



# THE INFLUENCE OF QUIPPER SCHOOL LMS ON LEARNING RESULTS OF ARITHMETIC SEQUENCES AND SERIES IN HIGH SCHOOL OF DR. SOETOMO DURING THE COVID-19 PANDEMIC

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## Abstract

This research started from the COVID-19 pandemic which cut off social and face-to-face communication which had an impact on the teaching and learning process all over the world. Various ways are done by the community to fix this problem, especially in the field of education. Various social media sources apply online social relations, no less the teaching and learning process also participates in this. There are also many sources that carry out the teaching and learning process with electronic media or websites belonging to each place of education. Therefore, the aim of this researcher is to implement an LMS program that has existed for a long time but is still rarely used, namely the LMS *Quipper School*. As a brief description in this study, there are two classes as research subjects, namely the control class and the experimental class in which there are 31 samples of each class. The tests applied are the validity, reliability, normality, homogeneity, and also the hypothesis test known as the T test. In the tests there are 26 valid questions out of 50 multiple choice questions. Both classes are homogeneous, and the results of the hypothesis test are significant.

**Keywords:** arithmetic sequences and series, learning outcomes, LMS quipper school.

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## INTRODUCTION

Health is a physical or mental condition that indirectly means that a person does not have a disease. While disease is described broadly which means a condition that affects or interferes with several functions of the human body. Diseases that are commonly found among humans are usually divided into mild, moderate, and severe diseases, for example, flu, cough, fever, and others. Currently,



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there is a serious disease in the form of a virus outbreak that we know as COVID 19. COVID 19 is a new type of infectious disease that attacks disorders of the respiratory system, resulting in death according to Yusuf (2020).

The results of a UNESCO study report information that on April 13, 191 countries temporarily suspended schools, which affected 1,575,270,054 students (91.3% of the world's student population). ). According to A. R. Setiawan (2020), UNESCO (United Nations Educational, Scientific and Cultural Organization) has recommended distance learning starting March 4, 2020, and has provided a solution for an educational media that can be used by schools by teachers to monitor students remotely or use other media. electronics based on UNESCO (2020).

Because the rapid development of information and communication technology has brought impacts and impacts on society in the form of positive and negative impacts Daryanto Setiawan (2017). The positive influence that we can get for the development of education through technology.

Aziizu (2015) believes that education is an important indicator that determines the progress of a country. The national goal that has been set based on the Constitution, namely educating the nation's life, requires quality education.

Education is important for life, especially mathematics education, because this subject has many students who find it difficult. In learning mathematics, it also usually seems boring for students, so in the learning process mathematics is needed strategies, variations, even interesting learning media or E-learning based learning programs such as LMS (Learning Management System). Because all Indonesian citizens are encouraged to study at home or what we usually call online learning. According to Sadikin (2020), online learning is the use of internet networks that have connectivity, accessibility, flexibility, and the ability to present various learning models.

According to Wicaksono (2016) the use of google classroom can provide access to students in conducting online learning. For example, in his previous research, using google classroom which got pretty good results as a result of student learning starting from a higher value than not using any LMS or conventionally.



Therefore, researchers want to use a different LMS such as the Quipper School LMS to find out whether using this LMS has a better effect because it has more features than Google Classroom, such as display that can be changed, giving points or scores if you answer questions correctly whose purpose is to encourage students to study harder in order to get the right answers. Thus the teaching and learning process will be better triggered.

## **METHOD**

The research method that will be used is in the form of quantitative research. The purpose of this study was to determine the effect of using the Quipper School LMS in online learning on student learning outcomes. The data obtained in the study in the form of mathematics learning outcomes between students who applied the Quipper School LMS and those who did not use the Quipper School LMS learning. Sources of research data are high school students DR. SOETOMO and the two selected classes became the research subjects which is each class has 31 samples. The data collection technique was in the form of a post-test after receiving treatment using the Quipper School LMS. The written test given to students is in the form of a test item on arithmetic subjects. The data analysis technique is in the form of data collection analysis which contains the validity of the questions and the reliability of the questions. The data analysis techniques used are normality test, homogeneity test, and hypothesis test.

## **RESULT AND DISCUSSION**

Research conducted at SMA DR. Soetomo aims to find the effect of learning using Quipper School LMS on student learning outcomes. This research is in the high school of DR. Soetomo, who uses class XI IPS 1 as a control class, uses the LMS Google Classroom and the other uses class XI IPS 2 as an experimental class, which uses the LMS Quipper School. In this study there are also data from each control class and experimental class, namely the average pretest for the control class and the experimental class is 57.16 and 61.10, respectively. Meanwhile, the posttest control class and experimental class were 71.23 and 80.13 respectively.



Researchers use the Quipper School LMS because it has various benefits both in terms of features or menus provided, in terms of ease of answering questions, in terms of ease of account creation, and has supporting factors both in terms of advantages and disadvantages.

Before conducting the analysis test and hypothesis testing, the researcher first conducted a validity test and also a reliability test, which amounted to 50 questions and 26 questions were valid, 24 questions were invalid. Of the 26 questions, the researcher used a number of 25 questions to be tested on the control class and the experimental class, each class containing 31 students. From the validity test using SPSS, it has been defined that the R table of 31 students is  $df = n - 2 = 29$  so it is known that the R table is 0.367. Then the calculated R that is below the R table will be an invalid item and the R count that is above the R table number will be a valid item.

The research was continued at the reliability test stage where the 26 valid questions were tested on the SPSS program. Here is a table of the reliability test :

**Table 1. Reliability Test**

Cronbach's Alpha	N of items
0,737	26

In this reliability test get an Alpha value of 0.737. The r-critical value is significant at 5% with  $n = 50$  ( $df = n - 2 = 48$ ), which is 0.367. So that in this reliability test, it can be concluded that the valid questions are reliable.

**Table 2. Normalitas Test**

	Pre-test Control	Post-test Control	Pre-test Experiment	Pre-test Experiment
Chi-Square	6,548	13,419	5,581	16,613
Asymp. Sig.	0,834	0,098	0,960	0,120

Based on the table the researcher used "Chi Square" normality Test, it is known with a standard significance of 5% the Asymp. Sig. value must higher than 0,05. As the test result, all of them were  $\geq 0,05$ . Then it can be stated that the data is normally distributed.



**Table 3. Homogeneity Test**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	240,065	1	240,065	1,397	0,242
Within Groups	10308,903	60	171,815		
Total	10548,968	61			

In this study there is also a follow-up test in the form of a homogeneity test to determine that both the control class and the experimental class have the same level of thinking. According to the results of the researcher's analysis, it is known that the homogeneity test has an Fcount value of 1.397, the next step is to analyze the F table with a standard significance of 5% with df numerator (Between Groups) of 1 and df of denominator (within Groups) of 60, and get Ftable of 4, 03 so that this test gets the criteria Fcount Ftable, which means  $H_0$  is accepted, so that the two classes are homogeneous.

**Table 4. Hypothesis Test**

	t	df	Sig. (2-tailed)
Pair 1 Post-test Eksperimen Post-test Kontrol	3,314	30	0,002

The last research is using "Paired Samples T-test" to get the value of the hypothesis test and this time it will also be used in the SPSS program. In this test, it is known that the  $t_{count}$  result is 3.314 for the two-party or (2-tailed) test. Meanwhile, at the 5% significance level for data  $df = n-1 = 30$ , it is known that  $t_{table}$  has a value of 2.042 so that for the left side it has  $t_{count}$  data of -3.314 and  $t_{table}$  of -2.042. So according to the data, it can be taken the criteria that  $-t_{count} < -t_{table}$  or  $t_{count} > t_{table}$  then  $H_0$  is rejected. The conclusion of the analysis according to the researcher is that there is an effect of using Quipper School LMS in online learning on student learning outcomes.



## CONCLUSION

Based on the results of the analysis above, it can be concluded that there is an influence on learning outcomes using the Quipper School LMS. Students who use the Quipper School LMS have a higher average than those who do not. This is in line with the aim of the study, namely to determine the influence of the use of the Quipper School LMS in online learning on student learning outcomes..

This study also has weakness which is the LMS needs some Internet connection which some students might not get the requirement and the teachers might still not know much about the new technology. From the problem above as a recommendation the school has to prepare about a good internet connection so the students can connect and ready to get the program LMS Quipper School, and also the school has to hire or ask somebody who is well known about the nowadays technology so that he or she can teach the other teachers to learn about it especially LMS Quipper School.

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