

CHAPTER III

RESEARCH METHOD

This chapter presents the research methodology which be used in conducting this research. It covers: (a) Research Design, (b) Population Sampling and Sample, (c) Variable, (d) The Instruments for Collecting data, (e) Validity and Reliability Testing, (f) Normality and Homogeneity Testing, (g) Data and Data Source, (h) Data Collecting Method, and (i) Data Analysis.

A. Research Design

Research design is overall plan that guides the data collection and analysis of the research. The researcher uses quantitative approach to answer the research problem. The design employed is Quasi-experimental research. Quasi-experimental designs are similar to randomized experimental designs in that they involve manipulation of an independent variable but differ in that subjects are not randomly assigned to treatment groups (Ary et al, 2010: 316).

Quasi-experimental design focus on treatment and outcome; hence the data was taken from pretest and posttest in order to know whether or not Stop Motion Animation is effective in improving students' vocabulary mastery. In this design there are experimental class which is taught by using Stop Motion Animation and controlled class which is taught without using Stop Motion Animation in which the students just read the text book and taking note when the teacher explaining.

In this study, the researcher use non randomized control group pretest-posttest design. According to Ary et al (2010: 316) non randomized control group pretest-posttest design is one of the most widely used Quasi-experimental designs in educational research.

Table 3.1 Non Randomized Control Group, Pretest-Posttest Design

Group	Pretest	Independent Variable	Posttest
Experiment	Y_1	X	Y_2
Control	Y_1	-	Y_2

Experimental group Y_1 — X — Y_2

Control group Y_1 ————— Y_2

Y_1 = Pretest, the score of pre-test was used to test the normality and homogeneity.

Y_2 = Posttest, the score of post-test was used to test the normality and homogeneity. Besides, it was used for analyzing the Independent Sample t-test.

X = Treatment by using Stop Motion Animation was given to the experimental class.

B. Population, Sampling and Sample

a. Population

As stated in Gay (1992: 124), “Population is the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable”. Population is normally taken to mean a

collection of human that has some qualities and characteristics that are chosen to be studied by the researcher.

The population used to conduct this study was seventh grade of MTsN 5 Tulungagung in academic year 2018/2019. The number of population are 228 students consisting of 105 male students and 123 female students which spread in seven classes which are class VII-A until VII-G.

b. Sampling

Gay (1992: 123) stated that “Sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the larger group is referred to as a population”. Among many sampling techniques, the researcher uses Purposive Sampling Technique. Sugiyono (2017: 124) stated that “Purposive sampling is sample determination technique with certain consideration”. Purposive sampling is used when the researcher is unable to take a probability sampling, but is still able to select subjects to be a typical, or representative are chosen from population on the basis of the researcher’s purpose. Thus, it used to select sample because it can get representative sample from population which provides the sufficient information needed by the researcher. In order to get representative result, the researcher choose two classes which can give sufficient information needed and the effectiveness of Stop Motion Animation as

a media can be identified when it is implemented in teaching vocabulary.

c. Sample

In order to study the population effectively, the researcher select the sample. Sample is a portion of a population (Ary et al, 2010: 148). A good sample is the one that represent of the population from which is selected. The sample of this study are VII-C and VII-D classes at MTsN 5 Tulungagung. The researcher decided to choose those class because the English teacher suggested using VII-C and VII-D to conduct the study. The teacher suggested to use those class because the students in those class include into active students and will good to give treatment for them. The experimental class is VII-C and VII-D class become control class. The sample of the research consist of 82 students, 41 for experimental and 41 students for control class.

C. Variable

According to Ary (2010: 37) “Variable is a construct or a characteristic that can take on different values or score”. Variable is something that may vary or differs. Related to the title of the research “The Effectiveness of Using Stop Motion Animation on Students’ Vocabulary Mastery of Seventh Grade at MTsN 5 Tulungagung”, there are two variables in this research:

1. Independent Variable

An independent variable is an attribute or characteristic that influences or affects an outcome or dependent variable (Creswell, 2012: 116). The independent in this research is Stop Motion Animation.

2. Dependent Variable

A dependent variable is an attribute or characteristic that is dependent on or influenced by the independent variable (Creswell, 2012: 117). In this study, the dependent variable is students' vocabulary mastery.

D. The Instruments for Collecting Data

In collecting the data, the researcher need instruments. Instrument has important function in this research. Instruments is one of the significant steps in conducting the research. Therefore, the researcher should choose an instrument in the process of collecting data. Research instrument is a tool of collecting data that should be valid and reliable.

In this study, the reseracher uses test as instrument to know the effectiveness of Stop Motion Animation on students' vocabulary mastery. The test was conducted twice, these are pretest and posttest and both of the test have same content and difficulty. The test is consist of twenty five items in the form of multiple choice. The test is tried out on 8th March 2019 to the VII-A students which is not the class that is used as the sample of the research.

There are procedure to make an instrument as follow:

1. Reviewing literature from syllabus and text book in Junior High School to draft the instrument related to the material.
2. Arranging the blueprint that interrelated to the syllabus and material.
3. Arranging specification of the test that appropriate with media.
4. Consulting with the expert such as English Lecturer or teacher about draft to get some feedbacks, suggestion and validation guide.
5. Conducting try out to the students of VIIA at MTsN 5 Tulungagung.
6. Determining the validity and reliability of the test
7. The draft of the instrument was tried out in VII-A class of MTsN 5 Tulungagung.

E. Validity and Reliability Testing

1. Validity

Validity in general refers to the appropriateness of a given test or any of its component parts as a measure of what it is purposed to be measured. According to Ary et al. (2010: 225), “Validity is the most important consideration in developing and evaluating measuring instruments”. In this study, the researcher used content validity, construct validity and face validity to know the validity of the test.

a. Content validity

Content validity is kind of validity which depends on careful analysis of the language being tested and particular test. According to Gay (1992: 156). “ Content Validity is the degree

which a test measures and intended content area". The researcher adjusted the test with the learning syllabus that contains of standart competence and basic competence.

The instrument of study has content validity because the material item used for teaching vocabulary at the sevent grade of MTsN 5 Tulungagung. The content validity of the test will be designed based on main competence and basic competence in syllbabus Curriculum of 2013 that implemented in that school.

Table 3.2

Main competence and Basic Competence in Curriculum 2013

Main Competence	Basic Competence
3. Understanding knowledge (factual, conceptual, and procedural) based on the curiosity about science, technology, art, culture related to phenomena and events that appear to eye.	3.10 Understanding the purpose, structure of the text, and language elements from the oral and written descriptive text about people, animals and objects, very short and simple.

Based on the basic competence above, the specification for the vocabulary test as the table below:

Table 3.3

The Test Specifications of Pretest and Postest

Learning Objective	Type of Test	No Item of Pretest and Postest
Students can identify name of person, animal and thing	Multiple Choice	1,3,6,7,9,10,11,23,25
Students can identify		4,18,21,22

verb or activity that is done by person and animal		
Students can identify physical appearance and characteristics of person, animal and thing		2,5,8,12,13,14,15,16,17,19, 20
Students can identify possessive pronoun of animal		24

b. Construct Validity

Construct validity is kind of validity that is measure the ability which is supposed to be measured. According to Ary et al. (2010: 231), “Construct-related evidence of validity focuses on test scores as a measure of a psychological construct”. The form of the test must be suitable to test vocabulary not other skills or components of language. Here, the researcher makes 25 questions in the form of multiple choice to measure students’ vocabulary mastery. According to Thornbury (2002: 13) stated that one of the technique for testing vocabulary is multiple choice. It is the popular way of testing in that area easy to score, but they are quite difficult to design.

c. Face Validity

Face validity is a term sometimes used in connection with a test’s content. Face validity refers to the extent to which examiners beleive the instrument is measuring what it is supposed to a

measure. The researcher used face validity by consulting with advisor, English lecturer of IAIN Tulungagung and English teacher of the seventh grade at MTsN 5 Tulungagung.

4. Reliability

After checking the validity of instrument, the next step is checking the reliability. According to Gay (1992: 161), “Reliability is the degree to which a test consistently measures whatever it measures”. Reliability is used to know whether the test is consistent and reliable. To check the reliability of instrument, the researcher uses Cronbach’s Alpha by analyzing it through SPSS. According to Triton in Sujianto (2009: 97) the value of Cronbach’s Alpha can be follow:

Table 3.4 Cronbach’s Alpha Interpretation

Cronbach’s Alpha	Interpretation
0.00-0.20	Less Reliable
0.21-0.40	Rather Reliable
0.41-0.60	Quite Reliable
0.61-0.80	Reliable
0.81-1.00	Very Reliable

The result of reliability testing by using SPSS 18.0 can be seen from the table:

Table 3.5 Result of Reliability (Pre-test)

Reliability Statistics	
Cronbach's Alpha	N of Items
.869	25

Table 3.6 Result of Reliability (Post-test)

Reliability Statistics	
Cronbach's Alpha	N of Items
.853	25

From the table 3.5 and 3.6 above, the value of Cronbach's Alpha are 0.869 and 0.853. It means that the test is very reliable.

F. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is needed to find out whether the data is in normal distribution or not. It is intended to show that the sample data come from a normality distributed population. The data which is used to test the normality is pre-test and post-test score of experimental and control class. To know the normality, the researcher used *One-Sample Kolmogorov-Smirnov test* in SPSS 18.0 with significance value (α)= 0.05. Testing of data normality is conducted by the rules as follow:

- H_0 : If the value of significance > 0.05 , so the distribution data is normal.
- H_1 : If the value of significance < 0.05 , so the distribution data is not normal.

The result of normality testing by using *One-Sample Kolmogorov-Smirnov test* in SPSS 18.0 can be seen from the table:

Table 3.7 Normality Test (Control Class)

One-Sample Kolmogorov-Smirnov Test		Pretest	posttest
N		41	41
Normal Parameters ^{a,b}	Mean	65.76	73.56
	Std. Deviation	9.383	10.271
Most Extreme Differences	Absolute	.120	.123
	Positive	.120	.095
	Negative	-.100	-.123
Kolmogorov-Smirnov Z		.771	.790
Asymp. Sig. (2-tailed)		.591	.560

a. Test distribution is Normal.

b. Calculated from data.

Based on table 3.7 above, the significance values of control class for pre-test and post-test are 0.591 and 0.560. The significance values of both pre-test and pre-test are bigger than 0.05. It means that the data of control class has normal distribution.

Table 3.8 Normality Test (Experimental Class)

		One-Sample Kolmogorov-Smirnov Test	
		Pretest	posttest
N		41	41
Normal Parameters ^{a,b}	Mean	71.61	84.83
	Std. Deviation	11.586	8.888
Most Extreme Differences	Absolute	.135	.127
	Positive	.113	.084
	Negative	-.135	-.127
Kolmogorov-Smirnov Z		.867	.814
Asymp. Sig. (2-tailed)		.440	.521

a. Test distribution is Normal.

b. Calculated from data.

Based on table 3.8 above, the significance values of experimental class for pre-test and post-test are 0.440 and 0.521. The significance values of both pre-test and pre-test are bigger than 0.05. It means that the data of experimental class has normal distribution.

2. Homogeneity Testing

Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The data which is used to test the homogeneity is the pre-test and post-test score of experimental and control class. The homogeneity testing in this research using statistic computation SPSS 18.0 that is *Test of Homogeneity of Variances* by the value of significance (α) = 0.05. The hypotheses of testing homogeneity as follow:

- a. H_0 : If the value of significance > 0.05 , means the data is homogeny
- b. H_1 : If the value of significance < 0.05 , means the data is not homogeny

The result of homogeneity testing with *Test of Homogeneity of Variances* can be seen in table below:

Table 3.9 Homogeneity Test (Control class)

Test of Homogeneity of Variances

Posttest

Levene Statistic	df1	df2	Sig.
.830	6	32	.556

Based on the table above, the significance value of control class is 0.556. As on the basic decision making in homogeneity testing, if the significance value is bigger than 0.05, the data distribution is homogeneous. It can be conclude that significance value is 0.556 is bigger than 0.05 and the data distribution is homogeneous.

Table 3.10 Homogeneity Test (Experimental class)

Test of Homogeneity of Variances

Posttest

Levene Statistic	df1	df2	Sig.
1.198	9	29	.333

Based on the table above, the significance value of experimental class is 0.333. As on the basic decision making in homogeneity testing, if the significance value is bigger than 0.05, the data distribution is homogeneous. It can be conclude that significance value is 0.333 is bigger than 0.05 and the data distribution is homogeneous.

G. Data Collecting Method

In this study, the researcher used test as the data collection. The test will be in the form of written test to see different result of students' vocabulary mastery who being taught by using and without using Stop Motion Animation. The researcher will give pretest and posttest to both of experimental and control class.

1. Pretest

The first thing that researcher did before conducting the research was giving pretest to students. In this section, the students were asked to answer questions. The researcher came to the class choosen, that was VII D firstly as a control class and VII C as an experimental class and explained what the students were going to do.

In this research, the researcher gave pre-test on Wednesday, March 13th 2019 of control class and on Thursday, March 14th 2019 of experimental class. The pre-test was given to the students in the first meeting. The result of students score in pre-test was used to test the normality and homogeneity. Besides, the pre-test score was used to know the basic skill of students in mastering vocabulary.

2. Posttest

Post test was given after all of treatments was done. The test type instruction was similiar to the pretest, but the students did the test after applying Stop Motion Animation in the class. The test is given for both experimental class and for controlled class do not use Stop Motion

Animation in the class. It was purposed to know the result of the new media given is effective or not.

In this research, the researcher gave post-test on Wednesday, March 27th 2019 of control class and on Thursday, April 4th 2019 of experimental class. The post-test was given to the students at the last meeting. It was administered to know the students' score after being taught by using Stop Motion Animation as media. The result of students' score in post-test was used to test the normality and homogeneity. Besides, the post-test score was used in analyzing the Independent Sample t-test.

Table 3.11 The Schedule of Conducting The Research

No.	Activity	Date	Note
1.	Pre-Test	Wednesday, March 13th 2019	Control Class
		Thursday, March 14th 2019	Experimental Class
2.	Treatments (Conventional)	Saturday, March 16th 2019	Control Class
		Wednesday, March 20th 2019	
		Saturday, March 23th 2019	
3.	Treatments (Stop Motion Animation)	Wednesday, March 20th 2019	Experimental Class
		Thursday, March 21st 2019	
		Wednesday, March 27th 2019	
4.	Post-Test	Wednesday, March 27th 2019	Control Class
		Thursday, April 4th 2019	Experimental Class

H. Data Analysis

The researcher use quantitative data analysis by using statistical computation. The collected data by comparing the mean score of post test in experimental class and the mean score of post test in control class to know the significant different by given treatment.

In this study, the researcher used Independent Sample T-test to compare two mean score of post-test in experimental class and control class through SPSS 18.0 version to analyze the data. If the result is lower than the level of significance 0.05, the null hypothesis can be rejected indicating that Stop Motion Animation is effective in teaching vocabulary. While, if it is bigger than the level of significance 0.05 the null hypothesis can not be rejected indicating that Stop Motion Animation is not effective in teaching vocabulary.