CHAPTER III

RESEARCH METHOD

This chapter discuss about research design, population and sample, research variable, research instrument, validity and reliability testing, normality and homogenity testing, data collecting method, and data analysis.

A. Research Design

This research uses quantitative approach with quasi experimental design. Quasi-Experimental research is one of experimental research design which suggests casual relationship in result finding. This type is one of quantitative research that is different from other type of research. The researcher controls or manipulates one or more independent variables then, measure how the treatment effect each group (Lodico et al., 2006:204).

Furthermore, confirming why using quasi experimental design because the researcher could not randomly put the subject, and the classes that used by the researcher was already formed. As Ary *et al* (2010:26) stated, if the researcher could not randomly assign subjects because it had already assembled groups such as classes, it was called as quasi-experimental design.

In this research, the researcher uses *Nonrandomized Control Group, pretest-posttest design* (Ary et al., 2010:316) which it is conducted with two groups; experimental group and control group, which both group is given pretest and posttest. Lodico et al. (2006:183) state the control group is a separate group that receives conventional treatment, while the experimental

group is the group which will receive a treatment. The design as follows:

Table 3.1 Nonrandomized Control Group, Pretest-Posttest Design (Ary et al., 2010: 316)

Group	Pretest	Treatment	Posttest
A	Y_1	X	Y_2
B	Y_1	**-**	Y_2

A : Experimental group

B : Control group

Y_1 : Pretest in experimental group before treatment (VIII A)

Y_1 : Pretest in control group (VIII B)

Y_2 : Posttest in experimental group after treatment (VIII A)

Y_2 : Posttest in control group (VIII B)

X : Treatment in experimental group (VIII A)

-   : Group without treatment or using conventional strategy (VIII B)

Based on the table above, the researcher took two classes. The first is A group as experimental group and the second is B group as control group. Before giving treatment, the researcher gives pretest to both of classes. Then the researcher teaches the students in experimental class by using mnemonic keyword method and in controlled class without using mnemonic keyword method. After three meeting, the researcher gives the posttest to the both classes. It means that the researcher want to know if there are any significance different score in teaching vocabulary by using mnemonic keyword method and without using mnemonic keyword method.

B. Population and Sample

This section discuss the population of the study, sample, and sampling

that are used by the researcher.

1. Population

   The population is defined as all members of any well-defined class of people, events, or subject (Ary, 2002: 162-163). It means that the population is a group of subjects, it can be person or things, to whom or which the findings of the research are to be applied. The population of this study is the eigth grade of MTs Al-Ma'arif Tulungagung in academic year of 2018/2019 which consist of 100 students. Those are divided into three classroom. Class A, B, and C. It can be seen in the table 3.2 below:

   Table 3.2 Population of Research

No	Class	Gender	
		Male	**Female**
1	VIII A	21	15
2	VIII B	20	19
3	VIII C	12	13
	Total Students	100 students	

2. Sample and Sampling

   Selecting sample is very important step in conducting a research. According to Ary (2010:149) the small group that is observed is called a sample and the larger group about which the generalization is made is called a population. A sample is a portion of a population. It means that a good sample must represent the entire populations as good as possible, so that the generalization of the sample as true as population.

   The researcher used purposive sampling technique to take sample. Purposive sampling is based on the judgement of the researcher

as to who will provide the best information to success for the objectives study. According to Teddlie (2007:80), purposive sampling techniques that have also been referred to as nonprobability sampling techniques, involved selecting certain units or cases "based on a specific purpose rather than randomly.

In this study, the researcher takes two classes from 3 classes. The sample class is class VIII A that consist of 36 students and VIII B that consist of 39 students which VIII A as experimental class and VIII B as control class. The researcher used this purposive sampling due to suggestion from the English teacher that both classes have a same level of knowledge in learning English.

C. Research Variable

A variable is a characteristic or attribute of an individual or an organization that writers can measure or observe and varies among individuals or organizations studied (Creswell, 2012:112). There are two variables in this research: independent variable and dependent variable.

1. Independent Variable

Independent variable refers to how participants are treated (Lodico et al, 2006:205). Independent variable is variable that has influence or the cause of change or make the existence of dependent variable. In education, the independent variable might be curriculum materials, instructional styles, or specialized training. So the independent variable in this research is mnemonic keyword method.

2. Dependent Variable

   Dependent variable is the response or the criterion variable presumed to be "caused" or influenced by independent variable (Creswell, 1994: 129). In this research, independent variable is the students' vocabulary mastery.

D. Research Instrument

Instrument is a tool or device which be used by the researcher in collecting data (Oxford: 231). It means any research needs instrument for gathering data. The instrument that is used in this research is a test. According to Ary et al (2010:201) test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned.

In this case, the researcher gave vocabulary test to get the data or information. Vocabulary test as in Chapter 2, there were three languages testing in vocabulary such as multiple choice, completion, gap-fill. In this research, the writer used multiple choices test. The reason for using multiple choice items was they were undoubtedly one of the most commonly used types of item in objective test. The questions consisted of 25 multiple choices item test about descriptive text. The blueprint and specification of the test can be seen in *Appendix 3.*

There were two kinds of test in this research, those were pre-test and post-test. The pretest is used to see the students' vocabulary mastery before treatment is given and the posttest is used to see students' vocabulary mastery

after given treatment. The test would be tested for experimental class and control class. Before, the pretest and posttest is tested on the sample, the test was tried out on 25 students of Students in VIIIC to know the validity of the instrument.

The scoring technique of pretest and posttest were same. There was only one correct answer for each item because form of test is objective test. The formulating scores as follows:

Table 3.3 The formula of score result

Score = Σ correct answer x 4

E. Validity and Reliability Testing

There were two important aspects in determining the quality of established quantitative measures. Those were validity and reliability. In this research, it was needed to measure the test used to measure students' vocabulary mastery.

1. Validity

Validity is the degree to which a test measure what it is supposed to measure. Ary, *et al* (2010: 224 – 225) states that validity is the most important consideration in developing and evaluating measuring instruments. It is the extent to which inferences made from assessment result are appropriate, meaningful, and useful in terms of the purpose of the assessment.

These are four types of validity; 1) Content validity, 2) Criterion related validity, 3) Construct validity, 4) Face validity. In this researcher, to measure whether the test has a good validity, the researcher analyzed the test from content validity and construct validity.

a) Content Validity

Content validity is the degree to which a test measures an intended content area (Gay, 1992: 156). A test is said to have content validity if it consists sample of language skills and structures being tested. So, content validity is the agreement between curriculum objectives and objectives being assessed.

Content validity is the test that if has a good content is looked at from the content of test. It means a test has valid if the content of test is a representative among lesson given. The researcher will combine both between the content of test and the material of test to know the test is valid or not. The material of test is taken from syllabus and the test based on course objective on the syllabus.

Table 3.4 Main Competence and Basic Competence in Curriculum 2013

Core Competence	Basic Competence
3. Memahami dan menerapkan pengetahuan faktual, konseptual, dan prosedural berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan	3.10. Menerapkan struktur teks dan unsur kebahasaan untuk melaksanakan fungsi sosial teks deskriptif dengan menyatakan dan menanyakan tentang

kejadian tampak mata.	deskripsi orang, binatang, dan bangunan bersejarah, secara pendek dan sederhana, sesuai dengan konteks penggunaan nya .
4. Mengolah, menyaji, menalar dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang dipelajari di sekolah secara mandiri, dan mampu menggunakan metoda sesuai kaidah keilmuan.	4.11 Menangkap makna teks deskriptif sederhana secara tertulis, tentang orang, hewan dan bangunan bersejarah.

Table 3.5 Content Validity of Test

Competence Indicators	Test Items	
	Pre-test	Post-tost
4.11.1 Understanding the language features of descriptive text about people, animals and historical building with the appropriate vocabulary	Multiple choice	Multiple choice

b) Construct Validity

A test was said to have construct validity if it can be demonstrated that was measure just the ability which was supposed to measure. Gay (1992:157) said that construct validity was degree to which a test measured an intended hypothetical construct. Construct validity cannot be seen but the effect can be observed. It means that construct validity was used to explain students' behavior. In this research, the instrument has been constructed based on vocabulary mastery theory. After the instrument was constructed, the test was tried out and then the researcher used SPSS 16.0 of Pearson Correlation to count the

validity test per items.

The process calculation of validity testing (see *appendix 7*) by using SPSS 16.0 version for windows found that from the 25 questions of multiple choices which had been tried out, there were only 20 questions valid.

c) Face Validity

A test is said to have face validity if it looks as if it measures what it is supposed to measure (Idawati, 2014: 29). Meanwhile, according to Brown (2004: 26), a test called having face validity is a test look like, such as the look which can be seen and measured by senses. By those theories, it could be grasped whether the face validity which was found in this study was, the materials which was used to the instruments were appropriate to students' level. The researcher analyzed the students' level by consulting to the expert. The experts here were the advisor, the English teacher, and the materials books of eighth grade level. Then, the items which were prepared were matched to junior high school level, not for neither upper nor lower level.

In this test, there are some aspects that are consideration from this test to make a good test based on the validity.

1) The instruction must be clear for the students

2) The topic must be familiar with the students

3) Time allocation must be given clearly.

2. Reliability

Reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring Ary et al., (2010:236-237). Reliability was necessary characteristic of any good test for it to be valid at all. Reliability was an indicator of consistency, that was an indicator of how stable a test score or data is across applications or time. A measure should produce similar or the same results consistently if it measures the same "thing." A measure can be reliable without being valid. A measure cannot be valid without being reliable (Hale *et al*, 2014:45). It mean the test could be valid if it was reliable as well.

The researcher conducts tryout first both pretest and posttest to the students in the same grade before give test and treatment the sample to find out the reliability test. Tryout is conducted on 31st July 2018 in the VIII C.

To know reliability of test the researcher measures the score used Cronbach's Alpha formula by using SPSS 16.0. The procedure is input the answer between correct or incorrect. One correct answer in given point 1, and one incorrect answer is given point 0. Then, the value of reliability test for tryout pretest is 0.858. Then, the value of reliability test for tryout posttest is 0.848. See *appendix 8* to know the analysis score tryout pretest and posttest.

Table 3.6 The Value of Reliability Pretest

Reliability Statistics

Cronbach's Alpha	N of Items
.858	20

Table 3.7 The Value of Reliability Posttest

Reliability Statistics

Cronbach's Alpha	N of Items
.848	20

It means that the pretest and posttest instrument have high reliability of test. To know both pretest and posttest have high reliability of test, see the table of reliability test classification below:

Table 3.8 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

Based on the table above, the instrument test of both pretest and posttest is reliable.

F. Normality and Homogenity Testing

1. Normality Testing

Normality test are used to determine whether a data set is well modeled by a normal distribution or not. The aim is to know the data distribution is normally. To measure the normality, the researcher used

SPSS 16.0 One-Sample Kolmogorov-Smirnov Test. The ways to know the data is normal or not are as follows:

a) Ho: If the significance value > 0.05, the data has normal distribution.

b) Ha: If the significance value < 0.05, the data hasn't normal distribution.

Here, The result of normality testing in experimental class can be seen below:

Table 3.9 Table of Normality Testing in Experimental Class
One-Sample Kolmogorov-Smirnov Test

		Pretest_Exp	Posttest_Exp
N		36	36
Normal Parameters[a]	Mean	62.50	76.53
	Std. Deviation	12.392	9.548
Most Extreme Differences	Absolute	.142	.146
	Positive	.080	.104
	Negative	-.142	-.146
Kolmogorov-Smirnov Z		.854	.875
Asymp. Sig. (2-tailed)		.460	.428

a. Test distribution is Normal.

Based on the table above, it shows that the significance values of pre-test and post-test in experimental class are 0.460 and 0.428. The significance values of both pre-test and post-test are bigger than 0.05. It means that the data of experimental class has normal distribution. Then, the result of normality testing in control class can be seen below:

Table 3.10 Table of Normality Testing in Control Class
One-Sample Kolmogorov-Smirnov Test

		Pretest_Cont	Posttest_Cont
N		39	39
Normal Parameters[a]	Mean	60.00	65.38
	Std. Deviation	12.566	10.348
Most Extreme Differences	Absolute	.146	.126
	Positive	.085	.099
	Negative	-.146	-.126
Kolmogorov-Smirnov Z		.911	.788
Asymp. Sig. (2-tailed)		.377	.564
a. Test distribution is Normal.			

Based on the table above, it shows that the significance values of pretest and post-test in control class are 0.377 and 0.564. The significance values of both pre-test and post-test are bigger than 0.05. It can be concluded that the data of experimental class has normal distribution.

2. Homogenity Testing

Homogeneity testing is used to determine data variation, whether the data has a homogeneous variance or not. The researcher used Homogeneity of Variances Test by using SPSS 16.0 with the significant value is 0.05.

a) If the significance value > 0.05, then the data distribution is homogeneous

b) If the significance value < 0.05, then the data distribution is not homogeneous

The result of Homogeneity Testing can be seen below:

Table 3.11 Table of Homogeneity Testing
Test of Homogeneity of Variances

Vocabulary Mastery

Levene Statistic	df1	df2	Sig.
.087	1	73	.769

Based on the table above showed that the significance value of posttest is 0.769. It can be concluded that significance value that is 0.769 is bigger than 0.050 and the data distribution is homogeneous.

G. Data Collecting Method

Collecting data means identifying and selecting individuals for a study, obtaining their permission on the study them and gathering information by asking people questions or observing their behavior (Creswell, 2012:9). The data collection method in this research was done in three steps:

1. Prettest

    The researcher conducted the pretest to measure the students' initial academic vocabulary mastery before receive a treatment. There were 20 items in the form of multiple choice items about descriptive text (see *Appendix 4*) and the students were given 45 minutes to do the prettest. The test hold on 2nd August 2018 to the control group and experimental group where 39 students in controlled group and 36 students in experimental group. The students' pretest scores of the experimental and the control groups can be seen in *Appendix 2*.

2. Treatment

      After administering pretest, the researcher gave the same materials both experimental class and control class but with different method. The experimental class is given treatment of mnemonic keyword method and for the control class will receive conventional method but without treatment. The treatment for experimental class and control class was done in 3 times exactly on 6th August until 13th August 2018. The procedure of teaching by using mnemonic keyword method and conventional method simply like state below;

Table 3.12 Treatment in Experimental Class and Control Class

Mnemonic Keyword Method on Experimental Class (VIII A)	Conventional Method on Control Class (VIII B)
- First, greeting.	- First, greeting.
- Then, teacher gives them warm up a text about descriptive text	- Then, teacher gives them warm up a text about descriptive text
- Then, teacher gives them a several words and asked them to translate into Indonesian words.	- Then, teacher devided into several groups.
- Then, teacher explained mnemonic keyword method to students.	- Then, the teacher ask students to read a text about people or animals or historical building.
- Then, the teacher ask students to read a text about people or animals or historical building.	- Then, the teacher asks students to find out the difficult word or words that they do not understand.
- Then, the teacher asks students to find out the difficult word or words that they do not understand.	- Then, the students looked for the difficult word in their dictionaries.
- Then, the students writes the difficult words on the whiteboard and the teacher writes including the meaning.	- Then, the teacher asks students to classification the difficult words according to part of speech and the

- The teacher uses spesific word that similarity to the target word as the keyword in order to students can memorize easily. - The students is asked to make an assosiation between the target word and the keyword - The teacher says words followed by the students to say properly. The teacher gives some correction if there are students making mistakes in saying or pronouncing the words. - Then, the teacher asks students to work in group to classification the difficult words according to part of speech and the students know the synonym or antonym of certain word.	students know the synonym or antonym of certain word.

3. Posttest

   The researcher conducted the posttest was to measure the students' vocabulary mastery by using mnemonic keyword method after they received the treatment. By analyzing the students' posttest scores, the writer could measure the significant difference in students' achievement between the experimental and control groups. In addition, the test hold on 16th August 2018 with the same material about descriptive text). There were 20 items with multiple choice test items format in this test (see *Appendix 4)*. The students' pretest scores of the experimental and the control groups can be seen in *Appendix 2.*

H. Data Analysis

Data analysis is used by researcher to analyze the collected data. The data is taken from students' score in pretest and posttest. The score gather from both experimental class and controlled class. The researcher want to know the significant effectiveness of using mnemonic keyword method to students' vocabulary mastery by using statistic calculation of t-test formula with degree of 0.05 significance by using SPSS 16 for windows. First, the researcher determines the mean of experimental class (A) and control class (B). The data which is gained from the pre-test and post-test of students' vocabulary mastery, then it will be analyzed by the t-test statistic. Then, determine standard error mean of variable X and Y. Finally, determine t-test to know the students' vocabulary mastery.

The method of the data is the null hypothesis (H_0) is rejected and the alternative hypothesis (Ha) is accepted when the significant level is bigger than significant value. It means that there is any different score between the students' vocabulary mastery in experimental class and control class. And the different is significant. Then, if the significant level is smaller than significant value, the null hypothesis (H_0) is accepted and the alternative hypothesis (Ha) is rejected. It means that there is not any different score between the students' vocabulary mastery in experimental class and control class. Finally, the different is not significant.