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## The effect of Islamic interactive media by using adobe flash CS6 on students' learning outcomes of class 7 in one-variable linear equation material

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# The effect of Islamic interactive media by using adobe flash CS6 on students' learning outcomes of class 7 in one-variable linear equation material

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**Abstract.** The purpose of this research was to know the effect of Islamic interactive media by using adobe flash CS6 on student's learning outcomes in the topic of one variable linear equation. This study was conducted at class 7 of SMP Negeri 1 Arjasa Jember, east Java Indonesia in the 2018-2019 academic years. This research used a quantitative approach in the form of true-experimental design. The research design was two group pretest and post-test. Cluster random sampling was used as the sampling technique. Data collection technique was in the form of tests. Independent sample t test was used to analyse the data. Based on the t test analysis, it was found that in the pretest, there were no significance differences between the experimental class learning outcomes and the control class learning outcomes (sig 0.904) this indicated that two classes have the same initial ability. While in post-test there was significant differences between the learning outcomes of the experiment class and learning outcomes of the control class (sig 0.1006), with average outcome of experimental class of 86.45 higher than the average outcome of the control class of 79.16. The research finding showed that there was an influence of Islamic interactive media using adobe flash CS6 on student learning outcomes.

**Keywords:** *Islamic Interactive Media, Learning Outcomes.*

## 1. Introduction

Learning media can generate new interests and desires in the learning process, generate motivation and stimulation of learning activities, and even bring psychological effects on students. The use of instructional media is very helpful in the effectiveness of the learning process in delivering content [1]. As one component of learning, media should be a part that must receive attention in every learning activity. Without learning media, learning effectiveness and quality of education will be less optimal.

Interactive media is a computer-based media consisting of text, graphics, audio, and video that are created, packaged, presented, and used interactively through a computer [2]. Thus, it can be said that interactive learning media is a presentation that uses a combination of text, audio, and animation, then



this integration forms a unity that can display the content of the lesson and be able to process information and provide feedback to users. In Islam, the media can be used as a means of da'wah.

Rasulullah SAW as an educator in delivering the message of preaching to his people using the media or learning intermediaries. Rasulullah SAW also can be used as a good example media by educators in schools in teaching any knowledge. Referring to the National education objectives contained in Law No. 20 of 2003 which concerning Islamic values, it says that national education aims to develop the potential of students to become human beings who believe and devote to God Almighty, noble, healthy, knowledgeable, capable, creative, independent, and become citizens who are democratic and responsible [3]. However, in reality, learning has not yet reached the expected National learning goals.

Based on information obtained from mathematics teachers in grade 7 of State Junior High School 1 Arjasa Jember, Indonesia, it shows that the problems that occur at the school are still using the lecturing method, whereas guided discovery in learning, visual aids and media used in the learning process are still in very limited, which makes students less spirited and less conducive. Even though the media is an effective learning communication tool for creating optimal learning. In the current era of Technology and Information, State Junior High School 1 Arjasa Jember, Indonesia still does not use interactive-based learning as a learning medium, therefore interactive media is needed to help communication between teachers and students in learning so that learning objectives can be achieved optimally.

In order to improve the quality of learning it needs to be based on a systematic view of learning activities, which must also be supported by efforts to utilize and improve the quality of learning resources and media. Along with the rapid development of the era using Information, Communication and Technology (ICT) as a source and medium of learning in educational institutions can be used as an effort to improve the quality of learning and the quality of education [4,5]. Therefore, there is a need for new innovations in learning by utilizing information and communication technology as interactive multimedia sources and nuances of Islam.

Islamic nuances referred to in this study are Islamic nuances in terms of material, motivation, background design, character or animation, and back sound as shown in Figure 1 below.



Figure 1. Homepage of media

In addition, for displaying Islamic nuances in terms of the instruments sounds and material for six meetings, this media is also equipped with exercises that can be used by students practicing independently and then students can also find out the final grade obtained because this media has been equipped with score calculations as shown in Figure 3 below.



Figure 2. Materials display of media

The independent based problem-solving exercises make students able to repeat until they get the maximum score, because students often practice the problems so the result is students are more skilled at solving other problems given by the teacher since the student understanding increases. According to Sunardi independent learning has the main characteristic that students do not depend on teacher's continuous direction, but they have their own creativity and initiative and are able to work alone by referring to the guidance they get [4]. Diana concluded that through learning with assistive devices can help students learn independently [6]. Interactive media can help students to learn independently and comfortably in the learning process.

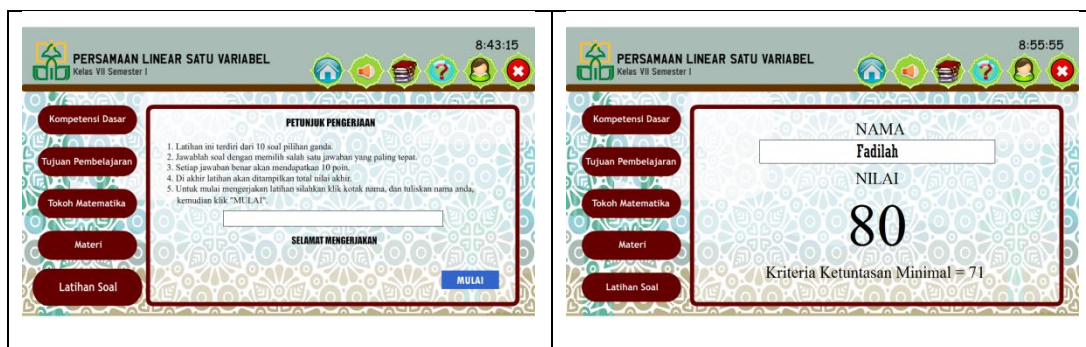


Figure 3. Final display of media

Some relevant previous studies have shown that the use of interactive media in learning can influence student learning outcomes. Research conducted by Rahmayani showed the average value of students' mathematics learning outcomes tests using multimedia (video tutorial) as an experimental class higher than the average scores of students' mathematics learning outcomes tests with Power Points as classes control [7].

Fariyah's research results showed that: 1) the learning motivation of students who use the interactive geogebra program is higher than students who do not use geogebra, 2) the learning

outcomes of students who use the interactive geogebra program are better than students who do not use geogebra [8]. The results of the analysis above can be concluded that the motivation and learning outcomes of students who use the interactive geogebra program are higher than students who do not use geogebra. So geogebra can be used as an alternative learning media that can increase motivation and student learning outcomes.

While research conducted by Khoerul Umam and Yudi found the results that the use of macro-media flash 8 as a learning medium can attract students' interest and attention, while learning without using macro-media flash 8 considered as boring learning by the students [9]. Giving macro-media flash in teaching and learning can help students in learning mathematics. This can be seen from its effect on student mathematics learning outcomes taught by using macro-media flash learning media as an experimental class.

The difference between this research and previous research, lies in the media software used, objects, and research. The object of this research is the mathematics lesson with the material of one variable linear equations and given an additional nuance of Islam as a form of Islamic values, especially morals in students. Researchers try to use this learning media, because the software using adobe flash CS6 that is interesting for students and can make students easier to learn and understand the subject matter, including solving problems to deepen mathematical concepts. In addition, the use of interactive media can be used by students to learn independently and repeatedly so as to increase student interest in learning and learning activities will be more effective and enjoyable.

Based on the description above, the purpose of this study is to determine the effect of Islamic interactive media using adobe flash CS6 on the learning outcomes of 7th grade students on the subject matter of one variable linear equation at State Junior High School 1 Arjasa Jember, East Java Indonesia

## 2. Method

This research uses a quantitative research approach with true-experimental type by using the two groups pretest post-test design which two groups were taken randomly as research samples. The population in this study were all 7th grade students at State Junior High School 1 Arjasa Jember, Indonesia, which consisted of seven classes. The sample was two classes taken randomly using the cluster random sampling technique, and became the experimental class and the control class in this research. The experimental class was the class that used interactive media nuanced Islamic as a learning medium, namely class 7D while the control class was the class that did not use interactive media nuanced Islamic, namely class 7E. The number of students from each class is 30. The research was conducted on October 16, 2018 until November 7, 2018.

The data collection method used was a test. The test in this study was a written test in the form of multiple choices. There were two stages of the test given, namely pretest and post-test. Pretest was a test given aimed to determine the initial ability of students in learning mathematics before getting treated. While post-test was a test given after students get treatment. The research data obtained then analyzed using the t test, which was first performed the calculation of normality and homogeneity to find out whether there are differences in learning outcomes between the control class and the experimental class.

This research instrument was a set of questions item of pretest, and post-test. As for the test items, 16 items were validated by two lecturers of State Islamic Institute of Jember, Indonesia. Instrument trials have also been carried out in grades 7A and 7B of State Junior High School 1 Arjasa, Jember, Indonesia, which aimed to measure the validity and reliability of the instrument. All items in the form of pre-test and post-test questions are valid and reliable.

Learning in the control class was carried out conventionally by not using Islamic nuanced interactive media, learning media used only blackboards, and markers. While learning in the experimental class used Islamic nuanced interactive media, it was firstly used by the students to recognize the linear equation of one variable material.

### 3. Research Result

The data of this research are in the form of pre-test and post-test values. Data were analyzed to determine differences in student learning outcomes in the experimental and control classes. Before testing hypotheses, it is necessary to conduct a prerequisite test of analysis of research data. Prerequisite tests that need to be done are normality and homogeneity tests

#### 3.1. Normality Test

The results of normality test, for both pre-test and post-test, and also for the experiment and the control class, can be seen in table 1 below.

**Table 1.** Normality test results in experiment and control classes

Data	Class	Probability ( $p$ )	Description
Pre-test	Experiment	0.200	Normal
	control	0.144	Normal
Post-test	Experiment	0.135	Normal
	Control	0.108	Normal

Data can be said as normally distributed if the  $p$  value is greater than 0.05. The normality test has been used in this research is kolmogorov-smirnov by using SPSS 23 for Windows. From the  $p$  value test results for pre-test of experiment class obtained a value of 0.200 which is greater than 0.05 and pre-test of the control class obtained around 0.144 which is greater than 0.05. It can be concluded that from pre-test, the experimental class and the control class are normally distributed.

Furthermore, the  $p$  value test results for post-test of experiment class obtained a value of 0.135 which is greater than 0.05 and post-test of control class obtained a value of 0.108 which is greater than 0.05. Then it can be concluded that from post-test result, the experimental class and the control class are normally distributed.

#### 3.2. Homogeneity Test

After knowing the level of normality of the data, then the homogeneity test is then performed. Homogeneity test is used to determine the level of variance similarity between the two groups, namely the experimental group and the control group, to accept or reject the hypothesis by comparing the price of sig. in the leven's statistic with 0.05 (sig. > 0.05). Homogeneity test results can be seen in the table 2 below.

**Table 2.** Homogeneity test results

Data	$F_{count}$	Sig.	description
Pre-test	0.150	0.847	Homogeneous
Post-test	8.291	0.626	Homogeneous

It can be seen from the table 2 above that the homogeneity test results of the research shows that the  $F_{\text{count}}$  of pre-test stood for 0.150 with a significant of 0.847 while  $F_{\text{count}}$  of post-test reached 8.229 with a significance of 0.626. From the calculation of the significant values of pre-test or post-test data, are greater than 0.05 (sig. > 0.05), it can be concluded that the data in this study has homogeneous variance

### 3.3. Hypothesis Testing

#### 3.3.1. Pre-test Results

Before learning process, students were given a pre-test which aimed of knowing students' initial abilities. The results of the pre-test obtained by the experimental class and control class students are as follows.

**Table 3.** Pretest data

Class	Lowest score	Highest Score	Average	Standard Deviation
Experiment Class	31.25	93.75	67.50	13.67
Control class	31.25	87.50	67.91	13.10

Based on Table 3 above, it can be seen that the average of experimental class learning outcomes is 67.50 with a standard deviation of 13.67 while the average learning outcomes of the control class is 67.91 with a standard deviation of 13.10, so it can be concluded that the average learning outcomes of the experimental class 0.41 smaller than the control class.

**Table 4.** Pretest t-test results

Class	Average	$t_{\text{count}}$	$t_{\text{table}}$	Sig.
Experiment Class	67.50	-0.121	2.001	0.904
Control class	67.91			

The average pre-test value was analyzed by t-test to find out the students' initial abilities were not significantly different. From the results of the t test obtained t value of -0.121 with a significance of 0.904. When compared with the t table value of db 58 at the 5% significance level is 2.001, then the t value less than t table value ( $-0.121 < 2.001$ ) and the significance value is more than 0.05 ( $p = 0.904 > 0.05$ ). The decision obtained is that  $H_0$  is accepted and  $H_a$  is rejected, which means the average of the pre-test in the control class and the experimental class is not significantly different. From these conclusions it can be said that the initial abilities of the experimental class and control class students did not differ significantly.

#### 3.3.2. Post-test Results

After learning the material, that was one variable linear equation, the experimental and control class students were given post-tests. Post-test results aimed to measure student learning outcomes about the material given. The experimental class post-test was held on November 7, 2018 and the control class was on November 6, 2018. The time allocation of the post-test time was two hours of study or  $2 \times 40$  minutes.

**Table 5.** Post-test data

Class	Lowest score	Highest Score	Average	Standard Deviation
Experiment Class	62.50	100.00	86.45	10.26
Control class	62.50	93.75	79.16	9.33

Based on Table 5 above, it can be seen that the average of experimental class learning outcomes is 86.45 with a standard deviation of 10.26 while the average learning outcomes of the control class is 79.16 with a standard deviation of 9.33, so it can be concluded that the average learning outcomes of the experimental class 7.29 higher than the control class.

**Table 6.** Post-test t-test results

Class	Average	t <sub>count</sub>	t <sub>table</sub>	Sig.
Experiment Class	86.45	2.879	2.001	0.006
Control class	79.6			

The average post-test value was analyzed by t test to test the average post-test value hypothesis. From the t test results obtained t count of 2.879 with a significance of 0.006. When compared with t table of db 58 at a significance level of 5% is 2.001, the t count of 2.879 is greater than t table of 2.001, and the significance value is less than 0.05 ( $p = 0.006 < 0.05$ ). The decision obtained is that  $H_0$  is rejected and  $H_a$  is accepted, which means that the average post-test of the control class and the experimental class on the material linear equation of one variable is significantly different. It can be concluded that there are significant differences in student learning outcomes in the experimental class and the control class.

#### 4. Discussion

Based on the results of data analysis, it is found that the average post-test score of the experimental class students is higher than the control class. Compared with the average pretest scores, the average pretest scores of the control class students are the same as the average scores of the experimental class pretest. This shows that the initial abilities of the two classes are the same, but after being treated, which the experimental class is taught using adobe flash CS6 interactive media, the average post-test value of the experimental class is higher than the control class. By looking at the results of the pretest and post-test, it can be concluded that the interactive media nuances of Islam have an influence on student learning outcomes.

With the change in learning process, it gives a good effect on student understanding as evidenced by the increase score in student post-test results. It means that there is a process called the learning process, as the result that the average value of the experimental class is higher than the average value of the control class that uses conventional learning. This increase occurred because in the experimental class applied a learning with interactive media nuanced Islamic. The media is an information technology media that is used as a tool with the form of text, images, sounds, animations that are put together in a computer to be presented interactively. The media also created and formed in an Islamic nuance in terms of material, motivation, background design, character or animation, and back sound that leads to understanding students' concepts. According to Sundayana there are advantages of interactive media including being able to attract students' attention in the teaching and learning process because this media is very interesting. Besides, interactive media also can increase student motivation in learning [10].



According to Hamalik learning is a process of changing individual behaviour through interactions with the environment. In this interaction occurs a series of learning experiences [11]. Whereas Piaget said that to avoid the limitations of thinking children in the concrete operational phase really needs a concrete picture, so that he is able to examine the problem [12].

Overall the results of this study have supported previous research which conducted by Khoerul Umam and Yudi. The research focused on the influence of the implementation of interactive learning media based on macro-media flash 8 [9]. From this research, it can be seen that student learning outcomes obtained between the experimental class and the control class was different, the comparison of student learning outcomes using learning media based on macro-media flash 8 is higher than using conventional learning media.

The results of this study also support research conducted by Suci Ruwaida Fajarningtiyas which stated that there is a significant influence on interactive media-assisted realistic approaches to mathematics learning outcomes in triangular and quadrilateral material for grade VII E students at MTsN Aryojedong Tulungagung, Indonesia. This research also in line with the results of Dian Novitasari's research which stated that the ultimate achievement of the ability to understand mathematical concepts of students who receive learning mathematics with educational interactive multimedia is better than the achievement of students who learn with conventional methods [13,14].

Furthermore, the results of this study are also in line with the results of Latifa which concluded that there is an influence of the use of macro-media flash media in the teaching and learning process on student learning outcomes. The role of Macro-media Flash media itself is as a complementary assistant in the learning process. By using macro-media flash media students become more interested and focused on the lesson, and students' memories also become better at remembering lessons. Therefore, macro-media flash media can be used in teaching and learning processes, especially those that focus on students' cognitive abilities. The rapid development of technology enables the development of visual media for the better and also the use of other media for teaching and learning. Likewise, the results of research by Mila Paseleng and Rizki Arfiyani which concluded that interactive multimedia-based learning media had a positive influence on the formation of students' interest in learning especially in mathematics [15].

## 5. Conclusion and Suggestion

Based on the formulation of the problem and the proposed research hypothesis, as well as the results of research based on data analysis and hypothesis testing, it can be concluded in the pre-test there were no significant differences between the experiment and control class. This shows that both classes have the same initial ability. Whereas in the post-test, there were significant differences between the learning outcomes of students who used Islamic-nuanced interactive media and students who did not use Islamic-nuanced interactive media. It turns out that the average learning outcomes of the experimental class are higher than the average learning outcomes of the control class. This shows that there is a significant influence of Islamic interactive media using adobe flash CS6 on the learning outcomes of Grade 7 students on the subject matter of one variable linear equations in State Junior High School 1 Arjasa Jember, Indonesia.

This research is only limited to one variable linear equation material and the interactive media used is adobe flash CS6, so for future research it is recommended to use other types of interactive media that can be accessed using mobile phones so students can study at home whenever they want because students are now almost everyone already has a cellphone, but also future researchers can choose different material and research objects, for example for high school or vocational high school students.

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