

CHAPTER III
RESEARCH METHOD

This chapter presents the research method. It focused on research design, population and sample, research instrument, validity and reliability testing, normality and homogeneity testing, data collecting method, the schedule of the research, and data analysis.

A. Research Design

To conduct this study the researcher used quantitative research approach. Quantitative research is methodology to study phenomena by collecting numeric data in the field, then analyze it by using statistic program. According to Perry (2005:75) quantitative mainly comes from pshycology field and emphasis by statistic to make generalization from samples of populations.

The design of this research is Quasi-experimental. This design is applied because the researcher compared two groups. It is comparing between experimental class and control class. In experimental class the students were given pretest, treatment and posttest. Meanwhile, the control class students were not given treatment.

The researcher conducted 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: The Illustration of Research Design

Group	Pre-test	Independent Variable	Post-test
Experiment	Y1	X	Y2

Control	Y3	-	Y4
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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. Population and Sample

1. Population

McMillan, (1996:85) states that a population is a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the research. For a research that requires a large population for the source of the data, the first step is to define the target population. Target population in educational research usually is defined as all the members of real or hypothetical set of people, events, or objects to which educational researchers wish to generalize the result of the research (Borg *et al* 1989:216). The target population of this study is all second grade students of MTsN 2 Tulungagung which consist of ten classes.

Table 3.2 List of Population

NO	Class	Male	Female	Total
1	A	8	17	25
2	B	20	18	38

3	C	20	17	37
4	D	18	20	38
5	E	20	17	37
6	F	20	16	36
7	G	18	16	34
8	H	18	16	34
9	I	18	18	36
10	J	18	17	35
11	K	20	16	36
12	L	19	18	37
Total		217	208	425

2. Sample

The sample is representative of the general population. In choosing sample, the researcher uses a certain sampling technique. The purpose of sampling is to obtain a group of subjects who will be representative of the larger population or will provide specific information needed. The degree of representativeness is based on the sampling technique employed (McMillan, 1996: 92). In this study the researcher used purposive sampling in choosing sample. Ary *et al*, (2010:156) stated “purposive sampling also referred to as judgment sampling. Sample elements judged to be typical, or representative, are chosen from the population” To get the representative result of this research, the researcher only chose those who were knowledgeable. It means that the sample had skill and knowledge in vocabulary. Based on the reason, the researcher took two of twelve classes from second grade students of MTsN 2 Tulungagung which appropriate

with the criteria. In addition, English teacher who handles eight I and eight K suggests to take those classes too as subject of sample to be researched by some reasons:

1. This class is taught vocabulary.
2. The class is cooperative enough.
3. The characteristics of the students has assumed as homogeneous in vocabulary, means not too good and not too bad.

C. Research Instrument

Research instrument has important function it is the generic term that researchers use for a measurement device (survey, test, questionnaire, etc.). The researcher used test to collect information on students' vocabulary before and after giving treatment. There are two tests in this research, pre-test and posttest. The first is Pre-test. Pre-test is before treatment process. Pre-test is to know students' vocabulary skill before they get treatment. The test consists of 10 items of multiple choice, 5 items of matching pair and 5 items of short answer. The total items is 20. The second is posttest. Posttest was conducted after treatment process. The total items and the form of the test is similar with pre-test, they are 10 items of multiple choice, 5 items of matching pair and 5 items of short answer. The post-test is used to know the students' vocabulary skill after they get treatment. The research instruments can be seen on appendix 5.

D. Validity and Reliability Testing

Validity and reliability of instrument are integral parts in conducting a study since the instrument which will be used must be valid and reliable before

using it to collect the data. In this research the researcher ensured that the instrument (test) is valid and reliable by doing validity and reliability testing as follows:

1. **Validity**

Validity is measuring what it is designed to be measured. In language testing, Brown (2004) defines validity as the extent to which inference made from assesment results are appropriate, meaningful, and useful in terms of the purpose of assesment. Before conducting the research, the researcher made sure that the instrument had three kinds of validity as follows;

a. **Content Validity**

Content validity is correspondance between curriculum objectives and objectives being assesed. The instrument in this research achieved content validity if the test is designed based on core competence and basic competence. Then, the researcher did a consultation with the expert as the way to validate the test that has been set up.

Table 3.3 Standard Competences

Main Competence	4. Mengolah, menalar, dan mengaji dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, dan mampu menggunakan metoda sesuai kaidah keilmuan.
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Basic Competence	4.6 Menyusun teks interaksi transaksional lisan dan tulis sangat pendek dan sederhana yang melibatkan tindakan memberi dan meminta informasi terkait keberadaan orang, benda, binatang, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks.
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b. Construct Validity

Construct validity is validity which show how far the tests are suitable with the theory that becomes a foundation on composing those tests. Construct validity refers to the composing of instrument. The instrument is constructed by concerning the aspects that will be measured according to the certain theory. Then, the instrument is consulted to the expert before it is ready to distribute to the students.

In this study the researcher administered a vocabulary test in three kinds of test formats. In the form of multiple choice, matching pair and short answer. The three of them are appropriate for testing vocabulary. The aspects above are being the foundation to make appropriate instruments. Then, the researcher consulted it to eligible expert to make sure the instrument is valid.

c. Face Validity

A test is said to have face validity if it measures what is intended to be measured. Face validity is hardly a scientific concept that is very important. A test which does not have face validity may not be accepted by test takers, teachers, educations, authorities or

employers. In this test, there are some aspects to be considered from this test to make a good test based on the validity.

- 1) The instructions are clear for the students
- 2) Time allocation must be adequate. The teacher gives about 60 minutes to do the vocabulary test.

2. Reliability

Reliability is the consistency of the instrument in producing one the similar score on different testing occasion or with different raters. 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. 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 as follows:

Table 3.4

Cronbach's Alpha Interpretation

Chronbach Alpha Score	Interpretation
0.00-0.20	Less reliable
0.21-0.40	Rather reliable
0.41-0.60	Enough reliable
0.61-0.80	Reliable
0.81-1.00	Very reliable

Furthermore, the result of reliability testing of pre-test by using SPSS 16.0 can be seen from the following table:

Table 3.5 Reliability Test of Pre-Test

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.664	.660	21

From the table 3.5 above, the value of Cronbach alpha is 0.664. It means that the test is reliable.

Meanwhile, the result of reliability testing of post-test by using SPSS 16.0 can be seen from the following table:

Table 3.6 Reliability Test of Post-Test

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.715	.715	20

From the table 3.6 above, the value of Cronbach alpha is 0.715. It means that the test is reliable.

E. Normality and Homogeneity Testing

1. Normality Testing

Normality tests are used to determine whether a data set is well modeled by a normal distribution or not. Normality test is intended to show that sample data come from a normally distributed population to know the normality, the researcher used komogorov-Smirnove test with IBM SPSS Stastitic 16

The hypothesis for testing normality are:

- a. H_0 : Data is normal distribution
- b. H_a : Data is not normal distribution

Critic area is in which H_0 is rejected when the significance value is lower than 0.050 ($\alpha = 5\%$). Furthermore, the result of normality test in this study can be seen on the following table:

Table 3.7 Normality Test
One-Sample Kolmogorov-Smirnov Test

		Experimental	Control
N		36	36
Normal Parameters ^a	Mean	88.75	76.11
	Std. Deviation	7.962	9.936
Most Extreme Differences	Absolute	.181	.130
	Positive	.181	.092
	Negative	-.143	-.130
Kolmogorov-Smirnov Z		1.087	.782
Asymp. Sig. (2-tailed)		.188	.573
a. Test distribution is Normal.			

Based on the table 3.7 above, the output One Sample Kolmogrov-Smirnov Test shows that sample of every class are 36 students. The Asymp. Sig (2-tailed) in experiment class was 0.188 and Control class was 0.573. 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.

2. Homogeneity Testing

Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from population which is too

different each other. It is also conducted to know whether the data has homogeneous variance or not. To know the homogeneity, the researcher used Levene statistic with SPSS 16.0

Table 3.8 Homogeneity Testing

Test of Homogeneity of Variances

Results

Levene Statistic	df1	df2	Sig.
1.125	1	70	.293

Based on table 3.8 above, it showed that the significant was 0,293 on post-test. It means that the significant of the group is more than 0.05. So, it can be concluded that H_0 was not rejected. It means that the variance of data is homogeneous.

F. Data Collecting Method

1. Pre-test

Pretest is Pre-testing the opportunity to see what questions work well, what questions sound strange, what questions can be eliminated and what needs to be added. The pre-test was done on April 26th 2019.

2. Post-Test

Post-test is kind of test which is given after gaining the score in pre-test and conducting treatments. Its purpose is to know the result of the new strategy given is effective or not in post-test. April 30th 2019.

G. The Schedule of The Research

Here the table of schedule conducting research In MTsN 2 Tulungagung.

Table 3.9 The Schedule of the Tests and Treatments

No	Group	Date	Activity
1.	Experimental	April 26 th 2019	Pre-test
2.	Control	April 26 th 2019	Pre-test
3.	Experimental	April 27 th 2019	Treatment 1
4.	Experimental	April 29 th 2019	Treatment 2
5.	Control	April 29 th 2019	Conventional teaching
6.	Experimental	April 30 th 2019	Post-test
7.	Control	April 30 th 2019	Post-test

Before the test was administered to the students, the researcher conducted a Try-Out of the test on April 20th 2019. 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.

H. Data Analysis

In this research, the researcher used a quantitative data analysis technique to know the students achievement before and after being taught by using Place Based Education (PBE) strategy in vocabulary. The quantitative data was analyzed by using statistical method. Here, the researcher conducted test to the students before and after taught by applying Place Based Education (PBE) strategy. The result of the test was compared to know whether there is significant different of the students' vocabulary score. Therefore, in this research the researcher used independent sample test in SPSS 16.0 to analyze the data.