The effect of online learning on student learning outcomes on the theme of objects around us

Yusda Novianti[1], Nuri Ramadhan[2], Moch Muhajir[3]
[1]STKIP Almaksum Langkat, Indonesia
[2]North Sumatra Nahdlatul Ulama University, Indonesia
[3]Sekolah Indonesia Kuala Lumpur, Malaysia
*Email: Yusdanovianty@gmail.com

Abstract
This study aims to determine the effect of online learning on learning outcomes of objects around us in fifth-grade elementary school students. The subjects of this study were the fifth-grade students of MIS Al-Khairiyah, totaling 36 people, consisting of 19 males and 17 females. This study uses descriptive quantitative research with data testing using SPSS 25. Data were obtained through questionnaires, data from schools, and interviews. The data analysis consists of validity, normality, and hypothesis testing. The Kolmogorov Smirnov normality test results are known to have Sig = 0.200 > 0.05, so it can be concluded that the residual value is normally distributed. The hypothesis test results show that the value of fcount and ftable = 69.234 > 4.121. From the test results, it can be concluded that online learning significantly affects student learning outcomes. The coefficient of determination is 0.671, which means that online learning can explain student learning outcomes by 67.1%. This research contributes to developing the e-learning process in education for the better.

Keywords: Online Learning, Learning Outcomes, Themes Objects Around Us

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious-spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state (Galo

et al., 2020). Education is the basis for humans to acquire knowledge, discover and develop the abilities/potentials that useful for themselves and the environment (Kamas et al., 2021). At the end of 2019, a rapidly spreading viral infection emerged; the virus was named Covid-19. This virus was first discovered in Wuhan, China. Covid-19 is spreading massively in other countries.

The World Health Organization (WHO) announced on March 11, 2020, that COVID-19 was declared a pandemic. Indonesia is one of the countries affected by COVID-19 (Wong et al., 2021). Thousands of schools in other countries, including Indonesia, have closed schools to stop the spread of COVID-19 (Putra et al., 2020). UNESCO's response as an institution engaged in education strongly approves the implementation of learning using online platforms for distance learning efforts, so students can reach learning wherever they are (Suryaman, 2020). As a result of the COVID-19 pandemic, the government issued a new policy to stop the spread of COVID-19, namely implementing an invitation to the public to do Physical Distancing or maintaining a one-meter distance avoiding crowds and various gatherings (Kahar et al., 2020). In addition, the government implements policies to stay at home, such as Work From Home (WFH), and all activities related to get-togethers or meetings are eliminated and replaced with online media (Kaeo et l., 2021).

The world of education during the COVID-19 pandemic underwent a significant transformation (Edu et al., 2021). The world of education, from early childhood education (PAUD) to higher education (PT), has begun to adapt to the ongoing COVID-19 pandemic situation (Reis, 2021). The

adaptation of education to face the new normal era has not produced results. Educational institutions have improved by providing distance learning online classes to offline classes. Breakthroughs in the world of education to survive and provide educational services are a big challenge in the era of the covid pandemic. The transformation of education to implement the ideals of education in society is a sure step in the sustainability of education in this country (Clark et al., 2020).

One of the schools that uses online learning is MIS Al-Khairiyah, Sunggal District, Deli Serdang Regency. During the COVID-19 pandemic, all educators and students must carry out learning activities from home or online. All teachers and students are required to use android phones and can use applications available on android phones. After conducting direct interviews with one of the teachers, the researcher received information that online learning carried out at MIS Al-Khairiyah uses the Whatsapp group messenger application. Online learning does not use other applications such as Google Forms and Google Classroom because teachers have not used supporting applications optimally. The online learning activity at MIS Al-Khairiyah, where the teacher explains the material and assignments through the WhatsApp group application. Students will provide the assignment results through the WhatsApp group according to the schedule given by the teacher. When the learning activities have been completed for one week, parents must send the results of student assignments to the school to be assessed directly by the teacher. In addition to the problems above, student learning outcomes are also determined by student activities in participating in online learning. The assessment observations show that students who

routinely work on and submit assignments on time are around 90%. Other students are late for assignments and rarely fill out the attendance list during learning hours. One of the factors behind these problems is the lack of student activity in online learning due to several things, such as loss of information from cell phones due to the absence of data packages/internet networks, and some students do not understand online learning. Students who are unable to understand the content of the material that has been delivered through online media by the teacher, the internet network is sometimes disrupted, the lack of use of online learning media so that some subject matter requires specific learning tools or media that the teacher cannot deliver.

In overcoming these problems, the school has tried to hold training for teachers on the use of online learning media such as using google classroom, google form, and making learning videos using Camtasia. In addition, supporting facilities and infrastructure used by teachers in the learning process, such as strengthening the internet network, have been built so that the distance learning process (online) can be carried out optimally. A lot of research has been done related to e-learning. Some research results show that web-based online media positively influences the learning process. This positive influence is not only obtained by students but also to teachers (Baisa, 2010; Liu, 2009; Hussin, Bunyarit & Hussein: 2009; Ng Wan, 2008; Prunchnicki, et al., 2005; Wijekumar, 2005; Hoogveld, et al., 2001; Oliver, 2000; McNulty, John A; Dauzvardis, Michael F; Espiritu, Baltazar: 2000). Web-based online learning makes students feel satisfied because the presented material is well organized (Jauhari et al.,

2021). Online learning through the web can also facilitate the evaluation process because it becomes more effective, efficient, and objective, both individually and in groups (McNulty, John A; Dauzvardis, Michael F; Espiritu, Baltazar: 2000). They further explained that learning becomes more flexible through the web and helps accommodate various learning style needs, and fosters self-confidence in learning (Oliver 2000; Prunchnicki, at all: 2005).

Harandi (2015) research examined the relationship between e-learning and students' motivation at Tehran Alzahra University. Based on the results of this study, e-learning affects students' motivation. Students are more motivated when teachers implement e-learning (Harandi, 2015). Aryaningrum (2016) discusses the effect of web-based learning (e-learning) on student learning outcomes in geography subject class XI at State Senior High School 9 Palembang. The study results concluded that Student Learning Outcomes influenced Web-Based Learning (E-Learning) in Geography Subjects Class XI Palembang State 9 Senior High School. As indicated by the coefficient rxy = 0.60 and the coefficient of determination r2 = 0.36%, in other words, student learning outcomes are influenced by web-based learning (e-learning) by 36%, and the remaining about 64% is influenced by other factors. Furthermore, from the results of hypothesis testing with the t-test, the statistical test t-count is 6.532, and the t-table is 1.689 because t-count is greater than the t-table, then Ha is accepted (Aryaningrum, K. 2016).

Widayanti et al. (2021), in their research, conclude that e-learning at MIN REMBANG could replace face-to-face learning in schools, but the e-

learning process at MIN Rembang is not too effective. Students have difficulty understanding the subject matter and learning. There needs to be a mature readiness to implement an online learning system (Widayanti, I., Riyadhoh, SN, & Susilowati, R. 2021). Ameli et al. (2020) discuss the analysis of the effectiveness of e-learning in elementary school children during the Covid-19 pandemic period. The results of the qualitative descriptive analysis student responses to E-Learning with the answer "Yes" amounting to 54.13% and those who answered "No" 45.7%. So the data is included in the "less effective" level for learning in elementary schools (Ameli, A., Hasanah, U., Rahman, H., & Putra, AM., 2020).

Putri and Munandar (2021) investigated the analysis of online-based mathematics learning constraints (e-learning) during the covid-19 pandemic. The results showed that, in general, the obstacles experienced by students in online-based mathematics learning (e-learning) were technical and personal constraints. Technical obstacles are an unstable internet network, internet quotas, and teacher explanations that are not audible. In contrast, personal obstacles are the lack of students understanding the learning material and a sense of laziness in participating in online-based mathematics learning (Putri, ST, & Munandar, DR., 2021). Setiawan et al. (2020) discuss online learning during the covid-19 pandemic: its effect on students' understanding of Physics concepts. The results showed that from the results of the study. It was found that the use of Moodle could improve the understanding of physics concepts for elementary school teacher education students, Universitas PGRI Adi Buana Surabaya (Setiawan, B., Juniarso, T., Fanani, A., & Iasha, V., 2020).

Firman and Rahayu (2020) examined online learning amid the covid-19 pandemic. The results showed that students already had the basic facilities needed to take part in online learning; the implementation of online learning has flexibility can encourage the emergence of independent learning and motivation to be more active in learning, distance learning encourages the emergence of social distancing behavior and minimizes the emergence of student crowds so that they are considered to reduce the potential for the spread of Covid-19 in the campus environment (Firman, F., & Rahayu, S., 2020). Pranoto and Wahid (2021) discuss the analysis of the effectiveness of online learning in the Covid-19 pandemic period. The results showed that online learning was less effective because of the lack of facilities and infrastructure and the unpreparedness of technology education (Pranoto, BA, & Wahid, FS., 2021).

Sukardi and Rozi investigate the challenges and opportunities of using information technology in online learning during the Covid-19 period. The study results show that the Covid-19 pandemic has greatly affected higher education in Indonesia, including the Amlapura Hindu Religion STKIP. Implementing the physical distancing policy later became the basis for implementing online lectures by utilizing information technology. The most widely used media in online lectures at STKIP Hindu Religion Amlapura are the Whatsapp group and Google Classroom because this application is very easy to use. However, there are some obstacles experienced, such as inadequate facilities. The survey results stated that 50% of students do not have a laptop. As many as 80% of students stated that it was difficult to get a signal and wasteful use of Internet data because many

students live far from urban areas. Lectures are considered less effective because as many as 61.5% of students stated that they had never used online lecture media before the covid-19 pandemic. However, it turns out that the implementation of online lectures has triggered the acceleration of the digital transformation in Indonesian education. Five percent of students stated that they had never used online lecture media before the covid-19 pandemic (Sukardi, S., & Rozi, F., 2019).

Mahnun (2018) discusses the Implementation of Online Learning and Optimizing the Management of Online-Based Learning in Islamic Universities in Realizing a World Class University. The results show that using online-based learning in lectures is urgent to implement a world-class university. Therefore it needs to be supported by awareness of the importance of the learning system from lecturers in Islamic universities, improve facilities, and foster culture related to online-based learning among students. Online learning management in several Islamic universities needs to be handled seriously and specifically so that online-based learning is optimal. The manager must carry out the managerial tasks of online-based learning well by adhering to the managerial principles, namely: Prioritizing goals over personal interests and the interests of work mechanisms; Coordinate authority and responsibility; Giving responsibility to subordinates must be by their characteristics and abilities; Familiarize themselves with human psychological factors, and The relativity of values (Mahnun, N., 2018).

Sujiwo and A'yun examined the effect of online learning models equipped with tutorials on learning outcomes. The results showed that the

Moodle Online Tutorial that had been developed was declared valid, practical, and effective. There were significant differences in student learning outcomes using the b-learning model and students using the c-learning model. The learning outcomes of students who use the b-learning model are higher than those of students who use the c-learning method (Sujiwo, DAC, & A'yun, Q., 2020). Septiani and Kejora (2021) discuss the level of student learning activity in online learning of Islamic religious education during the Covid 19 pandemic. The results show that the treatment strategy prepared by MA Nihayatul Amal in online learning reduces lesson time and requires the teacher to make a resume for each material learning. The survey results illustrate that students are active in online class attendance (77.72%), following learning to completion (69.52%), collecting assignments (91.24%), muroja'ah (84.76%), mufrodat (75.62%), asking questions (64%), discuss (63.05%) and review learning materials (59.81%). MA Nihayatul Amal students generally have a good or high learning activity (Septiani, A., & Kejora, MTB., 2021).

In contrast to previous research, this study focuses on the effect of online learning on student learning outcomes on the theme of objects around us, fifth-grade students of MIS Al-Khairiyah. And this study aims to determine the effect of online learning on learning outcomes of objects around us in fifth-grade elementary school students. Based on the background of the problem above, the researcher is interested in researching the effect of online learning on student learning outcomes on the theme of objects around us in class V MIS Al-Khairiyah.

METHODS

The method is descriptive research with a quantitative approach. The research was conducted from April to June 2021 in MIS Al-Khairiyah, Sunggal District, Deli Serdang Regency, North Sumatra Province. The population in this study used the research object of class V MIS Al-Khairiyah Sunggal District. The entire population includes all samples in this study because the research object is only 36 students. Researchers took students in class V because almost all students could use android phones and Whatsapp Messenger groups.

Data collection in this study used three ways, namely questionnaires, interviews, and tests. The instruments used are interview sheets, test questions, and questionnaires. Data analysis was carried out using SPSS 25, including validity, normality, reliability, and hypothesis testing. The assessment of the answers to the questionnaire uses a Likert scale with a score of 5 for a very high score and 1 for a very low score. The Likert scale is as follows: SS (Strongly Agree) = 5, S (Agree) = 4, N (Neutral) = 3, TS (Disagree) = 2, STS (Strongly Disagree) = 1. Data processing to calculate each indicator will use an interval scale, where this scale shows the distance between one another, namely: very low (1-1,8), low (1.9-2.7), enough (2.8-3.6), high (3.7-4.5), and (4,6-5,4) is very high.

DISCUSSION

Descriptive analysis of online learning is shown in Table 1. Based on Table 1, it can be seen that the calculation results of 36 students of class V MIS Al-Khairiyah for the "Online Learning" variable have scored with good

and high categories. For the minimum average, there are indicators of student assistance during learning. Environmental factors, namely 3.25 and the maximum average, are found in the response indicators of students and parents during online learning, which is 3.97.

Table 1. Descriptive analysis of online learning variables (X)

No	Indicator	Total value	Mean	Standard Deviation	Category
1	Ease of participating in online learning.	131	3.64	0.90	Enough
2	Student behavior in carrying out online learning.	124	3.44	0.81	Enough
3	Applications used in online learning.	130	3.61	1.02	High
4	The use of learning media during online learning.	135	3.75	1.16	High
5	Student companion during study.	117	3.25	1.18	Enough
6	Student and parent responses during online learning	143	3.97	0.91	High
7	Environmental factor.	117	3.25	1.18	Enough
8	Teacher factor	125	3.47	1.00	Enough
9	The results of assignments, tests or exams.	134	3.72	0.94	High
10	Evaluation of learning outcomes.	122	3.39	0.99	Enough
	Average	127.8	3.55	1.01	High

Based on the teacher data obtained, it is known that student learning outcomes on the theme of objects around us subtheme one single object and mixed objects have the lowest student score of 60, the highest 93, and an average value of 76.8. Then the median (Me) 80 mode (Mo) 80 variance (s2) 47.07 and standard deviation (s) 6.86. For more details, see Table 2.

Table 2. Frequency Distribution of Student Learning Outcomes (Y)

No	Interval Class	Absolute Frequency	Relative frequency (%)
1	50-55	0	0
2	56-61	2	5.6
3	62-67	3	8.3
4	68-73	9	25
5	74-79	0	0
6	80-85	19	52.8
7	86-90	2	5.6
8	91- 95	1	2.7
9	96 - 100	0	0
	Amount	36	100

Table 2 shows that the average score is in the class interval 74-79 with the number of students as much as 0 (0%). Students with scores below the average were 14 (38.9%). Students with grades above the average amounted to 22 (61.2%). This shows that the learning outcomes of objects around us on the sub-themes of one single object and mixed objects have not been completed classically. The basis for decision-making in the Kolmogorov Smirnov normality test is if Sig. value > 0.05, then the residual value is normally distributed, and if Sig. <0.05, then the residual value is not normally distributed.

Table 3. Kolmogorov-Smirnov test one sample

		Non-Standard Residue
	N	36
Parameter P Normal, b	Method	.0000000
	Std. Deviation	3.93753383
The Most Extreme Difference	Absolute	.086
	Positive	.081
	Negative	-.086
Test Statistics		.086
wry. Signature. (2-tail)		.200c,d

Based on the normality test results in Table 3, it can be seen that the value of Sig. 0.200 > 0.05, it can be concluded that the residual value is normally distributed.

The hypothesis test is known as the T-test and F test. In this study, the hypothesis test uses the F test. The F test is a test to see how much influence all the independent variables have on the dependent variable. This test can be seen by comparing fcount and ftable or by looking at the significance value. The basis for making the F test decision is if Sig < 0.05 or fcount>ftable, then it has an effect; otherwise, if Sig>0.05 or fcount<ftable, it has no effect.

Table 4. F/Anova Test

Model		Number of Boxes	df	Square Average	F	Sig
1	Reqresi	1104.993	1	1104.993	69,234	.000b
	Remainder	542,646	34	15,960		
	Total	1647,639	35			

The conclusions from Table 4 are the value of Sig = 0.000 <0.05, then there is an effect of online learning on student learning outcomes and the value of f count and f table = 69.234 > 4.121, then there is an effect of online learning on student learning outcomes. The f table value of 4.121 is obtained from, df1= k-1= 2-1= 1, df2= nk= 36-1= 35, then we get the value of f table is 4,121. Based on the results of the F test, it can be concluded that there is a significant effect of online learning on student learning outcomes so that it can be said that Ha is accepted while Ho is rejected. The coefficient of determination (R2) measures how far the model can explain

variations in the dependent variable. The coefficient of determination (R2) test results are indicated by the number R Square, shown in Table 5.

Table 5. Summary of model

Model	R	R Square	Customized R Square	Std. Estimated Error
1	,819(a)	,671	,661	3.99502

Based on the data in Table 5, it can be seen that the R2 value is 0.671, which means that the independent variable "Online Learning" can explain the dependent variable "Student Learning Outcomes" of 67.1%. The remaining 32.9% is explained by other variables not described in this study. Our finding is confirmed by previous research. Our research found that online learning has a significant effect on the learning outcomes of objects around us in fifth-grade elementary school students. Harandi (2015) found an effect of learning on student motivation. Whereas Widayanti et al. (2021) showed that e-learning at MIN Rembang could replace face-to-face learning, e-learning is not as effective as face-to-face learning.

CONCLUSION

Online learning can be a substitute for face-to-face learning during the COVID-19 pandemic. The hypothesis test results show that the value of f count and f table = 69.234 > 4.121. Thus, online learning has a significant effect on student learning outcomes. The coefficient of determination is 0.671, which means that the independent variable, namely online learning, can explain the dependent variable, namely student learning outcomes on the theme of objects around us by 67.1% while the remaining is 32.9%.

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