Effectiveness of using g-learning in online lectures for students during the Covid-19 pandemic

Budianto*, Rahmad Setia Budi, Pandu Prabowo Warsodirejo

Faculty of Teacher Training and Education, North Sumatera Islamic University, Medan, 20217, Indonesia
*Corresponding Author: budianto@fkip.uisu.ac.id | Phone: +62822-7718-0617

A B S T R A C T

This study aims to determine whether G-Suite *(Google Learning Application)* is effective in student online lectures and can provide a good and efficient academic atmosphere during the Covid-19 pandemic. The research approach uses quantitative with a quasi-experimental type. The data collection technique was carried out through the distribution of online surveys to all students of the Biology Education Study Program, Faculty of Teachers Training and Education, North Sumatra Islamic University (UISU) who learned to use the G-Suite during the Covid-19 pandemic. Based on the calculation results obtained that t-count of 2,901. After being consulted with the t-table at a significance level of 5% and db 68 of 1.990, it turns out that the t-count is greater than the t-table (2.901 > 1.990) so that Ho which reads there is no difference in student outcomes between groups of students taught using the G-Suite and groups of students who were taught without using the G-Suite media have been successfully rejected. Thus, Ha, which reads that there is a significant difference in lecture learning outcomes between groups of students who are taught using G-Suite media and groups of students who are taught without using G-Suite media.

INTRODUCTION

The Covid-19 pandemic, which was very troubling and troublesome for everyone at the end of 2019 to 2020, had a negative impact, almost all elements and groups were affected by this Covid-19. It can't even be separated from the world of Academic Education. Many universities have experienced lockdown several times during this pandemic. This is a terrible specter and frightens everyone. Every parent is worried about the safety of their child at school whether he is exposed to Covid-19 or not. The government also issued a ban on carrying out academic activities face-to-face as usual in classrooms to prevent the spread and transmission of COVID-19 which is very easy and fast. This has a serious impact, especially on universities.

The Islamic University of North Sumatra is the only oldest university in North Sumatra with one of its faculties being the Faculty of Teacher Training and Education (FKIP). FKIP has 7 study programs, namely PBSI, Mathematics Education, Biology Education, Physics Education, Chemistry Education, History Education, and PKN Education. Biology Education has more than 300 students. The number of classes in the 2020-2021 FY is 4

Regular classes. The learning process in the Biology Education study program is currently carried out with an online system *(online)* using e-learning. Many students complain about lectures using E-Learning. From the results of interviews with several students in the field, they stated that it was almost the same "if you really have to study online, don't be difficult," this e-learning application sometimes gets errors "we can't log in" so we ride with a friend's account ", sometimes I can't log in or log in. in, and so on various student complaints. Like it or not, they have to keep up, even though during this pandemic many of them *(students)* are studying while working to help pay for their tuition and that of their parents. Online lectures using E-learning are very inconvenient for them. Even so, students inevitably have to continue to follow online lecture activities using the E-Learning. The Research Team wants to implement the G-Learning system and look for answers and differences whether G-learning (google Learning) can be better or the same as E-Learning. The application of using G-Learning is certainly not as difficult as E-Learning. Because before using E-Learning, many

lecturers had used G-Learning but it was not perfect or in totality. Based on this explanation, the team plans to conduct research on this matter. The problem found in this research is how the Effectiveness of Using G-Learning in Online Lectures for FKIP UISU Students during the Covid-19 Pandemic.

METHOD

The location of this study was conducted at the UISU Faculty of Teacher Training and Education. Research implementation time starts from May to July 2021. The student sample is taken from the semester that is currently active during the 2021-2022 Odd period. The students who were used as the test samples were all FKIP UISU students with a sample of 70 students. With 36 people in the Experiment Class and 34 in the control class. Each active class per semester will be given an online questionnaire and collect it into Google Drive. The method of collecting data is qualitative, and quantitatively accumulated.

Research Design

The type of study used is quantitative research. The purpose of this study is to find the instrumental value of the results of G suite and E-Learning where the instrumental value aims to see the final results of the study of the use of applications from G suite and E-Learning held at the Biology Education Study Program, Faculty of Teacher Training and Education, Islamic University of North Sumatra. As an effort to prevent and spread Covid 19 in the university environment at UISU. Online learning referred to in this study is learning that uses media that are accessed through internet service facilities. The research was conducted by first conducting a survey to students in semester 1, 3, and 5 regarding the application of online learning. The survey was distributed using a Google Form that was given to students via WhatsApp messages, which then students responded to online learning through a survey submitted to students from all Study Programs at the Faculty of Teacher Training and Education at the Islamic University of North Sumatra who had carried out online learning and were grouped based on the responses of the research subjects. The selection of the G-Suite application that will be tested during research on students is selected 5 applications that are used, namely: 1. Google Classroom 2. Google Drive 3. Google Mail 4. Google Meet 5. Google Forms.

Data Analysis Techniques

The questionnaire used in the study consisted of 27 positive statements and 18 negative statements. Each statement is given 4 answer choices. The following is a scoring table for online learning questionnaires, learning interests and daily life of FKIP UISU students. After the data is obtained, then it is analyzed using the usual frequency distribution with the help of SPSS. The data obtained will be difficult to understand and read, so a frequency distribution is needed to collect the same scores in one group. Using frequency distribution analysis, the frequency of each score on each question will be known. Next, the data will be classified.

T-test

The t-test was used to determine whether there was a significant difference in lectures between the experimental group and the control group. Thus, it can be seen the difference in effectiveness between the two groups.

$$t = \frac{Md}{\sqrt{\frac{\Sigma x^2 d}{N(N-1)}}}$$

t = coefficient sought Md = mean of the difference between pretest and posttest *(posttest-pretest)* x^2d = sum of squared deviations N = number of subjects db = specified with N-1 Test Research Data Analysis Requirements Distribution Normality Test The distribution normality test is used to test whether the distribution of research data is normal or not. In this study, the distribution normality test used the Kolmogorov-Smirnov formula. In the calculation with this formula, if the significance value is more than 0.05 (α: 5%) then the data in this study is normally distributed.

Variance Homogeneity Test

In addition to the distribution normality test, it is also necessary to test the homogeneity of variance which aims to determine whether the samples taken have the same variance and do not show significant differences from one another.

$$F = \frac{s^2 b}{s^2 k}$$

s^2b = larger variance s^2k = smaller variance The homogeneity test requirement is that if the F-count is greater than the F-table, the variance is not homogeneous and vice versa, if the F-count is smaller than the F-table, the variance is homogeneous.

Statistical Hypothesis

The statistical hypothesis is also called the null hypothesis (H0). The null hypothesis states that there is no difference between the two variables or there is no effect of X on Y. While the alternative hypothesis (Ha) states that there is a different relationship between the two variables X and Y. The formulation of the hypothesis in this study is: H0: p1 = p2. There is no significant difference between the class of students who are taught using the Google Suite application

and the group of students who are taught without using the Google Suite application. Ha: p1 ≠ p2 there is a significant difference between the class of students who are taught using the Google Suite Application and the group of students who are taught without using the Google Suite Application. Ha: p1=p2. the use of Google Suite Applications in the lecture process is as effective as teaching Google Suite Applications Ha: p1>p2 The use of Google Suite Applications in lectures is more effective than lectures without using Google Suite Applications.

RESULTS AND DISCUSSIONS

The pretest t-test analysis technique aims to determine differences in the level of writing skill achievement in the early stages. The results of calculating the pretest t-test for the experimental class and the control class using the SPSS version 17 program can be seen on the appendix page. While the summary of the results of calculating the pretest t-test for the experimental class and the control class is listed in the **Table 1.**

Table 1. Summary of pretest T-test calculation results for experiment class and control class

Class	Mean	T-count (th)	T-table (tt)	db	P
Eksperiment	6,13	0,363	1,990	68	0,718
Control	6,24				

Description:
db: degrees of freedom P: probability
Based on the calculation results obtained tcount (th) of 0.363. After consulting with ttable at a significance level of 5% and db 68 of 1.990, it turned out that tcount was smaller than ttable (0.363 <1.990) meaning that there was no significant difference in the pretest of the experimental class and the control class. Experiment Class Post Test Data After receiving treatment using G-Learning media in learning, the experimental class students were given a posttest, the post-test was followed by 36 students from the post-test results. Given a mean value of 8.03 mode 8.0 and standard deviation 1.082

Table 2. Frequency Distribution of Experiment Class Posttest Score

No.	Interval Class	Absolute Frecuency	Cumulative Frecuency	Relative Frecuancy (%)
1.	9,2 – 10,0	4	36	11,11
2.	8,4 – 9,1	11	32	30,56
3. 4.	7,6 – 8,3	7	21	19,44
5.	6,8 – 7,5	9	14	25
6.	6,0 – 6,7	5	5	13,89
	Total	36		100

The table above shows that the highest score obtained by students is 10.0 while the lowest score is 6.0. The values that occur most often are in the interval class 8.4-9.1 while the values that occur rarely are in the interval class 9.2 – 10.0. The table above can be described in the form of a bar chart as follows.

Control class post test data
The control class was given the same posttest questions as the experimental class. The posttest was attended by 34 students. From the posttest results, the average value (Mean) = 7.18; Median = 7.0; Mode = 7.5; Standard Deviation = 1.364.

Table 3. Frequency Distribution of Control Class Posttest Score

No.	Interval Class	Absolute Frecuency	Cumulative Frecuency	Relative Frecuancy (%)
1.	8,9 – 10,0	4	34	11,76
2.	7,8 – 8,8	5	29	14,71
3.	6,7 – 7,7	12	25	35,3
4.	5,6 – 6,6	8	13	23,52
5.	4,5 – 5,5	5	5	14,71
	Total	34		100

The table above shows that the highest score obtained by students is 10.0 while the lowest score is 4.5. The values that occur most often are in the interval class 6.7 – 7.7, while the values that occur rarely are in the interval class 8.9 – 10.0.
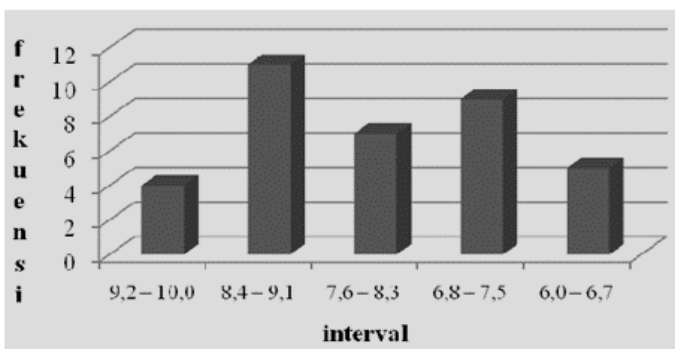
Discussion

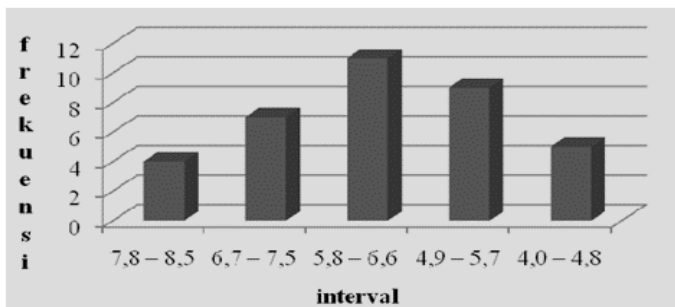**Figure 1.** Experiment Class Post-Test

Figure 2. Experiment Class Pree-Test

Hypothesis test

The alternative hypothesis (Ha) proposed in this study reads that there is a significant difference between a group of students who are taught using G-Learning media and a group of students who are taught without using G-Learning media. For testing purposes, the alternative hypothesis was changed to the null hypothesis (H0) so that it reads: there is no difference between the group of students who are taught using G-Learning media and the group of students who are taught without using G-Learning media. If the value of tcount (th) is greater than ttable (tt) with a certain level of error used, namely 5% and related db (68), then H0 is rejected and Ha is accepted.

CONCLUSION

Based on the calculation results obtained tcount (th) of 2,901. After being consulted with ttable at a significance level of 5% and db 68 of 1.990, it turned out that tcount was greater than ttable (2,901 > 1.990) so that H0 which reads there is no difference in student lecture results between groups of students who are taught using Google Suite and groups of students who are taught without using Google Suite media has been rejected successfully. Thus, Ha which reads that there is a significant difference in lecture learning outcomes between groups of students who are taught using Google Suite media and groups of students who are taught without using Google Suite media.

Author's Contributions

All team members contributed equally in the writing of this article. They carry out collaborative activities according to the tasks and functions that have been mutually agreed upon, from research planning to writing articles for journals.

Conflict of Interest

All authors in this manuscript have no conflict of interest. All team members work professionally according to their expertise.

REFERENCES

Afifuddin. (2013). Pengembangan Aplikasi.Mobile-Learning pada Smarthphone Berbasis Android. Skripsi tidak diterbitkan. Yogyakarta: FST UIN Kalijaga.

Ally, M., & Prieto-Blázquez, J. (2014). What is the future of mobile learning in education?. International Journal of Educational Technology in Higher Education.

Daryanto. (2010). Media pembelajaran peranannya sangat.penting dalam mencapai tujuan. pembelajaran. Yogyakarta: Gava Media.

Diki, D. (2013). Creativity for Learning Biology in Higher Education. LUX: A Journal of Transdisciplinary Writing and Research from Claremont Graduate University: Vol. 3: Iss. 1, Article 3.

Degeng. (2013). Ilmu pembelajaran klasifikasi variabel untuk pengembangan teori dan penelitian. Bandung: Aras Media.

Firman & Sari. (2020*). Pembelajaran Online di Tengah Pandemi Covid-19. Indonesian Journal Of Educational Science (IJES),* Volume 02No 02

Keengwe, J., & Bhargava, M. (2014). Mobile learning and integration of mobile technologies in education. Education and Information Technologies, 19(4), 737-746.

Purwanto dkk. 2020. Studi Eksploratif Dampak Pandemi COVID-19 Terhadap Proses Pembelajaran Online di Sekolah Dasar. Journal of Education, Psychology, and Counselling. Volume 2 No. 1.

Maulana, L. M. L. (2017). Pengembangan media pembelajaran berbasis mobile learning dengan platform android materi keselamatan kesehatan kerja dan lingkungan hidup (K3LH) pada program studi ketenagalistrikan untuk siswa sekolah menengah kejuruan. Jurnal Pendidikan Teknik Mekatronika, 7(2).

Nunung, N., Syaiful, A., & Teti, S. (2014). Buku guru biologi untuk SMA/MA kelas XI. Bandung: Yrama Widya.

Sugiyono (2019). Metode Penelitian Kualitatif, Kuantitatif, dan R&D. Bandung: Alfabeta.

Surahman, E., & Surjono, H. D. (2017). Pengembangan adaptive mobile learning pada mata pelajaran biologi SMA sebagai upaya mendukung proses blended learning. Jurnal Inovasi Teknologi Pendidikan, 4(1), 26-37.

Surahman, E. (2019). Integrated Mobile Learning System (Imoles) Sebagai Upaya Mewujudkan Masyarakat Pebelajar Unggul Era Digital. JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran) Kajian Dan Riset Dalam Teknologi Pembelajaran, 5(2), 50-56.