

# Comparative Study on the Use of Macromedia Flash and Powerpoint Learning Media Used in Class XI of SMK 1 Samarinda

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**Abstract**-This research is quantitative model by using quasi experimental method. The sample of this research was distributed by using purposive sampling to class X divided into Network engineering group as experimental class and multimedia group as control class. A macromedia learning media was instructed to experimental class while a power point learning media was instructed to a control class. The students score was collected from previous examination as *pretest* which described the previous students' abilities and the last examinations results as *posttest* for current students' abilities. This research used software of SPSS 22.0 version.

The result of Kolmogorov-Smiray Analysis for experimental class 1 is  $sig(p) = 0,124$  as *posttest* and experimental class 2 is  $sig(p) = 0,114$  by comparing to  $\alpha = 0,05$  so that both *posttest* was normally distributed. The results of *posttest* was analyzed by using *t* testing, produced  $sig = 0,001$  with  $\alpha = 0,05$  and comparing them  $sig = 0,001 < 0,05$ , based on the comparison, the hyphothesis shows that  $H_0$  was rejected while  $H_1$  accepted, so that clearly shows there is difference of student's score in the process of image capturing between macromedia flash and powerpoint learning media in class XI of senior high school of Sekolah Menengah Kejuruan I Samarinda within 2017/2018 academic year. The average of *posttest* grade in experimental class (1) is 87,83 while experimental class (2) is 76,20.

The conclulsion of the research shows that there is difference of student's score in the process of image capturing between macromedia flash and powerpoint learning media in class XI of senior high school of Sekolah Menengah Kejuruan I Samarinda within 2017/2018 academic year, by using macromedia flash is more effective than power point learning media.

**Keywords** : student's score, image capturing, macromedia flash, powerpoint

## I. INTRODUCTION

The existence of information, Communication and Technology is one component that cannot be separated from Educational activities. Learning media is an intermediary used to convey information in order to stimulate students to learn. The existence of media is expected to be an easier learning process for students and teachers, because learning media can overcome the limitations of space and time in learning.

The use of interactive learning media can help provide meaningful experiences to students, because the use of interactive media can facilitate students in understanding something that abstinence becomes more concrete.

The use of learning media can also provide motivation for students to learn. Like the use of Macromedia Flash learning media and PowerPoint media as presentation media to support the smooth learning activities. Macromedia Flash is an application for creating web animations, has graphics, audio and video processing capabilities and is able to accommodate all of them in an animation called movie.

On the other hand, PowerPoint is a percentage program application program that can be made in the form of text, tables, graphics, images, organizational charts and so on. The use of this media is expected to improve student learning outcomes.

Learning outcomes are overall measurement activities (data and information collection), processing, interpretation and consideration for making decisions about the level of learning outcomes achieved by students after conducting learning activities in an effort to achieve predetermined learning goals. Learning outcomes refer to learning achievement, while learning presetaion is an indicator of the existence and degree of change in student behavior. (Hamalik, 2012, p 159).

The Learning outcomes in the form of capabilities, after learning people have skills, knowledge, attitudes and

values. The emergence of capabilities is from stimulation originating from the environment and cognitive processes carried out by learners (Dimiyati, 2013, p10). Learning outcomes are a process or activity that is systematic, continuous and comprehensive in the framework of gathering and processing information to assess the achievement of the learning process and outcomes of students. (Arifin, 2012, p10).

Based on the above theory, it can be concluded that learning outcomes are activities that are used to measure students' abilities during the learning process in order to see the success rate of students.

The Learning Media in the perspective of Education is a very strategic instrument in determining the success of the teaching and learning process. Because its existence can directly provide its own dynamics towards students. Media is a component of learning resources or physical vehicles that contain instructional material in the student environment which can stimulate students to learn (Arsyad, 2011: p5).

Media is something that can be used to channel messages from the sender to the recipient so that it can stimulate the mind, feelings, attention and interests and attention of students in such a way that the learning process occurs (Sadiman, 2003: 6). Learning media is a set of tools or equipment used by teachers or educators in order to communicate with students or students (Danim, 2008: 7).

Based on the above theory it can be concluded that learning media is a tool that can help and stimulate students' minds to carry out effective learning processes.

The use of learning media can also provide motivation for students to learn. Like the use of Macromedia Flash learning media and PowerPoint media as a presentation to support the smooth learning activities. Macromedia Flash is an application for creating web animations, has the ability to process graphics, audio, and video and is able to accommodate all in an animation called a movie.

On the other hands, PowerPoint is a percentage data application program that can be made in the form of text, tables, graphs, images, organizational charts and so on. The use of this media is expected to improve student learning outcomes.

The Interactive learning media is a tool for multimedia-based learning media that is able to describe messages or information from the teacher to students that in the process occurs 2-way active communication between multimedia and users which aims to facilitate the learning process.

Interactive Multimedia is a tool or means of learning that contains material, methods, boundaries, and how to evaluate designed systematically and interestingly to achieve the expected subject competencies according to the level of complexity (Riyana, 2007: p5).

The use of Interactive learning media can help provide a meaningful experience to students, because the use of Interactive media can make it easier for students to understand something that abstrates becomes more concrete.

Regarding the material of image capturing, the steps can be explained as follows:

1. Image Recording
  - a. Camera (camcorder) for recording images and sounds, for example: professional cameras, camcorders.
  - b. Tripod, so the camera doesn't shake.
  - c. The camera lights to add light, if the condition is less light.
  - d. Microphones for recording sound take pictures.
2. Image Capturing by camera.

The camera is one of the important tools in making a film. The function of the camera is to take or record scenes (activities) directed by the director and then visualized by the players who do the scenes. A cameraman needs to know the types of cameras, recognize the technique of holding a camera, shooting techniques, and other things in shooting.

3. Image Capturing by Handphone  
Capturing images now is getting easier, especially with the number of mobile phones (mobile phones) equipped with facilities for recording video.
4. Image Size

Image size is usually associated with the purpose of shooting, emotional level, situation and condition of the object. The size of shooting is always related to the size of the human body.

5. Camera Movement  
The camera movement will produce a different image

## II. METHODS

This is quasi-experimental research. This Pseudo-Experiment was chosen because the research could not fully control the external variables that influenced the implementation of the experiment and could not strictly control the internal and external validity.

The research design used is Nonequivalent Control Group Design. In this design, the study used an experimental group with a comparison group then treated. Next the study ended with the final test (posttest) given to the two groups. The design used in this study is shown in the following table 1.

**Table 1. Research Design**

class	<i>Pretest</i>	treatment	<i>Posttest</i>
Experimental class 1	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>
Experimental class 2	O <sub>1</sub>	X <sub>2</sub>	O <sub>2</sub>

The population in the study were all class X students of SMK Muhammadiyah 1 (Vocational High School).

This research was conducted in April 2018 even semester 2017/2018 academic year in class X of Multi Media and class X of Network Engineering. The place of research was at SMK Muhammadiyah 1.

The sample in this study, 2 classes, namely X Multimedia (MM) and Computer and Network Engineering (NE) class X, after pretesting to get an almost the same grade average and apparently had several students who had grades below the KKM 75 The sampling technique used is purposive sampling. Purposive sampling is the technique of determining the sample with the consideration of the researcher. So the researcher chose class X Multimedia as Experiment 2 class that is using Power Point learning media and Class X Network Computer Engineering as Experiment 1 class that is using Macromedia Flash learning media. The selection of class X Multimedia as Experiment 2 class and Class X Computer Engineering as Experiment 2 class based on the average results of the daily test of each class, the results of daily test scores of class X MM 67.5 and class X NE 65.

Data in this study, descriptive statistical data analysis techniques to present data, while to draw inferential statistical conclusions.

In this study before doing the t-test, the normality test was carried out using the Kolmogorov-Smirnov test, namely:

$$D_{max} = |Fo(x) - Sn(x)|$$

(Agus, P. E, 2011)

With a significance level of  $\alpha$  of 0.05 or 5% the value of  $D_{maks}$  compared to  $D_{tabel}$ . The testing criteria for the hypothesis is that  $H_0$  is accepted if  $D_{maks} \leq D_{tabel}$  or  $p > \alpha$ , then the data is normally distributed.

Then Homogeneity Test is conducted to find out whether or not a homogeneous sample is taken from a population. If both groups have the same variance, the group is said to be homogeneous. Homogeneity test is done using the F test to test the homogeneity of groups using the formula:

$$F = \frac{\text{The biggest variant}}{\text{The smallest Variant}}$$

(Sugiyono, 2011:197)

The test criteria for both sample groups are said to be homogeneous if  $F_{count} < F_{table}$  for the error level  $\alpha = 0.05$ .

Hypothesis testing is done by using t test, this test is divided into two groups, namely:

- 1) The t test for homogeneous sample variance, the equation is:

$$T_{count} = \frac{\overline{X_1} - \overline{X_2}}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

- 2) T test for heterogeneous sample variations, the equation is:

$$T_{count} = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

The conclusion are made:

- a) If  $t_{count} > t_{table}$  or  $t_{count} < t_{table}$  then  $H_0$  is accepted, means that there is no difference in student learning outcomes in the material of the process of taking pictures through Macromedia Flash learning media with PowerPoint learning media in class X SMK Muhammadiyah 1 in the 2017/2018 academic year.
- b) If  $t_{count} \leq t_{table}$  or  $t_{count} \geq t_{table}$  then  $H_0$  is rejected and  $H_a$  is accepted. This means that there are differences in student learning outcomes in the material of the process of taking pictures through Macromedia Flash learning media with PowerPoint learning media in class X of SMK Muhammadiyah 1 in the 2017/2018 academic year.

### III. RESULT AND DISCUSSION

This research was conducted on Thursday, April 12, 2018 until Friday April 27, 2018 at SMK Muhammadiyah 1 Samarinda. The population of this study was all students of class X of SMK Muhammadiyah 1 consisting of 3 classes. The class used as experiment class 1 is class X Computer and Network Engineering where treatment uses Macromedia Flash learning media while experimental class 2, Multimedia X class, gets treatment using PowerPoint learning media.

The data obtained are data on student learning outcomes in Simulation and Digital Communication subjects.

**Table 2. Pretest Result**

Class	Highest Score	Lowest Score	Average	standard deviation
Experiment 1	88	45	64,50	10,62
Experiment 2	90	40	67,73	14,27

(source: student daily test results 2018)

**Tabel 3 Posttest Result**

Class	Highest Score	Lowest Score	Average	standard deviation
Experiment 1	100	74	87,83	7,40
Experiment 2	99	45	76,20	15,71

(source : research results 2018)

### Inferential Statistics

The data obtained are data on student learning outcomes in Simulation and Digital Communication subjects. Normality test is used to find out the distribution of data, including normal data or not by using the Kolmogorov-Smirnov test

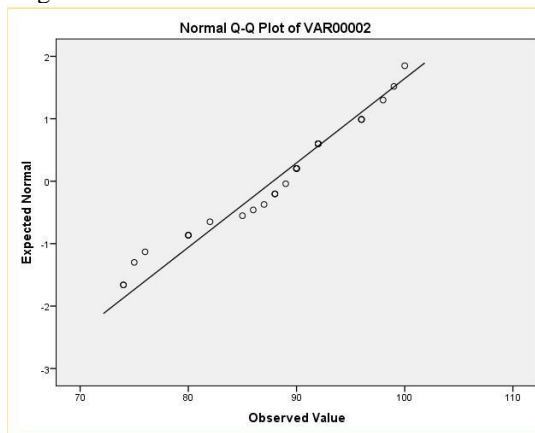


Figure 1 Normal Q-Q Plot Posttest experimental class 1

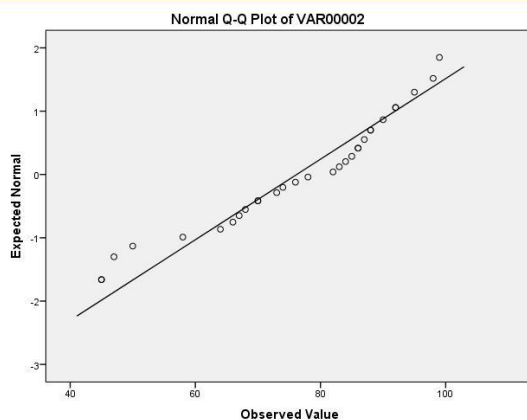


Figure 2 Normal Q-Q Plot Posttest experimental class 2

By using the F test it will be known that the sample used in this study comes from homogeneous or heterogeneous variances.

$$F_{hitung} = \frac{s_1^2}{s_2^2} \text{ dengan } S_2^2 > S_1^2$$

Based on the results of manual calculations in appendix 19 page 108 obtained Fcount of 4.51 with Ftable = F (0.05) (30.30) of 1.84. This shows that Fcount > Ftable is 4.51 > 1.84 so H0 is rejected and H1 is accepted which means that the variance of the two samples comes from the situation with different (heterogeneous) variances.

By using the t test, it will be known that there are differences in learning outcomes of experimental class 1 and experimental class 2. The posttest hypothesis test in experimental class 1 and experimental class 2 obtained sig = 0.001 by comparing  $\alpha = 0.05$ , so the data obtained for the test of pretest hypothesis in experimental class 1 with experimental class 2 sig = 0.001 < 0.05, then reject and H0 are accepted means there are differences in student learning outcomes in the material of the process of taking pictures through Macromedia Flash learning media with PowerPoint learning media, with the results of experimental class 1 better than the experimental class 2.

### IV. CONCLUSION

Based on the results of data analysis and discussion it can be concluded that there are differences in student learning outcomes in the material of the image capturing through Macromedia Flash learning media with PowerPoint learning media in class X of Muhammadiyah 1 Samarinda in the 2017/2018 Academic Year. This proves that the learning outcomes of Digital Simulation and Communication students who use Macromedia Flash learning media are more effective than using PowerPoint learning media.

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