Sriwijaya International Journal of Lesson Study
Vol. 3, No. 1, March 2022, pp. 37-46
P-ISSN: 2722-0370; E-ISSN: 2722-3310
DOI: https://doi.org/10.36706/sij-ls.v3i1.19

Analysis of the Application of Google Classroom During the COVID-19 Pandemic in Chemistry Learning

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Abstract

This Study aims to analyze the application of google classroom during the covid-19 pandemic in chemistry learning, as well as the efforts of teachers and students in improving students understanding of the material. The population in study this is all students of class XI MIA 1 and XI MIA 2 at SMAN 1 Sarudu which totaling 62 students. This type of research is quasi-experimental research with research design using pretest and posttest experimental group and control group. Sampling was carried out based on special considerations (purposive sampling) with the research sample of XI MIA 1 totaling 31 students as an experimental class with a learning model that used google classroom, and XI MIA 2 totaling 31 students as a control class using conventional learning models. Data collection techniques using test techniques. Based on the results research on the analysis of the application of google classroom during the covid-19 pandemic in chemistry learning, researcher could interesting conclusion that there is improvement of student learning outcomes after the implementation of google classroom during the covid-19 pandemic in chemistry learning. This is based on the results of calculations using the SPSS version 25 application where the value of Sig (2-tailed) = 0.000 < 0.05 then Ha is accepted and Ho is rejected, it means that there is a significant influence on the use of google classroom during the covid-19 pandemic on chemistry learning.

Keywords: lesson study, on job training, school field introduction

Abstrak

Lesson study diterapkan sebagai salah satu metode untuk meningkatkan keterampilan mengajar calon guru-siswa ketika praktik mengajar di sekolah. Indonesia menggunakan istilah Pengenalan Lapangan Sekolah (PLP) untuk kegiatan praktik mengajar di sekolah, sedangkan di Jepang digunakan istilah On Job Training (OTJ). Penelitian ini mengkaji perbedaan metode Lesson Study yang dianut di Perguruan Tinggi di Indonesia dan Jepang, kemudian mengadaptasi metode Lesson Study OTJ di Jepang, untuk diterapkan pada mata kuliah PLP II Pendidikan Biologi UIN Jakarta. Metode penelitian dilakukan dengan observasi langsung dan tidak langsung. Observasi tidak langsung melalui channel YouTube praktik pembelajaran Lesson Study pada PLP II di salah satu perguruan tinggi di Indonesia. Observasi langsung dan wawancara mendalam dilakukan kepada OTJ di SMP Afiliasi Toyama University Jepang. Adaptasi OTJ Jepang dilakukan dalam dua tahap. Tahap pertama dilakukan di dua sekolah di Jakarta dan Depok dengan melibatkan dua guru dan delapan siswa. Tahap kedua dilakukan di salah satu sekolah di Depok yang melibatkan satu guru dan empat siswa. Hasil penelitian menunjukkan adanya perbedaan antara Lesson Study yang berkembang di Indonesia dan Jepang. OTJ di Jepang menekankan pada kolaborasi dan kerjasama antar calon guru-siswa dalam meningkatkan keterampilan mengajar. Sedangkan di Indonesia yang menekankan kolegialitas antara mahasiswa PLP, guru pamong, dan dosen pembimbing. Penerapan OTJ Jepang pada PLP II Pendidikan Biologi menunjukkan bahwa metode ini dapat meningkatkan rasa percaya diri siswa, meningkatkan kreativitas metode dan media pengajaran, membuat LKS, meningkatkan pengelolaan kelas, dan meningkatkan keterampilan mengajar.

Kata Kunci: *lesson study,* pelatihan kerja, pengenalan lapangan sekolah

How to Cite: Ainun, Mustapa, K., Ratman, & Marpaung, M. E. (2022). Analysis of the application of google classroom during the covid-19 pandemic in chemistry learning. *Sriwijaya International Journal of Lesson Study*, *3*(1), 37-46.

INTRODUCTION

Education is one of the human efforts to help growth in the life process by forming fundamental skills or basic skills that include intellectual and emotional aspects that are useful or beneficial for humans, especially themselves and the environment. Strong human resources can be realized with quality research and become a barometer of the development of a nation (Syafril & Zelhendri, 2017).

One of the efforts or ways to improve the quality of education needs to be done by improving the quality of teacher and the learning process. Lesson study is a model for fostering the teaching profession through collaborative and sustainable learning assessments based on the principles of coolegiality and mutual learning to build a learning community. Improving the quality of education through lesson study starts from the planning stage (plan) which aims to design learning that can teach students to actively participate in the learning process (Meilani, 2021).

Entering the 21st century, the world of education has undergone many paradigm changes, especially in the learning process, which has changed from teacher-centered to student-centered, from one-way to interactive, and from the real world to the virtual world context. But in fact the learning principle is still not widely applied in the learning process in schools, especially in chemistry learning (Khumairah et al., 2020).

Chemistry is the study of composition, structure, properties, changes, and the energy that accompanies them. In chemistry, we study natural phenomena. Based on these natural phenomena, concepts, theories, and laws are compiled, then can be reused to explain these natural phenomena, chemistry relates three levels, namely macroscopic, microscopic and symbolic (Redhana, 2019). Chemistry is abstract and requires student activity in solving various problems in problems related to chemistry both within the scope of the school and outside the school scope (Bintarawati & Citriadin, 2020).

Along with the outbreak of the Covid-19 virus in Indonesia, it has an impact on the world of education. The pandemic process continues to change the process of education and training throughout the world, even many countries have adapted to these new conditions, especially in the field of education (Polat, 2022). Teaching and learning activities, which are usually carried out face-to-face in class, have shifted to teaching and learning activities at home through online/distance learning. Online learning is the use of the internet network in the learning process. Online learning students have the flexibility of learning time, can learn anytime and anywhere (Bintarawati & Citriadin, 2020). In the distance learning process, it requires educators to carry out online learning processes which of course require various online learning media so that learning can run as it should (Novira et al., 2021). One of the media used to conduct online learning is google classroom , where google classroom is very useful, adequate and provides new challenges and continues education in a different way (Astuti & Indriani, 2020). The researcher chose the google classroom application in this study because it is one of the most widely used forms of learning management system (LMS) applications by students because it is easy to use and students are more familiar (Hakim, 2016).

E-Learning as a new learning model in education provides a large role and function for the world of education which has been charged with the many shortcomings and weaknesses of conventional education (education in general) including the limitations of space and time in the conventional education process. Information technology that still has a standard platform from the internet, which allows everything to be connected to each other, the character of the internet is cheap, simple and open, resulting in the internet being able to be used by anyone (everyone), anywhere (everytime) and free to use (available), (to everyone) (Keban & Taufik, 2015).

The development of technology that has not been used properly by teachers is also one of the causes of low student learning outcomes. This is because teachers often teach using the whatsApp application where the whatsApp application is less effective in learning during the pandemic because the features available on whatsApp are very limited, unlike the google classroom Khumairah et al., 2020).

Google classroom is an application that has been used throughout the world during the covid-19 pandemic which is designed to facilitate interaction between students and teachers in cyberspace (Okmawati, 2020). This application provides an opportunity for teachers to explore their knowledge of ideas to students. The innovation provided by Google for education aims to help create active, effective, efficient and fun learning. This google classoom application can be used by anyone who has joined the class and has been designed by teachers according to real classes or real classes at school. This application is also designed to help teachers save time in terms of automatically making a copy of google documents for each student when giving assignments. Google classroom can also create a drive folder for each student's work to keep things organized (Hammi & Cedha, 2017).

The use of google classroom actually makes it easier for teachers to manage learning and convey information quickly and accurately to participants (Hardiyana & Andri, 2015). The choice of google classroom because assignments can be done in google classroom can then be discussed together between students and teachers (Tamin & Mohamad, 2020). Google classroom is designed for four users, namely students, teachers, guardians and administrators. The advantage of the google classroom application compared to other applications is that the google classroom application can be used to create and manage classes, assignments, grades, and provide direct input. Students can monitor class materials and assignments, share material and interact in class or via email, send assignments and get direct grade input (Longa, 2021).

The use of google classroom at SMA Negeri 1 Sarudu has not been used properly by teachers, this is because teachers when teaching more often use the whatsapp application during online learning. In addition, the results of an interview with one of the students at SMA Negeri 1 Sarudu, especially class XI, that they are very bored with online learning which only uses the WhatsApp application , so this also greatly affects their learning activities which may decrease student learning outcomes.

Based on the results of an interview with a chemistry teacher at SMA Negeri 1 Sarudu, information was obtained, if you look at the learning outcomes of class XI students, especially XI MIA 1 and MIA 2 during online learning, there are still many who have difficulties in chemistry lessons. Some of the causes are the lack of student interest in learning chemistry so that each student learning implementation does not focus on the learning, then the lack of use of media by teachers where teachers use WhatsApp application media more often without using other media so that students feel bored or bored. Student learning outcomes during the online learning period are significantly decreased, seen from the learning process and task collection, when compared to offline learning. This can be shown in the average daily test score for the odd semester for the 2020/2021 academic year, which is 59.5 with a KKM score of 75.

Distance learning activites that took place during the covid-19 pandemic have created several challengs for both teachers and studentr. Students are required ti have a high focus in order to understand the lesson optimally. Likiwise, teachers must present fun and interesting online learning methods so that they areeasy to understand. The method used in this research is blended learning, a method that uses two approaches at once. In the sense that this method uses an online system as

well as face-to-face through video conferences. So even though students and teachers are learning remotely, they can still interact with each other. In addition, the methods used by teachers are by utilizing social media as much as possible, prsenting subject matter creatively, and building interactive communication with all students.

Turmuzi and Hikmah (2021) about the Relationship between google classroom Online Learning during the Covid-19 Period and Learning Motivation. The results showed that the results of data analysis obtained that learning with google classroom and learning motivation had a significant relationship with learning outcomes. This condition is in accordance with the opinion (Daniati & Ismanto, 2020) which states that motivation and learning outcomes increase after going through the learning process with the google classroom application.

Qolbhy and Lazulva (2020) conducted research on the Effect of Application of Project Based Learning Models through google classroom on Student Learning Outcomes on Reaction Rate Material. The results of the research and discussion in this study showed that the results of learning chemistry in the cognitive domain, there was a significant difference in values between the experimental and control classes, where the values of the experimental class were 86.83 higher than the control class, which was 82.34. Thus, it can be concluded that the project learning model based on the classroom media provides better scores in the cognitive domain than the project based learning model that does not use the google classroom media.

Based on the description above, the researcher feels the need to conduct research on the analysis of the application of google classroom during the c ovid -19 pandemic in chemistry learning. In addition, based on the results of interviews that the use of technology-based media, namely the google classroom application, is still not optimally utilized for teaching and learning activities, so that the use of the google classroom application to assist learning activities is still rarely applied by teachers in schools. Therefore, this is what makes researchers conduct research with the title "Analysis of the Implementation of Google Classroom in the Covid-19 Pandemic Period in Chemistry Learning.

This study aims to analyze the application of google classroom during the covid-19 pandemic in chemistry learning, as well as the efforts of teachers and students in improving students understanding of the material.

METHODS

This type of research is a quasi-experimental research (quasi-experimental). The research design used was Non Randomized Pretest -Posttest Control Group Design (Sudjana & Ibrahim, 2012). X1, experimental class using google classroom. X2, control class without using google classroom. Y1, initial test (pretest). Y2, final test (posttest).

Table 1. No randomized pretests-posttest control group design

Group	Pre-test	Treatment	Post-test
A (Experiment)	Y1	X1	Y2
B (Control)	Y1	X2	Y2

This research was conducted at SMA Negeri 1 Sarudu, Sarudu District, Pasangkayu Regency, West Sulawesi Province. The population of this study were all students of class XI MIA at SMA Negeri 1 Sarudu, with the research sample being students of class XI MIA 1 as the experimental class and XI MIA 2 as the control class, with 31 students in each class.

Sampling technique sampling technique was purposive sampling. The sampling was based on certain considerations aimed at making the data obtained more representative (Sugiono, 2017). The research Instrument used in this study was a test. The written test instrument is in the form of multiple choice questions, totaling 25 questions.

Data analysis technique, the research data is processed or analyzed using the (t) test with the help of the SPSS (Statistical Product and Service Solution) version 25 application. The data analysis techniques are analysis of normality testing, analysis of homogeneity testing and analysis of hypothesis testing.

Normality testing analysis, this normality test is carried out with the aim of knowing whether the data second group the sample is obtained with a normal distribution or not as a requirement for hypothesis testing. Test normality this using the Kolmogorov Smirnov Test with the Liliefors test technique. Liliefors This test is a simple use/calculation, and is quite powerful even though with a sample size that small.

Homogeneity testing analysis, this homogeneity test is a test that must be carried out with the aim of see the two classes studied are homogeneous or not. Test this homogeneity will use test Levene. Base taking decision in homogeneity test levene, if score significance > 0.05 so data character homogeneous and if score significance < 0.05 so data no character homogeneous.

Hypothesis testing, test difference average for knowing is there is a difference flat class experiment by significant with flat class control. Test t this carried out on pretest and posttest data. The criteria for acceptance and denial hypothesis is: (a). If the value of Sig. (2-tailed) > 0.05 then Ho is accepted and Ha is rejected . (b). If score Sig.(2-tailed) < 0.05 so Ho rejected and Ha received.

RESULTS AND DISCUSSION

The results of this study include the results obtained during the process of teaching and learning activities carried out at SMA Negeri 1 Sarudu in class XI MIA 1 as an experimental class and class XI MIA 2 as a control class with the same learning material, namely Acid-Base Solution.

Table 2. Student Learning Outcomes Data

Size type	Final test	
	Experimental Class	Control Class
Number of samples	31	31
Minimum score value	68	60
Maximum score value	100	96
Average value	82,06	73,16
Standard deviation	8,382	10,338

Normality test results, this normality test was carried out with the aim of knowing whether the data obtained were normally distributed or not. The data to be tested is the posttest data in the experimental class and the control class. In testing this normality data using the One Sample Kolmogorof Smirnov Test method using the SPSS (Statistical Product and Service Solutions)

software version 25. Interpretation by looking at the output in the Asymp section. Sig(2-tailed). If the value of significance > 0.05 so data distribute normal and if score significance < 0.05 so data no distribute normal . The results of the normality test obtained are as follows.

Table 3. Normality test results

Class	Data	Significance	Information
XI MIA 1	Pretest	0,078	Normal Distribution
Experiment	Posttest	0,064	Normal Distribution
XI MIA 2	Pretest	0,070	Normal Distribution
Control	Posttest	0,200	Normal Distribution

Based on results test normality data pretest on class experiment obtained score significance as big as 0.078 > 0.05 and on class control score the significance is 0.070 > 0.05. Posttest data normality test results in class experiment score significance as big as 0.064 > 0.05 and class control as big as 0.200 > 0.05 this indicates that the distribution of the data in the two classes is distributed normal.

Homogeneity test results, the homogeneity test has one condition which states that the differences between the two classes taken as samples must be homogeneous. This homogeneity test will use Levene's test. The basis for decision making in the Levene homogeneity test, if the significance value> 0.05 then the data is homogeneous and if the significance value <0.05 then the data is not homogeneous. The results of the homogeneity test can be seen in the following table.

Table 4. Pretest homogenity test

	Levene Statistik	df1	df2	Significance	Note
Pretest	3,459	1	60	0,068	Homogen

Table 5. Posttest homogenity test

	Levene Statistik	df1	df2	Significance	Note
Posttest	1,474	1	60	0,229	Homogen

Based on the results of the homogeneity test on the pretest t data obtained a significance value of 0.068 > 0.05. The test results on the posttest data have a significance value of 0.229 > 0.05 with thereby data on study this character homogeneous which it means the sample groups used come from varying populations same.

Hypothesis test (t-test), hypothesis testing is used to prove the truth of the proposed hypothesis, namely to determine the effect of google classroom on student learning outcomes. If the significant value (Sig.) is less than 0.05 then a variable is said to have a significant effect on the variable which other. As for acceptance criteria and denial hypothesis is: If score Sig. (2-tailed) > 0.05 so Ho received and Ha rejected. If score Sig.(2-tailed) < 0.05 so Ho rejected and Ha received

After it is known that the learning outcomes of the two samples have a distribution of which distribute normal and homogeneous, next conducted Hypothesis test testing this conducted by using test t. Results testing data both samples can be seen on Table following.

Table 6. Hypothesis testing

Class	Data	N	Average	T	Significance
XI MIA 1	Posttest	31	82,06	3,725	0,000
XI MIA 2		31	73,16		

Results of hypothesis testing or t-test on the data pretest for experimental and control classes before being given different treatment, the average value of learning outcomes is obtained students in the experimental class of 45.03 and the control class of 46.58 with a significance value of of 0.486 > 0.05 then it can be concluded that there is no difference in the mean student learning outcomes in the experimental class or control class this is appropriate with base taking decision if score significance > 0.05 so Ho accepted and Ha rejected. Furthermore, the posttest data for the experimental class and control class after being given different treatment there is change average results study student class experiment and class control due to treatment, this is evidenced by the average value of the results the experimental class students' learning amounted to 82.06 while the control class average value the average student learning outcomes is 73.16 and a significance value of 0.000 <0.05 so based on taking decision if score significance < 0.05 so Ho rejected and Ha accepted, meaning that there is the influence google classroom during the covid-19 pandemic on chemistry learning

CONCLUSION

Based on the results of the analysis of research data, it can be concluded that there is an influence of google classroom during the covid-19 pandemic on chemistry learning. This is evidenced by the results of the t test in the experimental class obtained an average value of 82.06 while in the control class 73.16 with a significance value of 0.000 <0.05. This means that the significance value is smaller than the alpha value, which could drawn conclusion that hypothesis researcher which sounds “there is the influence of google classroom during covid-19 pandemic on chemistry learning” has been proven. In addition, the influence of google classroom on online learning has been seen, namely students can use google classroom as an online learning medium during the covid-19 pandemic and also from the daily grades of students, the KKM has been achieved

ACKNOWLEDGMENTS

The authors would like to thank the principal of MA As'adiyah Tolai and all parties involved in helping to complete this research.

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