

SAMPLE EQUALITY TEST IN BLENDED LEARNING USING GOOGLE CLASSROOM

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DOI: <https://doi.org/10.21107/Widyagogik/v10i1.1515717>

Received May 29, 2022; June 28, 2022; Accepted July 11, 2022

Abstract

Along with the recovery from the COVID-19 pandemic, the government expects the use of technology, information and communication (ICT) in innovative learning activities in schools. One of them is in the process of Limited Face to Face Learning (PTMT) mathematics in Vocational High Schools (SMK) to provide more opportunities for students to actively participate in each stage of learning. The quality of education is very dependent on the quality of learning carried out by teachers in the classroom. Optimization of the learning process can be done by integrating the use of technology as a learning medium, one of which is by using Google Classroom in blended learning at school. To find out the equality between classes in the population, a t-test was conducted. The results of the population equivalence test obtained that all students of Class XI SMK Wira Harapan for the academic year 2022/2023 were equal and the experimental group selected was X JB1 and the control group obtained X AP.

Keywords – Blended learning; Google classroom; Equality

1. Introduction

Education has an important role in preparing quality human resources and able to compete in the development of science and technology. Therefore, education must be carried out as well as possible to obtain maximum results. The changes that occur will affect the way and delivery of learning that will refer to creative and innovative ICT-based learning. Along with the recovery from the COVID-19 pandemic, the government expects the use of technology, information and communication (ICT) in innovative learning activities in schools. One of them is in the process of Limited Face-to-Face Learning (PTMT) mathematics in Vocational High Schools (SMK) to provide more opportunities for students to actively participate in each stage of learning. Regarding the problems that occur in schools, of course, it is necessary to apply an appropriate learning model where students can explore their abilities as widely as possible and can keep up with technological advances. One of the learning models that can overcome these problems is the Blended learning model. Blended learning learning model is learning that integrates traditional face-to-face learning and computer-based learning (online and offline) as well as various communication options that can be used by teachers and students (Wasis, 2011). It states that blended learning is a mixture of various learning strategies and delivery methods that will optimize the learning experience for its users. This shows that blended learning is a flexible approach to designing programs that are supportive and independent of the time and place of learning. This learning offers several conveniences because online and offline learning with computers does not completely eliminate face-to-face learning. Learning with blended learning will be more meaningful because it is supported by a variety of learning resources that can be obtained through the internet and learning media. Blended learning is applied on the assumption that there are no absolute advantages of face to face methods as well as online and offline learning because each of them certainly has advantages and disadvantages. The main advantage is the strong interaction between teachers and students which can provide an ideal environment for learning. The downside

is that not every individual has the same style and pace and learning needs. Meanwhile, online and offline learning has advantages in the wealth of learning resources provided, where teachers and students can reach a very wide range of learning resources. Optimization of the learning process can be done by integrating the use of technology as a learning medium, one of which is by using Google Classroom in blended learning at school.

Google Classroom is a blended learning platform developed by Google for schools that aims to simplify the creation, distribution and assignment of assignments in a paperless way. Google Classroom acts as a medium or tool that can be used by teachers and students to create online classes or virtual classes, saving time, teachers can give announcements or assignments to students who are accepted directly, so that everything is kept organized by these students.

Several studies are relevant to this research, one of which is the research conducted by Farah Heniati Santosa, (2020) regarding "The Effectiveness of Google Classroom Learning on Students' Mathematical Reasoning Ability" obtained the results of learning using google classroom on students' mathematical reasoning abilities effectively. Student discipline can be trained in this LMS google classroom. Similar to Lily Parnabhakti's (2020) research on "The Effect of Power Point Media in Google Classroom to Improve Student Learning Outcomes for Mathematics Subjects" the results obtained are that the application of PowerPoint learning media through Google Classroom has an effect on improving student learning outcomes. This is also supported by research conducted by Josua Bire, et al (2014) regarding "The Influence of Visual, Auditorial, and Kinesthetic Learning Styles on Student Learning Achievement". Likewise with research by Apriliya Rizkiyah (2015) regarding the Application of Blended Learning to Improve Student Learning Outcomes in Building Science Subjects in Class X TGB SMK Negeri 7 Surabaya obtained student learning outcomes after the application of Blended Learning has increased, the percentage of mastery learning before the action is 30, 30%, after the action of cycle 1 is 72.73%, and after the action of cycle 2 is 87.88%. (2) The results of teacher

teaching activities have increased from cycle 1 with an average score of 55 in the sufficient category and cycle 2 with an average score of 68.33 in the good category. Reflecting on this, it is deemed necessary to conduct further research.

2. Method

The population in this study were all students of class XI SMK Wira Harapan for the academic year 2022/2023 as many as 230 people. This research is categorized as a quasi-experimental study, the placement of subjects into groups being compared is not done randomly, because the subjects are naturally formed in groups/classes before the research is conducted. The design used in this study is "Post Test Only Control Group Design". Determination of the sample to be used in this study using the simple random sampling method (random is only done in class selection). To determine the equality between classes in the population, a t-test was conducted using SPSS 17.0. The sample obtained for the experimental group is X JB1 and the control group is obtained X AP. The experimental group consisted of 19 men and 18 women, while the control group consisted of 14 people and 22 women. The equivalence test in this study was carried out at the experimental preparation stage which was carried out within 4 months. The instrument used is the Year-End Assessment score which was carried out in May 2022 in class X.

3. Result and Discussion

The population in this study were all students of class XI SMK Wira Harapan for the academic year 2022/2023. Determination of the sample to be used in this study using the simple random sampling method (random is only done in class selection). How to draw samples using a lottery system. The two selected classes are drawn again so that one class will be obtained with the treatment of blended learning using Google Classroom and the other class will receive the application of conventional learning. Through the Year-End Assessment scores in mathematics subjects for the 2021/2022 school year, the sample was tested for equality using

the t-test. The aim is to obtain a homogeneous sample so that the differences that arise in the sample group after obtaining pure treatment are caused by the treatment given. Prior to the equivalence test using the t-test, the data was first tested for normality and homogeneity. In this study, the normality of the data distribution was tested by the Kolmogorov-Smirnov test, the homogeneity of variance was tested by the Levene's test, and the equivalence test of the sample was carried out using the t-test using the SPSS 17.0 application. The distribution of student data in each class can be seen in Table 1 below.

Table 1. Student Data for Class XI SMK Wira Harapan

Class	Total students
XI AP	36
XI JB1	37
XI JB2	38
XI UPW	15
XI MM1	32
XI MM2	33
XI RPL	39

The hypotheses tested in testing the normality of the data distribution are as follows.

Ho : data comes from a normally distributed population

Ha : data does not come from a normally distributed population

Table 2 Results of Analysis of Normality Test for Class XI

		Tests of Normality					
Kelas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
nilai_PAT	Eksperimen	.069	37	.200*	.965	37	.267
	Kontrol	.105	36	.200*	.941	36	.046
a. Lilliefors Significance Correction							
*. This is a lower bound of the true significance.							

Based on the table above, it can be seen that for both classes, the significance value obtained is more than 0.05. Thus, all data distributions are normally distributed. After knowing that the data is normally distributed and

has a homogeneous variance, then the equality test is carried out using the t-test. The hypotheses to be tested are:

$$H_0 : \mu_1 = \mu_2$$

$$H_1 : \mu_1 \neq \mu_2.$$

Table 3. Results of Class XI t-test analysis

		Independent Samples Test								
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
nilai_ PAT	Equal variances assumed	.005	.941	-.160	73	.874	-.303	1.895	-4.079	3.474
	Equal variances not assumed			-.160	73.445	.874	-.303	1.895	-4.080	3.475

The table above shows the value of $F = 0.005$ and a significance value of 0.941 . When compared with the specified significance value, the significance value obtained is much greater. This means that the two data groups have homogeneous variance. Then for the t-test obtained a significance value of 0.874 . When compared, the significance value is greater than the specified significance value. Thus rejected. This means that there is no difference in initial ability in the sample group or homogeneous sample. The experimental group selected was X JB1 and the control group obtained X AP.

4. Conclusion

Based on the results of the study, it was concluded that the results of the population equivalence test obtained that all students of Class XI SMK Wira Harapan were equal and the experimental group selected was X JB1 and the control group obtained X AP.

References

- Arikunto, S. 2009. *Basics of Educational Evaluation*. Jakarta: Earth Literacy
- Bire,J. et al. The Influence of Visual, Auditorial, and Kinesthetic Learning Styles on Student Achievement. *Journal of Educational Research on Learning Innovation*. 44 (2), pp. 168-174.
- Kurniawati, M. et al. Application of Blended Learning Using the Flipped Classroom Model Assisted by Google Classroom in Junior High School Mathematics Learning. *Journal of Mathematics Education*. 7 (1), pp. 8 – 19.
- Parnabhakti, L., et al. The Effect of Power Point Media in Google Classroom to Improve Student Learning Outcomes in Mathematics. *Scientific Journal of Realistic Mathematics (JI-MR)*. 1(2), pp. 8-12.
- Rizkiyah, A. Application of Blended Learning to Improve Student Learning Outcomes in Building Science Subjects in Class X Tgb SMK Negeri 7 Surabaya. *Journal of Building Engineering Education Studies*. 1 (1), pp 40 – 49.
- Sari, I.K. 2021. Blended Learning as an Alternative Innovative Learning Model in the Post-Pandemic Period in Elementary Schools. *JOURNAL OF BASICEDU*. 5 (4) , pp 2156 – 2163.
- Syarif, I. The Effect of Blended Learning Model on Motivation and Learning Achievement of Vocational High School Students. *Journal of Vocational Education*, 2 (2)
- Santosa, F.H., et al. The Effectiveness of Google Classroom Learning on Students' Mathematical Reasoning Ability. *Journal of Mathematics Education Thought and Research (JP3M)*. 3 (1), pp. 62-70.
- Wasis. 2011. Blended Learning-Based Learning. Training Materials and Workshops for the Principal and Teachers of the Harapan Christian College Foundation

