Effectiveness Of Learning Media Using Contextual Based Macromedia Flash for Junior School Students Al Hikmah Medan

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Abstract. Macromedia Flash is a software for interactive learning media so that it can improve student learning achievement. 21st-century learning is the result of the 4.0 industrial revolution in the world of education, it is hoped that students can actively participate in learning. This is discussed with the 2013 curriculum, so students become the center of learning and learning can run effectively. The objectives of this study are: (1) to learn the 75% completeness of student learning outcomes with KKM 70; (2) for learning Improvement of student learning outcomes; (3) to learn the timeliness in learning. The study population denied 280 people consisted of 8 classes, while the class VIII-5 sample released 35 people. This research is a quasi-experimental study. Testing the research hypothesis using a one-party test and the cumulative frequency, paired t-test. The results showed (1) completeness of student learning outcomes classically that is 80%, indicating mastery achievement has been achieved; (2) the value of sig $<\alpha$, then the student's posttest learning outcomes are better than the pretest; (3) appropriate use of time in accordance with the planned use..

1. Introduction

Mathematics is one of the subjects that occupy an important role in education. In the field of education, mathematics plays an important role in the development of science and technology. Given its importance, mathematics is taught from elementary to secondary education. However, learning mathematics tends to still use a lecture or conventional methods so students find it difficult to understand the material and concepts provided. It also makes students less interested in learning mathematics and thinks mathematics is a difficult and boring subject.

Based on observations made by researchers at Al-Hikmah Medan Private Middle School that student learning outcomes are still low, this can be seen from the results of daily tests of class VIII where out of 50 students only 18 students received grades in the range of 70-100. While 32 students scored below the KKM with a KKM score of 70. This caused researchers to feel concerned about the learning outcomes of class VIII which is still low, that is because students do not understand the material and concepts taught. Besides, the results of interviews with mathematics subject teachers also showed that students were less interested in learning.

So that students are interested in learning, it is necessary to do the learning process by using interesting learning media so that learning objectives can be achieved. This is in line with Irvan's opinion [4] the role of teachers in the 21st century is to create independent and enjoyable learning, one

of the alternatives is learning media. The 21st century is known by the age of information society, this can be seen from the emergence of the phenomenon of digital society. The industrial revolution 4.0 has an impact in the world of education, seen from technology-based learning media (ICT).

Agustina, Akrim, Nasrudin, Ahmar, Rahim [1] applying learning media can improve students' motivation and ability to learn, because learning media provides text, images, video, audio, and animation. Media that are suitable with this problem are learning media using Macromedia Flash software. This corresponds to Sukamto [7] Macromedia Flash is a multimedia platform and software used for animation, games and internet enrichment applications that can be seen, played, and run on Adobe Flash Player. Macromedia Flash is software that is used to create animated images. Masykur [5] The use of macromedia flash as a learning medium, is useful for teachers as a tool in preparing teaching materials and organizing learning.

This corresponds to Yudi's [9] This media can also stimulate student stimulus to be able to manipulate concepts and be able to know the real form of abstract mathematical concepts. Macromedia Flash has benefits that can improve the quality of mathematics learning because it can visualize the concepts of the material being taught and can explain the material with an attractive appearance so that students are encouraged to learn mathematics.

Mudlofir [2] stated that multimedia comes from multi-words that mean a lot of variety and media words that means a tool to convey a message. Therefore, multimedia means a combination of various media such as text, graphics, audio, visuals, and so on. in one tool. A device can be called a multimedia system if it meets the following requirements: a) the device must be 0able to change analog form into digital form; b) interactive features that users can change the appearance as desired and can enter data according to their needs; c) be independent, in the sense of providing convenience and completeness of content in such a way that users can use without the guidance of others.

The problems studied are: (1) whether Macromedia Flash learning media has reached the mastery of learning outcomes; (2) is the Macromedia Flash learning media effective against student learning achievement ?; (3) Is the use of time according to plan?

2. Method and Material

This research was conducted in the even semester T.P 2017/2018 at Al Hikmah Junior School Medan. The study population numbered 280 people consisting of 8 classes, while the sample class VIII-5 amounted to 35 people.

This research is a quasi experimental research. The steps in conducting data testing are as follows: (1) Descriptive Test, to see the average test and standard deviation; (2) Test prerequisites, to see the prerequisites for carrying out the test of hypotheses namely normality; (3) Hypothesis Test, to see the completeness of student learning achievement by using the cumulative frequency test, and to see the difference and effectiveness it is done by paired t-test.

3. Result and Discussion

3.1. Research Result

This reseach consists of two variables, namely X_1 (before) and X_2 (after) and consists of one class, namely class VIII-5. Descriptive test results of the data, seen in table 1.

Table 1. Descriptive Statistic

	N	Mean	Std. Deviation	Std. Eror Mean
Pretest	35	77.086	3.501	.592
Postest	35	78.543	3.543	.599

Based on the table above it can be concluded that the pre-test with a mean value of 77.086 and a standard deviation of 3.501, while post test with a mean value of 78.543 and a standard deviation of 3.543.

The prerequisite test is the normality test, seen in table 2.

Table 2. Tests of Normality

| Test | Kolmogrov-Smirnov[a] | | |
	Statistic	df	Sig.
Pretest	.112	35	.126
Postest	.132	35	.200*

Based on the table above, it can be explained that the data has a "normal" distribution. Because the significant value in Kolmogorov-Smirnov for pre-test> from the value of the post test variable has a "normal" distribution. Because the value is significant at Kolmogorov-Smirnov for post test > of the value α (0,200* > 0,05)

To find out the completeness of learning outcomes, it is seen in table 3.

Table 3. Cumulative Frequency Pretest

		Frequency	Percent	Valid Percent
Valid	70.00	2	5.7	5.7
	73.00	2	5.7	11.4
	74.00	6	17.1	28.6
	75.00	3	8.6	37.1
	76.00	2	5.7	42.9
	77.00	4	11.4	54.3
	78.00	5	14.3	68.6
	80.00	6	17.1	85.7
	82.00	3	8.6	94.3
	83.00	1	2.9	97.1
	84.00	1	2.9	100.0
	Total	35	100.0	

From the table above it can be seen that 10 people are incomplete or 29.6% or 70.4% are complete, meaning that they have not met classical completeness which is 80% with a KKM value of 75.

To find out the completeness of learning outcomes, it is seen in table 4.

Table 4. Cumulative Frequency Postest

		Frequency	Percent	Valid Percent
Valid	73.00	1	2.9	2.9
	74.00	6	17.1	20.0
	75.00	3	8.6	28.6
	77.00	1	2.9	28.6
	78.00	9	25.7	57.1
	80.00	7	20.0	77.1
	82.00	4	11.4	88.6
	85.00	4	11.4	100.0
	Total	35	100.0	

From the table above it can be seen that there are 7 incomplete people or 20.0% or 80.0% who are complete, meaning that they have fulfilled the classical completeness of 80% with a KKM value of 75.

To find out the statistical test for correlation in Table 5.

Table 5. Paired Samples Corelation

		N	Corelation	Sig.
Pair	Pretest & Postest	35	.866	.000

Correlation: Correlation value between 2 variables: for the value of Sig. (0.00) <α (0.05), and the results of the correlation value of 0.866 means a strong and positive relationship.

To find out the paired t statistical test in table 6.

Table 6. Paired Samples t-test

		Paired Differences							
					95% Confidence Interval of the Difference				Sig.
		Mean	Std. Deviasi	Std. Error Mean	Lower	Upper	t	df	(2-tailed)
Pair	Pretest-Postest	-1.457	1.821	.308	-2.083	-.832	-4.735	34	.000

To see the effectiveness of Macromedia flash, it is seen in Sig. 2-tailed (0.00) <α (0.05). Meaning: There is a difference between before and after treatment. This means that post test student learning outcomes are better than pre-test.

3.2. Research Discussion

Moore D. Kenneth [8] the effectiveness of a measure that states how far the target (quantity, quality and time) has been achieved. Based on the results of the study showed that in quantity has effectively met the completeness of learning outcomes, with a value of 75 and the classic KKM 80% has been fulfilled that is 80.0% has been completed.There is a difference between before and after treatment. This means that posttest student learning outcomes are better than pretest. This shows that the quality has also been effective.

The results of achieving learning time in the experimental class by using Macromedia Flash are four meetings or 8 x 45 minutes when compared to the usual learning done so far, there is no difference between the achievement of learning time in the experimental class with the achievement of normal learning time. Thus, it is known that the achievement of learning time in the experimental class using Macromedia Flash is the same as that of ordinary learning done with traditional methods, namely four 8 x 40 minutes meetings. This is under the criteria for learning time, namely the achievement of minimum learning time is the same as ordinary learning, thus the achievement of learning time in the experimental class using Macromedia Flash has been achieved.

From the above data it can be proven that Macromedia flash multimedia has a good influence on learning outcomes. Strengthened by several theories including, according to Wati [6] stated that: In the learning process of teaching, multimedia functions as a messenger in the form of knowledge, skills, and attitudes to students. Multimedia learning can motivate students' thoughts, feelings, attention, and willingness to learn. Multimedia has interactive capabilities, so this media can be a good alternative as a tool in learning. Computers as multimedia can be used as learning media.

Many computer programs can be used in learning mathematics. One of them is the Macromedia Flash program. One of the benefits of using instructional media in the teaching and learning process is

that it can clarify the presentation of messages and information so that it can expedite and improve the learning process and outcomes. Putri [6] the use of multimedia learning is considered very important to be used by teachers to improve student learning achievement, one of which is the Macromedia flash program.

Thus it can be concluded that learning using multimedia Macromedia flash affects the learning outcomes of mathematics and is better used in the learning process compared to traditional learning models

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