

CHAPTER III
RESEARCH METHOD

3.1 Research Design

Researcher will use quasi-experimental research design as a research method. This method has control group and experimental group. Both of two groups have same process in general. They get pretest, treatment and post test. But, it is difference in treatment class. Below is the general overview of quasi experimental design.

Table 3.1 Quasi-Experimental Design

Class	Pretest	Treatment	Post Test
7A	O ₁	X	O ₂
7B	O ₁	-	O ₂

Where:

7A : The experiment class

7B : The control class

O₁ : The pretest administered before the treatment

X : The treatment (using miming game)

O₂ : The post test administered after treatment

(Azwar, 2010:118)

In this research, the students in the experimental class will be taught by using Miming Game in teaching vocabulary and the students in control class will be taught without miming game in teaching vocabulary. The research will finish in five meetings including pre test, 1st treatment, 2nd treatment, 3rd treatment and post test. 1st treatment will be taught about verb, 2nd treatment will be taught about noun and adjective and 3rd treatment will be a competition day.

3.2 Setting of the Research

Setting of the research means place that the writer will conduct his research. The place is in MTs Al Khidmah Pendosawalan Kalinyamatan Jepara at seventh grade students. The place is chosen by writer because the school is never done an English research. Hopefully, by this research students can improve their vocabulary easily and influence their English score. English class in the school will be understood easily by students.

3.3 Population and Sample

Population is the entire subject in a research. It is clear that population are play important role for research. If there is no population, there will be no sample for research, while, a sample is a representative of group from a population to be served as respondent, Tuckman (in Saleh 2005). From the definition, researcher concludes that the sample is a small part of population.

The samples of this study are 7A students as an experimental class and 7B students as a control class. The sample is chosen by using Convenience Sampling

Technique. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher (Darmawan, 2014:151).

Choosing Convenience Sampling because certain consideration that the classes of the sample have been set by the school. The condition made researcher should use the classes without any other options. Despite of that, the condition also give the researcher an advantage. Furthermore, the sample has approximately similar amount of the students.

Subject of the research is students at seventh grade of MTs Al Khidmah Pendorowalan Kalinyamatan Jepara as a population. Mubarak said that population is a unit of the object or subject that has certain qualities and characteristics which are studied by the researchers then be deduced. Well, the population of this research is students at seventh grade which consist two classes, 7A and 7B totally 48 students. Class 7A amounts 24 students as experimental group and class 7B amounts 24 students as control group.

3.4 Research Variables

This research considers two types of variables; they are dependent and independent variable. Brown (1988:7) says that a variable is something that may vary or differ. Then according to Hartoyo (2010:59-60), the independent variable is the factor that is manipulated or controlled by the researcher. And the dependent variable is a measure of effect of the independent variable.

Here are variables of the research:

- 1) Independent Variable: The use of Miming Game
- 2) Dependent Variable : The students' achievement in vocabulary

3.5 Instrument of Data Collection

Instrument of Data Collection explains about how to make the test to be valid. Read (2000:9) said in his article that there are three dimensions of vocabulary assessment. They are discrete-embedded, selective-comprehensive and context-independent. In this study, researcher uses selective-comprehensive as a main dimension. Dimension of selective comprehension or conventional vocabulary test is based on a set of target words selected by the test-writer, and the test-takers are assessed according to how well they demonstrate their knowledge of the meaning or use of those words.

Here is the instrument of the test:

Researcher makes the instrument test is based on the English subject materials and some vocabularies that often appears in English subject. There are 30 multiple choice questions which are divided into 4 categorizes that is set based on base competence. Those are animal, occupation, daily verb and daily adjective. The indicators could be seen in the table below.

Table 3.2 Blueprint of Instrument Test

Base Competence	Indicators	Number of Question	Categorize
3.4 Mengidentifikasi fungsi sosial, struktur teks, dan unsur kebahasaan teks interaksi transaksional lisan dan tulis yang melibatkan tindakan memberi dan meminta informasi terkait nama dan jumlah binatang, benda, dan bangunan publik yang dekat dengan kehidupan siswa sehari-hari sesuai dengan konteks penggunaannya.	Students are able to know about the name of animals in English	1, 2, 3, 16, 17, 18	Name of animal

3.5 Mengidentifikasi fungsi sosial, struktur teks, dan unsur kebahasaan teks	Students are able to know kinds of occupation in English	4, 5, 6, 13, 19, 20, 21, 28, 29	Occupation
interaksi transaksional lisan dan tulis yang melibatkan tindakan	Students are able to know the meaning and using of some daily verbs	7, 8, 9, 22, 23, 24	Daily verb
memberi dan meminta informasi terkait dengan sifat orang, binatang, benda sesuai dengan konteks penggunaannya.	Students are able to know the meaning and using of some daily adjective	10, 11, 12, 14, 15, 25, 26, 27, 30	Daily adjective

3.6 Method of Data Collection

In this study, there are two tests, namely pretest and post test. Both of tests will be given to control class and experiment class. The researcher also does observation by using field note and questionnaire. Pretest and post test are used in this research to measure the improvement of students' vocabulary. Meanwhile, field note and questionnaire is used how students feeling in learning vocabulary by using miming game.

3.7 Data Analysis for Trying Out Test

Tests are a series of questions or exercises as well as other tools used to measure the skills, knowledge, intelligence, abilities or talents possessed by individuals or groups (Arikunto, 2013:193). Researchers will use achievement tests to measure student achievement. Arikunto (2013:194) stated that the test is a test used to measure a person's achievement after learning something. In order to measure the instrument test, researcher uses three stages. Those are difficulty level or difficulty index, validity and reliability.

Difficulty level is a proportion of students for answering the question number test correctly (Widoyoko, 2018:175). Number that shows the difficulty level is named proportion correct (p). The quality number of questions can be categorized based on the table below:

Table 3.3 Difficulty Level

Proportion Correct (p)	Quality of Question Number
0.91 – 1.00	Very easy, not good, useless
0.71 – 0.90	Easy, not too good, revised
0.31 – 0.70	Medium, good, used
0.20 – 0.30	Difficult, not too good, revised
0.00 – 0.20	Very difficult, no good, useless

The formula is used to find out the difficulty level is here:

$$p = \frac{\sum b}{N}$$

P : Proportion correct or difficulty level

$\sum b$: The correct answer of students totally

N : Total of students

Validity is a measure that indicates the validity or validity levels of an instrument. Arikunto, (2013: 211). The researcher will use a test run on the target to test the empirical validity of the instrument. The data that will be obtained from the try-out test is in accordance with the level of his validity indicates the instrument is good or has been valid. The evidence shows that there is the high correlation between test score and trustworthy external criterion when a test can be said empirically valid. The instrument used will be tested for validity using product moment correlation formula proposed by Pearson.

$$r_{xy} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

r_{xy} : correlation of coefficient that sought.

x : value of X_{ke-i} – mean

y : value of Y_{ke-i} – mean

$\sum xy$: amount multiplication of x with y

x^2 : quadrate of x (x deviation)

y^2 : quadrate of y (y deviation)

(Arikunto, 2013: 211)

Reliability refers to an understanding that an instrument is reasonably reliable to use as a data-gathering tool because the instrument is already good (Arikunto, 2013: 221). The instrument that will be used by the researcher is expected to be trusted through reliability test using Cronbach's Alpha. Cronbach's Alpha is used to measure the multiple choice or essay items (Darmadi, 2011:128). The criterion of the instrument test is reliable if : Cronbach's Alpha > 0.60 (Siregar, 2014:90).

3.8 Method of Data Analysis

The researcher will get students' score of vocabulary through pre-test and post-test from experimental class and control class. The data will be analyzed by using statistical calculation through a manual calculation of the t-test formula, Microsoft Excel, or SPSS (Statistic Product and Statistic Solution).

The data collected will be seen the result of student achievement difference between experiment group and control group. The t-test formula used for two large samples that are related to each other, the formula used is (Sudijono, 2009:324):

$$t_0 = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$$

Where,

M_1 : Mean of Variable X (Experimental Class)

M_2 : Mean of Variable Y (Control class)

SE : Standard Error

(Sudijono, 2009:324)

There are several stages will take to get the calculation of t-test, see as follow:

- a. Determining Mean of variable X, with formula:

$$M_x = \frac{\sum X}{N_1}$$

- b. Determining Mean of variable Y, with formula:

$$M_y = \frac{\sum Y}{N_2}$$

- c. Determining Standard of Deviation score of variable X, with formula:

$$SD_1 = \sqrt{\frac{\sum X^2}{N_1}}$$

- d. Determining Standard of Deviation score of variable Y, with formula:

$$SD_2 = \sqrt{\frac{\sum Y^2}{N_2}}$$

- e. Determining Standard Error Mean of variable X, with formula:

$$SE_{M_1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

- f. Determining Standard Error Mean of variable Y, with formula:

$$SE_{M_2} = \frac{SD_2}{\sqrt{N_2 - 2}}$$

- g. Determining Standard Error of difference Mean of variable X and Mean of variable Y, with formula:

$$SE_{M_1 - M_2} = \sqrt{SE_{M_1}^2 + SE_{M_2}^2}$$

- h. Determining t_0 , with formula:

$$t_o = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$$

i. Determining Degrees of Freedom (df), with formula:

$$df = (N_1 + N_2) - 2$$

In order to analyze the t-test, researcher will analyze by using SPSS. One Way Anova with the same numbers of population is the way. The formula of One Way Anova is here (Misbahuddin and Hasan, 2013:219):

H_0 = accepted if Sig. (2-tailed) > 0.05

H_1 = accepted if Sig. (2-tailed) < 0.05

The other test before t-test is homogeneity test. Arikunto (2010: 321) states that “homogeneity is a condition in which all the variables in a sequence have the same finite or limited, and have a variance”.

One of homogeneity index that is usually used in research process is Kuder Richardson 20 (K-R 20) and Kuder Richardson 21 (K-R 21). K-R 20 is used in the instrument test that has only two choices. Meanwhile, K-R 21 is used in instrument test that has more two choices.

This is the formula of K-R 21:

$$r_{xx} = \frac{K \times S_x^2 - X(K - Y)}{S_x^2 (K-1)}$$

If significant score (Sig.) > 0.05 = homogeny

If significant score (Sig.) < 0.05 = not homogeny

(Darmadi, 2011:127).