

CHAPTER III

RESEARCH METHOD

This chapter covers research design, population, sample and sampling, variable of the study, research instrument, validity and reliability testing, normality and homogeneity testing, data sources, data collection method, and data analysis.

A. Research Design

In this study the researcher used Quasi-Experimental design with nonrandomized control group, pretest-posttest design. This research involved two groups of subject; they were experimental class and control class. The experimental class was taught using Vocabulary Self – collection Strategy and control class was taught without using Vocabulary Self – collection Strategy. The two groups were measured or observed not only after being exposed to a treatment of some sort but also before. So the researcher gave pretest and posttest to measure the different attained scores in Vocabulary Mastery. The design of the study was taken from Ary (2006) and presented in the diagram below:

Table 3.1 The diagram of nonrandomized control group, pretest-posttest design:

Group	Pretest	Treatment	Posttest
C	Y_1	X	Y_2
B	Y_1	–	Y_2

(Taken from Ary, 2006)

Notes:

C: Experimental group

B: Control group

Y_1 : pre-test

Y_2 : post-test

X: Treatment on the experimental group

Based on the diagram above, the procedures of experimental research used nonrandomized control group, pretest-posttest design were:

1. Administering a pretest with a purpose of measuring vocabulary mastery of the eight grade student of VIII-C and VIII-B classes at SMPI Anharul Ulum before being taught by using Vocabulary Self – collection Strategy (VSS).
2. Applying the experimental treatment using Vocabulary Self – collection Strategy to the eight grade students of VIII-C class at SMPI Anharul Ulum and applying Traditional Method to the eight grade students of VIII-B class at SMPI Anharul Ulum.

3. Administering a posttest with a purpose of measuring vocabulary mastery of the eight grade student of VIII-C and VIII-B classes at SMPI Anharul Ulum after being gave a treatment and without treatment.

Different attribute to the application of the experimental treatment was determined by comparing the pretest and posttest scores. In this study, the researcher wanted to know the effectiveness of using Vocabulary Self – collection Strategy toward students’ vocabulary mastery by conducting an experimental research and providing a specific treatment. The effectiveness would be known after knowing the significant differences scores on Vocabulary mastery between the students taught by using Vocabulary Self – collection Strategy and those taught without using Vocabulary Self – collection Strategy.

B. Population, Sampling, and Sample

1. Population

Population is all elements that become the areas of the research. It consists of entire set of object, observation, or score that have something in common. The population in this research included the whole eight grades’ students of SMPI Anharul Ulum at the second semester in the academic year 2017/2018. There were three classes comprised VIII-A, VIII-B, and VIII-C.

2. Sampling

Sampling is a technique of taking sample which gives opportunity for every element or population member to be chosen as sample. In this study the researcher used purposive sampling technique. It was technique to determine sample with a particular consideration. The main consideration was the chosen classes had homogenous ability. In other words, the students in those classes had average proficiency in speaking.

3. Sample

Sample is a portion of a population. Since the population is too large, the researcher needs a sample. Based on the set consideration, they were two classes as the sample of the study; they were VIII-C class consisted of 30 students as the experimental class and VIII-B class consisted of 30 students as the experimental class. So, the total sample was 60 students.

C. Variable of the Study

A variable is a construct or characteristic that can take on different values or scores. Variables can be classified in several ways. According to Ary (2006:40), the most important classification is on the basis of their use within the research under consideration when they are classified as independent (X) and dependent (Y) variables.

Independent variables is variable that consequence of or upon antecedent variables. One independent variable must be the treatment

variable. One or more group receives the experimental manipulation or treatment. In this study the independent variable was Vocabulary Self – collection Strategy. Dependent variable is the response or criterion variable that is presumed to be caused by or influenced by the independent treatment condition and any other independent variables. In this study the dependent variable was the students’ vocabulary mastery.

D. Research Instrument

In order to have high quality of research data, the instruments used must meet requirements as good instruments. The instrument was used in this research was vocabulary test. The format of test was objective multiple choice. In collecting the data, two kinds of test were administered, they were Pre-test (25 item) and Post-test (25 item). Pretest was administered before teaching using Vocabulary Self – collection Strategy class and taught using Traditional Method. Meanwhile posttest was administered after doing a treatment by using Vocabulary Self – collection Strategy to experimental class and without using Vocabulary Self – collection Strategy to control class. In this research, to score the students’ vocabulary mastery, the researcher used score criteria.

Table 3.2 Score criteria

Score	Criteria
85-100	Excellent
70-84	Good
55-69	Average
40-54	Poor
0-39	Very Poor

E. Data and Source of Data

In this study the data were taken from the students' scores of the eight grade students at SMPI Anharul Ulum in the academic year 2017/2018 from pre-test and pos-test. Those data were used to know the students' vocabulary mastery between the students taught by Vocabulary Self – collection Strategy and those taught without using Vocabulary Self – collection Strategy. The data source in this study was the students of VIII-C and VIII-B classes of SMPI Anharul Uum.

F. Validity and Reliability Testing

According to Ary (1985) researcher is always dependent measurement. On the way to making accurate judgment about the competence of the students, there are two important characteristics that every measuring instrument should go through a process; validity and reliability check.

a. Validity Testing

1) Validity

Validity is the degree to which a test measure what it is supposed to measure. Brown (2003: 22) explained that validity is the most complex criterion of an effective test and the most important principle of language testing. According to Gronlund (1998) as quoted in Brown (2003:22) stated that validity is the extent to which inferences made from assessment results are

appropriate, meaningful, and useful in terms of the purpose of the assessment. Thus, a valid test should measure what the researcher wanted to measure. In this research, the researcher considered the content and construct validity for the test as the instrument of research.

2) Content Validity

Content validity is a kind of validity which depends on careful analysis of the language being tested and a particular test. Hughes (2003:26) stated that test is considered to have content validity if its contents constitutes a representative sample of language skills, structures, etc. with which it is meant to be concerned According to Mousavi (2002) as cited by Brown (2003: 22)explained that a test is valid if it requires the students to perform the behavior that is being measured.

The most proper role for achieving the content validity for the speaking test was to test the students' speaking performance directly. The researcher also looked at the syllabus when constructing the test and the test was suitable to the syllabus of English for Junior High School in the competence of vocabulary mastery. Content validity was shown in the table below:

Tabel 3.3 Matrix of Content Validity

Syllabus	Indicator	Learning Material	Technique	Test Item
Basic Competence Read aloud meaningful short functional simple essay in form of narrative/recount text by pronunciation, stress, and intonation which acceptable involving surrounding	Students can identify the vocabulary from the content of narrative/recount text	Text 1. 'Donkey and a Lapdog'(fill the blank spaces) Text 2. 'Wonderful parrot'(fill the blank spaces) Text 3 'The King of The Jungle'(match with the synonym) Text 4 'Toba Lake'(match with the antonym)	Written Test Students answer Multiple choice question based on the text.	Pre - Test
	Students can identify the vocabulary from the content of narrative/recount text	Text 1 'The Arrogant Tiger'(fill the blank spaces) Text 2 'Little Red Riding Hood'(fill the blank spaces) Text 3 'The Lost Caterpillar'(match with the synonym)	Written Test Students answer Multiple choice question based on the text.	Post - Test

		Text 4 'Roro Jonggrang' (match with the antonym)		
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3) Construct Validity

Brown (2003:25) explained that "Construct is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception". In the term of construct validity, the test is considered to have construct validity if it can be demonstrated that it measures just the ability which is hypothesized in a theory of language ability. Both in the pre-test and post-test, the researcher gave vocabulary test thought written test. The tests were considered to have construct validity for the purpose of testing proficiency in vocabulary mastery.

b. Reliability Testing

A test considered to have reliability if it is consistent and dependable. According to Mousavi (2002) as quoted by Brown (2003: 20) explained that "If the students are given the same test or matched students on two different occasions, the test should yield similar results". The words 'similar result' here means that almost

impossible for the students to get exactly the same scores when the test is repeated the following day. Reliability is a measure of accuracy, consistency, dependability of fairness of scores resulting from administration of particular examination.

In this test, the researcher used Cronbach's Alpha to know the reliability of the test. The researcher tried to check the empirical reliability by using Cronbach's Alpha and to analyze the reliability the researcher used SPSS 16.0 after trying out the instrument.

The criteria of reliability according to Sujianto (2009;97), the value of Cronbach's Alpha as follows:

Table 3.4 Value of cronbach's alpha

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

Table 3.4 Correlation of pre-test (try-out)**Reliability Statistics**

Cronbach's Alpha	N of Items
.620	25

The table showed that the result of Cronbach's Alpha is 0.620. it is conclude that the instrument of pre-test I reliable.

Table 3.5**Correlation of post-test (try-out)****Reliability Statistics**

Cronbach's Alpha	N of Items
.708	25

The table showed that the result of Cronbach's Alpha is 0.708. it is conclude that the instrument of post-test is reliable.

G. Normality and Homogeneity Testing

Before analyzing the significant difference between the students taught using Vocabulary Self – collection Strategy and those taught without Vocabulary Self – collection Strategy, the data should

be normal distribution and homogenous. To measure the data computation were normal distribution and homogenous, the researcher conducted normality testing and homogeneity testing. The result as follow:

1. Normality Testing

Normality testing is used to determine whether the data gained has normal distribution or not. In this study, researcher used SPSS 16.0 *for windows* with *Shapiro-Wilk* to test the normality of the data gained. The normality of the data can be seen based on the significant value (α) = 0.050 rules as follows: The hypotheses for testing normality are:

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

There is also certainty in taking decision of normality testing, as follow:

- a. If the value of significance > 0.050 , H_0 is accepted.
- b. If the value of significance < 0.050 , H_0 is rejected.

The result of normality testing can be seen on the table 3.6 below:

Table 3.6 Normality Testing of Experimental Class and Control Class**Tests of Normality**

Strategy	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Result experimental	.228	30	.000	.916	30	.022
Control	.168	30	.031	.940	30	.089

a. Lilliefors Significance Correction

Based on the output from SPSS above it was known that the significance value from pre-test of experimental class was 0.022 and the significance value from pre-test of control class was 0.089. The significant value on pre-test of experimental class were bigger than 0.05 ($0.022 > 0.05$). The significant value on pre-test of experimental class was bigger than 0.05 ($0.089 > 0.05$). Both significant value of experiment class and control class were bigger than 0.05. It means that H_0 was accepted and H_a was rejected. So, it can be interpreted that both of data (pre-test of experiment class and control class) were in normal distribution.

2. The Result of Homogeneity Testing

Homogeneity testing is used to determine whether the data gained has a homogeneous variance or not. To know the homogeneity, the researcher used Test of Homogeneity Variance formula by using SPSS program 16.0 version. Homogeneity testing was done after doing the distribution score of group involved. The computation of homogeneity testing uses *Test of Homogeneity of Variances* in SPSS 16.0 for windows by the value of significance (α) = 0.050. The homogeneity of data can be decided based on the hypothesis of homogeneity as follow: Before doing homogeneity testing, the researcher decided hypothesis in this homogeneity as follow:

- a. H_0 : 1 variance (Experimental group and Control group) was homogenous.
- b. H_a : 1 variance (Experimental group and Control group) was not homogenous.

There is also certainty in taking decision of homogeneity testing, as follow:

- a. If the value of significance > 0.050 , H_0 is accepted.
- b. If the value of significance < 0.050 , H_0 is rejected.

The result can be seen in table as follow:

Table 3.7 Homogeneity Testing of Experimental Class and Control Class**Test of Homogeneity of Variances**

Result

Levene Statistic	df1	df2	Sig.
.116	1	58	.735

Based on the output from SPSS above it was known that the significance value was 0.735, it means that the significant is more than 0.05 ($0.735 > 0.05$). It means that H_0 was accepted and H_a was rejected. So, it can be interpreted that the homogeneity testing of variance in both group in this research showed that the data had homogeneous variance, so it was qualified to be analyzed.

H. Description of Treatment

In this study, the treatment conducted three meetings since the researcher has no authority to conduct more than it moreover the class did not belong to the researcher. The treatment was given after administering the pretest and before the posttest. The first meeting is conducted on May 14th 2018, the second meeting is conducted on May

15th 2018, and the third meeting is conducted on May 17th 2018. The procedures of treatment can be seen as follow:

a. First, treatment was conducted on May 14th 2018

Before beginning applied Vocabulary Self – collection Strategy in teaching reading, the researcher conveyed about the element of narrative text such as the generic structure and the use simple past tense. Then, the researcher introduced the technique Vocabulary Self – collection Strategy, especially in vocabulary mastery by sharing information. Then, the researcher grouped the students consist of 2 students. After that, the researcher gave exercise to the students. The students should read a narrative text base on the work sheet given by the researcher. The title is “King Midas””. And then Teacher demonstrate how to select and nominate important words from the text and Teacher write the word, the context in which it was used, its meaning, and the reason for selecting the word on the whiteboard.

b. Second, treatment was conducted on May 15th 2018

After that Students work in groups and they read a short passage from the book with the teacher. They are guided by the teacher to identify a word they wish to select. And together, the students and the teacher engage in a discussion on developing a reason for nominating their word, and each small group moves to nominate one word for learning. and each small group moves to

nominate one word for learning. Students use their own papers to write the word, the sentence from the text in which the word was found, the meaning, and the reason for selecting the word.

c. Third, treatment was conducted on May 17th 2018

Students as Spokesperson from each group should write down the word in the whiteboard and present their word by answering the following question;

- 1) Where is the word in the text?
- 2) What do members of group think the meaning of the word?
- 3) Why do members of group decide on that word and why do other students need to learn the word?

And other groups present their words. Then the students write the words into their own personal words list

d. Data Collecting Method

Data collection method is the way the researcher collect data. Method of data will provide reality about some steps which are used in the process of collecting data. Researcher used two kinds of tests. They were:

1) Pre-test

Pre-test refers to a measure or test given to the subject prior to the experimental treatment. It was administering for both VIII-C class as the experimental class and VIII-B class as control class to measure their vocabulary mastery. Pre-test

was administered to experimental class and control class on Saturday, 12th April 2018.

2) **Post-test**

Post-test was a measure on some attribute or characteristics that was assessed for participant in an experiment after treatment. Post-test was administered for the experimental class and control class after the treatment finished. The researcher applied Vocabulary Self – collection Strategy for experimental class and applied traditional method for control class. Post-test was administered to the experimental class and control class on Saturday, 19th May 2018.

3) **Data Analysis**

Data analysis is a technique to analyze data to know the result of a research. In analyzing data, the researcher used quantitative data by using statistical program *SPSS 16.0 for windows*. The quantitative data analysis was used to know the significant differences on the students' vocabulary mastery between the students taught by using Vocabulary Self – collection Strategy and those taught without using Vocabulary Self – collection Strategy.

Data obtained from the post-test from both group of Experiment class and Control class would be analyzed

statistically using *Independent-Sample T-Test* through *SPSS 16.0 for windows*. The researcher used t-test to know the significant value was higher or smaller than 0.05. The technique of data analysis used by the researcher belonged to quantitative data analysis.