		146.864	65			

Based on these findings, the deviation from linearity sig. is 0.799 greater than 0.05, implying that there is a linear relationship between Google Classroom learning and student learning outcomes.

**Results of Simple Regression Analysis**

After all the data has passed the prerequisite test, then the data is tested in a simple linear regression to calculate whether there is a significant effect between learning using Google Classroom media and the learning outcomes of class XI Lathe Machining Engineering students at SMK Negeri 5 Medan. Following are the test results using SPSS 25:

**Table 7.** Results of Simple Regression Analysis

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.411	1.717		10.721	.000
	Google Classroom	.068	.025	.321	2.713	.009

a. Dependent Variable: Hasil Belajar



**Table 8.** Results of Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.321 <sup>a</sup>	.103	.089	1.435
a. Predictors: (Constant), <i>Google Classroom</i>				

Based on the results of calculations using simple linear regression analysis in the SPSS 25 application, the tcount value is 2,713 and the table value is 1,670 for n = 66, which can be interpreted as tcount 2,713 > ttable 1,670 and the sig. of 0.009, so that the sig. is less than the alpha value of 0.05, Ho is rejected and Ha is accepted. As a result, online learning using Google Classroom has a significant influence on student learning outcomes at SMKN 5 Medan by 10.3%. The percentage of 10.3% is obtained from looking at the R Square value which has a value of 0.103 or the equivalent of 10.3%. Meanwhile for 89.7% influenced by other factors.

**CONCLUSION**

From the results of research on the effect of online learning using Google classroom on student learning outcomes at SMK Negeri 5 Medan for the 2021/2022 academic year that has been carried out by the author, it can be concluded that there is a significant influence between online learning using Google Classroom on student learning outcomes at SMK Negeri 5 Medan. And when viewed from the model summary table, it can be seen that the R Square value is 0.103 or the equivalent of 10.3%. So, based on these findings, online learning via Google Classroom has a 10.3% impact on student learning outcomes at SMK Negeri 5 Medan. Based on this analysis, it is possible to conclude that the Ha hypothesis is accepted, and that there is a significant influence of 10.3% between online learning using Google Classroom on student learning outcomes at SMK Negeri 5 Medan for the 2021/2022 academic year. Other factors influence 89.7% of the total.

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