CHAPTER III

RESEARCH METHOD

This chapter presents the research method. It focuses the method used in conducting this study which covers (a) research design, (b) populations and samples, (c) variable, (d) research instruments, (e) validity and reliability, (f) normality and homogeneity (g) data and data sources, (h) data collecting method, and (i) data analysis.

A. Research design

This research used quantitative approach because it was intended to find out the influence of a variable to another one. Besides, its data are in the form of numbers and they are analyzed statistically.

The design of this research is Quasi-experimental. This design is applied because the researcher comparing two group. It is comparing between experimental class and control class. In experimental class the students gave pretest, treatment and posttest. In control class the students is not given treatment only as control.

The researcher conducts quasi experimental research design by using two groups pretest and posttest. For more detail about the design of quasi-experimental, see the table below:

Table 3.1 Nonrandomized subjects pretest-posttest control group design

Group	Pretest	Independent Variable	Posttest
Experiment	Y1	X	Y2
Control	Y3	-	Y4

(Ary, et.al 2010:316)

Note:

A   : Experimental group

B   : Control group

Y1   : Pretest for experimental group

Y2   : Posttest for experimental group

X   : Treatment

Y3   : Pretest for control group

Y4   : Posttest for control group

B. Populations and Samples

1. Populations

Population is the whole subject of the research which has certain quality and characteristics. Population is a set to which a researcher wishes to generalize. According to Ary et al. (2010:148) population defines as all members of any well-defined class of people, events, or objects. While Arikunto (2013:173) states "Population is the whole subject of research". Based on Lodico et al. (2006:13) the population is the large group to which the researcher would like the result of a study to be generalizable. It means that the population is least one characteristic of differentiates it

from other groups. Supported by Creswell (2008:151) population is a group of individuals who have the same characteristic. As a description above, the researcher take conclusion that the population is a whole research subject used by the researcher. So, population is very important part in a research.

Population in this study is all of the first grade students of MTsN 5 Tulungagung in the academic years 2018/2019.

Table 3.2 List of population

Class	Total
VII A	25
VII B	25
VII C	42
VII D	41
VII E	42
VII F	43
Total	218

2. **Samples**

According to Ary et al. (2010:148) sample is a portion of a population. It means that the sample is a set of data consisting of only a part of the research. In other word, good sample must be represented of the entire as possible, so that the generalization of the sample as true as population. Supported by Creswell (2008:152) sample is a subgroup of the target population that the researcher plants to research for generalizing about the target population.

Sampling is the way that used by the researcher to select the number of individuals as a sample in study. In this research the researcher

used purposive sampling technique. The sample of this research is students of the A class and B class of the first grade at MTsN 5 Tulungagung advised by English teacher. The researcher decided to choose the class because the English teacher suggested using A class and B class to conduct the research. The teacher suggested to using the class because the students in these class include into active students and will good to give treatment for them.

C. Variables

A variable is everything that will become that object of research or the influencing. According to Arikunto (2013:161), variable is research subject or as to focuses some research. Based on the title, the research has two kinds of variables, they are:

1. Independent variable (X)

   Independent variable is a variable in which is observer the side effect. Independent variable can appear and exist by itself without any other supported. It influences and gives special effect. In this study the independent variable is modified domino cards (X) to teach vocabulary.

2. Dependent variable (Y)

   A dependent variable is an attribute or characteristic that is dependent on or influenced by the independent variable Creswell (2012:115). This is the effect of independent variable. This variable was not manipulated by the researcher, but it was affected by the independent

variable. The dependent variable of this research was the students' score in vocabulary mastery.

D. Research Instrument.

According to Frankel (2005:112), states "Instrument is the device the researcher uses to collect the data".Instrument is the tool that is used to collect the data which is needed in the research and it was one of the significant steps in conducting the research. method of measuring person's ability or knowledge, in a given domain. In this study the researcher used the test as the instrument to know the students' achievement in understanding vocabulary before and after taught by using modified domino card. In this research the researcher conducted pretest and posttest.

1. Pretest

A pre-test provides a measure on some attribute or characteristics that assess for participant in an experiment before receive a treatment (Creswell 2008:301). Pretest will be given to the students before the researcher teach by using modified domino cards. Pretest is needed to know the basic competence and their prior knowledge. The researcher gave the test that contains 30 items with two part of test. The first is multiple choice test consisting of 20 items. The second is matching test consisting of 10 items.

2. Posttest

A post-test is a measure on some attributes or characteristics that is assessed for participants in an experiment after a treatment (Creswell 2008:301). After the treatment, posttest was given to the student. The test items of the posttest are exactly the same as those in the pretest. The goal of the posttest is to measure students' vocabulary mastery between experiment group and control group.

E. Validity and Reliability

Measurement is always used in quantitative research. According to Creswell (2012:151), instrument is a tool for measuring, observing, or documenting quantitative data. Ary (2010:224) stated that, quantitative always depends on measurement. Two very important concepts that researchers must understand when they use measuring instrument are validity and reliability.

According to Creswell (2012:159), reliability and validity are bound together in complex ways. These two terms sometimes overlap and at other times are mutually exclusive. Validity can be thought of as the larger, more encompassing term when assess the choice of an instrument. Reliability is generally easier to understand as it is a measure of consistency. If scores are not reliable, the scores are not valid. Scores need to be stable and consistent first before the scores can be meaningful.

The ideal situation exists when scores are both reliable and valid. So, the scores need to be accurate and consistent to make them meaningful

1. **Validity**

Fraenkel and Wallen (2005:113) states that a valid instrument is that measures what it is supposed to measure. Validity is the most important idea to consider when preparing or selecting an instrument for use.

According to Isnawati (2011:27), there are four types of validity; they are face validity, content validity, construct validity and criterion related validity. To know the validity of instrument to gather the data, the researcher used content validity and construct validity. The explanation of content validity and construct validity, as follows:

a. Content Validity

Content validity is prime of importance for achievement test, a test called have content validity if the content of the test can represent sample of the language skill. Creswell (2012:619) said that content validity is the extent to which the questions in the instrument and the score from these questions are representative of all the possible questions that could be asked about the content or skill. In this test the researcher ask students to answer the test to measure students' vocabulary achievement. In the term to fulfill the content validity of the test, the researcher will make the test based on the

standard competences. The test specifications of pretest and posttest

can be seen in the table 3.3 as follows:

Table 3.3 The Test Specifications of Pretest and Posttest

Learning Objective	Type of test	No Items of Pretest and Posttest
Students can mention the name and number of animals around the students	Multiple Choice and Matching	A: 1, 2, 3, 4 B: 1, 2, 3
Students can mention things in school	Multiple Choice and Matching	A: 5, 6, 7, 8, 9, B: 4, 5
Students can mention things in the house.	Multiple Choice and Matching	A: 10, 11, 12, 13, 14, 15 B: 6, 7, 8
Students can mention public buildings around the students.	Multiple Choice and Matching	A: 16, 17, 18, 19, 20 B: 9, 10

b. Face Validity

According to Ary (2010:228) states face validity refers to the

extent to which examinees believe the instrument is measuring what

it is supposed to measure. The face validity of this research is based

on experts opinion. The first is advisor who guides the researcher in

the process of conducting the research. The second is an expert

English lecturer of IAIN Tulungagung. The third expert is teacher

who teaches English language to the students in MTsN 5

Tulungagung. The researcher asks her opinion about the test question

is it appropriate for students or not.

2. Reliability

A test like any other type of instrument is used to measure, should give the same result every time it measure and should be practical to. A test must be reliable as a measuring instrument. Isnawati (2011:18) says that a reliable test is consistent and dependable. Reliability test instrument can be done by using Cronbach's Alpha. 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 16.0 can be seen from the table:

Table 3.5 result of reliability

Reliability Statistic

Cronbach's Alpha	N of Items
0,726	30

From the table 3.5 above, the value of Cronbach alpha is 0.726. It means that the test is reliable.

F. Normality and Homogeneity

1. Normality Testing

Normality test is used to know whether the data is in normal distribution or not. The data is called normal distribution which in the form of bell shaped. It means that the distribution of data was symmetrical, it does not skew to left or right. In calculating the normality, researcher used SPSS 16. The technique that is used was *I sample k-s technique*. In this case, researcher will used statistic non parametric. The hypotheses of normality testing are:

a. Ho : data is in normal distribution

b. H_1 : data is not in normal distribution

The hypotheses above explained that the data is in normal distribution if Ho is accepted and the data is not in normal distribution if H_1 is accepted. The Ho is rejected when the significant value is lower than 0,05 (α= 5%) while Ho is accepted if the significant value is higher than 0,05(α= 5%). When the H_1 is rejected automatically Ho is accepted. The result can be seen in the table below:

Table 3.6 Normality Test (pretest)

One-Sample Kolmogorov-Smirnov Test

		experiment_class	control_class
N		25	25
Normal Parameters[a]	Mean	57.00	54.64
	Std. Deviation	6.677	6.927
Most Extreme Differences	Absolute	.193	.166
	Positive	.115	.151

	Negative	-.193	-.166
Kolmogorov-Smirnov Z		.967	.831
Asymp. Sig. (2-tailed)		.307	.495

a. Test distribution is Normal.

Based on the table 3.6 above, output One Sample Kolmogrov-Smirnov Test shows that sample of every class are 25 students. The Asymp. Sig (2-tailed) in Experiment class was 0.307 and Control class was 0495. If the probability > 0.05, it means that the data is normal. Both of them were above 0.05. This means that the distribution of data in both classes was normal.

Table 3.7 Normality Test (posttest)

One-Sample Kolmogorov-Smirnov Test

		Experiment_class	Control_class
N		25	25
Normal Parameters[a]	Mean	84.56	70.72
	Std. Deviation	9.421	9.467
Most Extreme Differences	Absolute	.095	.156
	Positive	.086	.113
	Negative	-.095	-.156
Kolmogorov-Smirnov Z		.474	.778
Asymp. Sig. (2-tailed)		.978	.581

a. Test distribution is Normal.

If in the normality post-test in the experimental group was 0.978 and in the control was 0.581, same with in normality pre-test all of the significance in the post-test > 0.05. So it can be concluded that the research data in the post-test has normal distributed. However different

with pre-test, in the post-test significance of control group was higher than experimental group.

2. Homogeneity Testing

Homogeneity test intended to show two or more group of data sample come from population having the same variance. Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The computation of homogeneity testing using SPSS 16.0 version is Test of Homogeneity of Variances by the value of significance 0.05. before doing homogeneity testing, the researcher decides hypothesis in this homogeneity as follow:

a. Ho: Variance of every group was homogeny

b. Hɑ: Variance of every group was not homogeny

The hypotheses said that the data was homogeny if Ho was accepted and the data was not in homogeny if H_1 was accepted. The Ho was rejected when the significance value was lower than 0.05 (ɑ=5%) while Ho is accepted if the significance value is higher than 0.05 (ɑ=5%).When the Hɑ was rejected, automatically Ho was accepted, conversely. The result can be seen in the table below:

Table 3.8 Test of Homogeneity of Pre-test Variances

Test of Homogeneity of Variances

pretest result

Levene Statistic	df1	df2	Sig.
.303	1	48	.584

Based on the result of testing homogeneity above, the significant was 0.584 on pre-test. It means that the significant of group higher than significant level 0.05. So, it can be conclude that Ho was not rejected. It means that the variance of data is homogeneous.

Table. 3.9 Test of Homogeneity of Post-test Variances

Test of Homogeneity of Variances

Posttest result

Levene Statistic	df1	df2	Sig.
.112	1	48	.740

Based on table 3.9 above, it showed that the significant was 0,740 on post-test. It means that the significant of group more than 0.05. So, it can be concluded that Ho was not rejected. It means that the variance of data is homogeneous.

G. Data and Data Source

Data is the kinds of information researcher obtain on the subjects of their research (Fraenkel and Wallen, 2005:112). Data in this research are a quantitative data. In this study the data are in the form of score and will get from the pre-test and post-test from the sample of the study.

Meanwhile, the data source is subject where the data can be taken (Arikunto 2013:161). The data took from the primary data source called as primary data. Primary data is source of data from which the researcher can collect the data directly. Ary (1985) stated that, the primary data is the data

that are collected directly from sample. In this study, the primary data source is students' works in administering pretest and posttest.

H. Data Collecting Method

Data collecting method was the method that was used by the researcher to collect data. Tanzeh (2009:57) stated that data collecting is systematic and standardized procedure to obtain the necessary data. Data of this study was collected by administering test. In this research, the data was collected by administering test they were pre-test and post-test. The pre-test and post-test were about vocabulary. Both pre-test and post-test consist of some questions related to the vocabulary.

1. Pretest

    A pre test provides a measure of some attribute or characteristic that you assess for participant in an experiment before they receive the treatment (Creswell, 2008:301). This test is given to know how far the ability of the students in vocabulary mastery.

2. Posttest

    The last method used to collect the data is administering posttest. A posttest is a measure of some attribute or characteristic that is assessed for participant in an experiment after a treatment (Creswell, 2008:301). The purpose of administering posttest is to observe and measure students development in mastering vocabulary after given treatment.

Table 3.10The Schedule of the Tests and Treatments

No	Activity	Date	Material	Note
1.	Pretest	29 October 2018	-	Experimental Class
		30 October 2018	-	Control Class
2.	Treatments	30 October 2018	Names and Numbers of Animals	Experimental Class
		5 November 2018	Things at School and House	Experimental Class
		6 November 2018	Public Place	Experimental Class
3.	Posttest	12 November 2018	-	Experimental Class
		13 November 2018	-	Control Class

Before the test was administered to the students, the researcher conducted a Try-Out of the test on 18 October 2018. Try out test conducted in different class that is 7C class. They were chosen because they had same level with the sample class. The purpose of conducting the try-out of the test is to achieve the Validity and Reliability of the instrument. Based on the result of validity in the instrument, the researcher revised some items in the instrument (test) especially 6, 19, 21, 23, 29 and 30 because they were not valid. The test contains 30 items with two part of test. The first is multiple choice tests consisting of 20 items. The second is matching test consisting of 10 items.

I. Data Analysis

Data analysis is a review of a series of activities, grouping, systematization, interpretation and verification of data so that a

phenomenon has social value, academic, and scientific (Tanzeh, 2009:69). Ary et al. (2010:95) explains that data analysis indicate how the researcher will analyze the data to the test the hypothesis and/or answer the research question. While Khotari (2004:18) explains after the data have been collected, the researcher turns to the task of analyzing the data.

The data obtained from research result of students test that were analyzed quantitatively. Quantitative analysis was done by using statistic which is called statistical analysis. The quantitative data of this research is analyzed by statistical computation. The data collected was processed by comparing the score between control group and treatment group to see whether there is significant different between students who given by treatment and not. In this research the researcher was used independent sample test through SPSS 16.0.