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THE INFLUENCE OF INFORMATION TECHNOLOGY AND COMMUNICATION TECHNOLOGY (ICT)-BASED LEARNING MEDIA ON STUDENT LEARNING OUTCOMES IN MATHEMATICS LEARNING IN ELEMENTARY SCHOOL

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ABSTRACT. This research aims to determine if there is an influence of learning media based on Information and Communication Technology on students' learning results mathematics subjects in grade VI of SD Gunong Kleng Meureubo Subdistrict of West Aceh Regency. Another reason for this study is to determine the effect of ICT use in improving students' learning outcomes in math lessons. The approach used is a quantitative approach to this type of experimental research. The population taken in this study was 40 students, consisting of 18 students and 22 students. In contrast, the sample was taken (20) people. The data collection techniques used are observations and tests. This study concludes that there is an effect of improving the learning outcomes of grade VI students of SD Negeri Gunong Kleng, where all students can achieve a pre-set KKM score of 65 with the average score obtained by students is 76.50. The results of the data analysis that has been done using the t-test also obtained result t_{count} 2027 and t table amounted to 1,729; it can be concluded t_{count} that$>t_{table}$.

1. INTRODUCTION

Education is an effort to foster both physical and spiritual personality and progress for human dignity. Therefore, there is more honor if the quality of education in the

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country is promoted and vice versa. If the quality of education is low, the nation will be insulted. It is said that education results are quality when it can improve people's ability to create and prepare productive people [1].

One of the global educational challenges is how to use technology. One of the global challenges in education is how to utilize Technology Informasi and Komucation (ICT) in an academic context [2]. Indonesia is a large country consisting of thousands of islands separated by vast oceans as well. The existence of an extensive area and separated by the sea is often an obstacle in welfare equalization efforts, including equalizing opportunities to citizens in obtaining education following the mandate of the Constitution 1945 [3].

Information and Communication Technology (ICT) is a technology that makes information a processed commodity. The implementation of education in the form of learning in schools or universities contains information that students and teachers must process so that meaningful information is reviewed from the student's side how the information has an essential meaning in learning so that it can be assimilated into something meaningful reviewed from the faculty how the information is presented or conveyed so that learners can easily accept it [4].

Teaching media can heighten students' learning process in teaching, which is expected to increase the learning outcomes achieved. The reasons for using teaching media in the student learning process include: (1) teaching attracts students more attention so that it can foster learning motivation, (2) teaching materials will be more clear meaning so that it can be more by students and allow students to master the purpose of teaching better, (3) teaching methods are more varied, (4) students do more learning activities, because not only listen to teacher descriptions, but also other activities such as observing, doing, demonstrating and others [5].

Based on researchers' observations at SD N Gunong Kleng: 1) in mathematics, learning is generally passive students, do not raise students' questions, do not answer questions submitted by teachers in an orderly manner. 2) The method developed by teachers lectures and interspersed with q&A, so that the learning process of teaching is dominated only by teachers and learners who are good. 3) besides, learning developed is textual with books as the primary learning source that is the less optimal use of other learning resources and learning media. Mathematics Learning has three essential aspects: attitudes, processes, and products. Students

can experience the learning process in its entirety, understand natural phenomena through problem-solving activities, scientific methods, and emulate the way scientists work in finding new facts. However, in reality, Mathematics learning only suppresses Mathematics as a product, memorizing concepts, theories, and laws [6].

Based on the above description, one of the efforts that can be made to improve students' learning outcomes in Mathematic Grade VI subjects is to use Information and Communication Technology (ICT) based learning.

2. METHOD

The approach used in this study is a quantitative approach, which is an approach that enables the collection and analysis of research data and analyzes the data using statistical calculations. Therefore, quantitative approaches are widely required to use numbers, starting with data collection, interpretation of data, and the results' appearance.

This type of research uses quasi-experiments with non-equivalent control *group designs* (*Noneequivalent Control Group Design*).

The research site was conducted at Gunong Kleng State Elementary School in Meureubo District, West Aceh Regency. The research period was conducted in October 2018 in grade VI of the 2018/2019 school year until this research was completed.

The population in this study is 40 grade VI students. The sample in this study consisted of grade VI. A total of 20 students as an experimental class and VI. B as many as 20 students as a control class.

Data Collection Techniques are a systemic and standard procedure for obtaining the necessary data. This study has several data collection methods, namely: observation methods, test methods, and documentation methods.

The research instruments used in this study are observations, tests, and documentation.

3. RESULT AND DISCUSSION

1. Pretest and Posttest ResultsData In Experiment Classes

Pretest and *post-test* in experiment classes are given to students before the learning process and after the learning process. Pretest and post-test are given in the

form of multiple-choice questions as many as ten questions used to find out the student's Mathematics learning results in mathematics subjects at SD Negeri Gunong Kleng. In the experiment class, researchers treated the use of ICT learning media during the learning process. Data from pretest and post-test results can be seen in table4.1 below:

Table 1: Experiment Class Pretest and Posttest Results

Pretest experiment		Frequency	Posttest experiment		Frequency
	30	1		50	1
	40	1		60	1
	50	7		70	7
Valid	60	7	Valid	80	8
	70	2		90	1
	80	2		100	2
	Total	20		Total	20
Mean		= 57.00	*Mean*		= 76.50
Median		= 60.00	*Median*		= 80.00
Minimum score		= 30	Minimum score		= 50
Maximum score		= 80	Maximum score		= 100
Sum		= 1140	Sum		= 1530

Based on the table above, it can be concluded that there are differences in students' learning outcomes in the experiment class. The *pretest's mean value is 57.00, while the mean for post-test in* the experiment class is 76.50.

2. *Pretest and Posttest Results* Data In Control Class

The control class was also given pretest and post-test in the form of a double selection question as many as 10 questions before the learning process and after the learning process. The pretest is given at the time before getting treatment or before the learning process. At the same time, a post-test is given after the learning process uses conventional methods during the learning process. Pretest and post-test result data on the control class can be seen in the table below:

Table 2: Hasil Pretest dan Posttest Kelas Kontrol

Pretest Kontrol		Frequency	Posttest Kontrol		Frequency
Valid	30	4	Valid	50	1
	40	5		60	3
	50	3		70	8
	60	6		80	6
	70	2		90	2
	Total	20		Total	20
Mean		= 48.50	*Mean*		= 72.50
Median		= 50.00	*Median*		= 70.00
Minimum score		= 30	Minimum score		= 50
Maximum score		= 70	Maximum score		= 90
Sum		= 1040	Sum		= 1450

Based on table 2 above, it can be concluded that there are differences in students' learning outcomes in the control class. In the dick class, the pretest's mean value is obtained at 48.50, while the mean for the post-test in the control class is 72.50.

3. Hypothesis Test

To test the hypothesis that can be done by t-test aims to know whether or not the difference between the student's study's final results between the two classes by testing the *average (mean) final* test results in the experiment class and the control class. This test is used to make decisions about whether the hypothesis is accepted or rejected. Where for the hypothesis to be tested are:

H_0 accepted if the price < and rejected $t_{count} t_{table} H_\alpha$

H_α accepted if the price > and rejected $t_{count} t_{table} H_0$.

Hypothesis testing in this study used SPPS 20 with a real rate of 5% or 0.05. The hypotheses presented in this study are as follows:

H_0: There is no effect on the use of ICT-based learning media on students' learning outcomes Mathematics in mathematics subjects in grade VI of SD Negeri Gunong Kleng.

H_α: There is an influence on the use of ICT-based learning media on students'

learning outcomes Mathematics in mathematics subjects in grade VI of SD Negeri Gunong Kleng.

If t_{count} > at a rate of 0.05% with df = 19, then it is accepted, and vice versa if < then rejected and accepted. The calculation of the hypothesis with t_{table} $H_{\alpha}t_{count}t_{table}H_{\alpha}H_0$ *the t-test* will be shown in table 3 below:

TABLE 3. T-Test Results

		Paired Differences					tc	tt	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	Posttest Exsperiment - Posttest Kontrol	4.000	8.826	1.974	-.131	8.131	2.027	1.729	19	.057

As a result of the hypothesis test table above, it can be noted *that the average score (mean) of* the final test obtained by the experiment class is 76.50, and the control class is 72.50. The results of the *t-test calculation* of students' learning results are t_{count} obtained price (2,027) > (t_{table})1.729). So it can be concluded that the reading "There is an influence on the use of H_{α} ICT-based learning media Mathematics on students' learning outcomes in mathematics subjects in grade VI of SD Negeri Gunong Kleng" is stated accepted.

Learning outcomes are abilities possessed by the student after they accept the learning process or learning experience. Learning outcomes play an essential role in the learning process. The learning outcomes assessment process can inform teachers about students' progress to achieve learning goals through teaching and learning activities.

There is an effect of improving the learning outcomes of grade VI students of Gunung Kleng State Elementary School, where all students can achieve a KKM score that has been set at 65 with an average score of 65.

The average earned by students is 76.50. It is also supported by the results of data analysis that has been done using *t-test* also obtained t_{count} (results 2.027) > (t_{table}1.729). Thus it can be concluded that there is a significant influence between the use of ICT-based learning media on student learning outcomes received and

that there is no significant influence between the use of $H_\alpha H_0$ ICT-based learning media on students' learning outcomes in rejection.

From the study results, it can be concluded that the purpose of learning can be said to be achieved. This is evidenced by the evaluation results that have been done by educators or teachers.

4. Conclusion

The effect of ICT-based learning media in Grade VI Mathematics learning at Gunong Kleng Elementary School is well categorized. Moreover, the type of TIk-based learning media that teachers often use through projectors / InFocus. There is an effect of improving the learning outcomes of grade VI students of SD Negeri Gunong Kleng, where all students can achieve a fixed score of 65 with the average score obtained by students is 76.50. It is also supported by the results of data analysis that has been conducted using *t-test* also obtained t_{count} (result 2.027) > (t_{table}1.729). Thus it can be concluded that there is a H_α a significant influence on the use of ICT-based learning media on accepted student learning outcomes and H_0 that there is no significant influence on the use of ICT-based learning media on student learning outcomes rejected.

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