

CHAPTER III

RESEARCH METHOD

This chapter highlights the research method which is used in this study. Those include research design, population and sample, research instruments, validity and reliability testing, normality and homogeneity testing, data collection method, and data analysis.

A. Research Design

The researcher employed quantitative research through experimental design. Ary et al (2002), as cited in Rahmawati (2016) says that this experimental study has three subdivisions including pre-experimental, quasi-experimental, and true-experimental. In the present research, the researcher only focused on pre-experimental which meant there was only an experimental group here. The researcher decided to take pre-experimental in order to help the students to enrich their vocabulary mastery. Hence, it just needed a class which was given treatment. In this study, the independent variable was implementing One Day One Word (ODOW) Strategy meanwhile the dependent variable was the students' vocabulary mastery.

The research design used in this study was pre-experimental design in the form of one-group pre-test and post-test. The students were treated

to take a pre-test and post test. Munir (2016) divides the procedures of the research into three part, they are: pre-treatment, treatment, and post-treatment.

Based on the theory above, then the researcher planned the pre-experimental procedures as below:

1. Pre treatment

Pre-treatment means that the eighth grade students of Islamic Junior High School 2 of Blitar were given a pre-test before applying One Day One Word (ODOW) Strategy. This was aimed to measure the students' achievement on vocabulary mastery before being implemented toward One Day One Word Strategy.

2. Treatment

The treatment in this study is the students were treated to apply One Day One Word (ODOW) Strategy. They were demanded to list the vocabulary minimum a word on a day. Then, they were asked to report their activity utilizing a nowadays media social application that is 'WhatsApp'. The students reported their list in the One Day One Word group of WhatsApp everyday. If the students were not available in WhatsApp, then they reported by using texting to the researcher. This one was aimed to monitor the students' activity and their improvement.

3. Post-Treatment

Post-treatment means that the students were given a post-test after implementing the strategy. This post-test is aimed to re-measure the students' achievement on vocabulary mastery of eighth grade students of Islamic Junior High School 2 of Blitar after being given treatment (manipulation) by applying One Day One Word (ODOW) Strategy.

After implementing those steps, then the researcher compared both the students' score of pre-test and post-test. The ratio of those score was used to detect the significant difference of students' ability before and after implementing One Day One Word (ODOW) Strategy. In this research, the significant difference was determined by students' score of vocabulary mastery before and after being taught utilizing One Day One Word (ODOW) Strategy.

B. Population and Sample

1. Population

Population is defined by Seltman (2015:34) as the entire set of actual or potential observational units. In other word, population means all subjects where the data can be gathered. In this study, the population is all of eighth grade students of Islamic Junior High School 2 of Blitar period 2016/2017 which consist of 343 students.

They are divided into nine classes which are class A, class B, class C, class D, class E, class F, class G, class H, and class I.

2. Sample

Sample is defined by Arikunto (2016, as cited in Fifah, 2016) as part of representative of population that is observed. Then, Seltman (2015:34) reviews sample as a subset of all of the possible experimental units of the population are actually selected for study. Further, the small group of subject where the data is taken can be defined as sample. Hence, the sample of this study was class A of eighth grade students of Islamic Junior High School 2 of Blitar period 2016/2017. The total subjects which become the sample were 44 students, 20 for males and 24 for females.

Sampling technique which was implemented in the present research was random sampling technique. This sampling technique means that the sample was chosen randomly from all of the available population. The chosen class was class A of eighth grade students of Islamic Junior High School 2 of Blitar.

C. Research Instruments

Research instrument can be defined as the tool which is used to collect the data. Research instrument which was applied by the researcher was test. Test which was conducted was aimed to measure the achievement of the students before and after being taught using One Day

One Word (ODOW) Strategy through vocabulary mastery of the eighth grade students of Islamic Junior High School 2 of Blitar. The test was given into two sections; firstly was pre-test which was conducted at 29th of March 2017 and secondly was post-test which was conducted at 26th of April 2017. The test which was given should be matching to the curriculum including core competence and basic competence of English for eighth grade level. The researcher decided to take some topics related to the basic competence of curriculum. They were about descriptive text, recount text, and narrative text. Those topics were covered into three types of test. Descriptive text was converted into cross words which composing 10 items; meanwhile recount text was switched into jumbled words which consisting of 10 items too; and narrative text was highlighted into cloze test that composing 15 items. Those were applied to either pre-test or post-test. The researcher used same test for either pre-test and post test.

The scoring of each items of the test was relied to the difficulty level of each test. The first section applied descriptive text. It was converted into cross words form. Each item of this test had 1 point. Afterwards, the second section's topic is recount text which was composed to jumbled words. This one was more difficult than the previous test. Thus, each item contained 3 points. The last section was about narrative text. This part was converted to cloze test. Compared to the two types of tests before, this section was the most difficult one. Hence, each item had 4 points. The maximum score of all items was 100 points which is taken

from $[(10 \times 1) + (10 \times 3) + (15 \times 4)] = 10 + 30 + 60 = 100$ points. The minimum score of all items was 0.

D. Validity and Reliability Testing

The instrument which is used in this research was test. To judge whether the test can be used effectively, the researcher should measure both its validity and reliability. To get more information, the researcher described both validity and reliability as below:

1. Validity

Validity was necessary to be conducted in order to check the validity of the instrument which was applied. For understanding deeply about validity, this term has been defined by Isnawati (2014:27) as the most complex criterion of an effective test and the most important principle of language testing. Besides, Sugiono (2015:121) states whether validity means the instrument which is applied can be used to measure what should be measured. Then, it can be beaten out whether the concept of validity is, is it acceptable based on the criteria of good test.

There are four types of validity which is stated by Idawati (2014). Those are content validity, criterion related validity, construct validity, and face validity. In this occasion, the researcher applied three types of validity which were content validity, construct validity, and face validity.

a) Content Validity

Based on its name, the focus of this kind of validity is in the content. For clearer definition, Kothari (2004:74) states that content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study. Idawati (2014) explains whether content validity covers the contents of the test should constitute a representative sample of the language skills, structures, etc. being tested. Thus, the content of instrument which was applied should be appropriate with both vocabulary mastery of the students and the curriculum which is used. The instrument here was test which consists of cross words, jumbled words, and cloze test. All of those types of assessments include to vocabulary testing. Besides, the content of each type of test is related to the curriculum which obtains in Indonesia that is K-13. The materials of the test were adapted by the researcher from the main competence and basic competence which is applied for eighth grade students' level. Both of main competence and basic competence are presented in the table below:

Table 3.1 Main Competence and Basic Competence used in the Content Validity

| NO | MAIN COMPETENCE (KI) | BASIC COMPETENCE (KD) |
|----|---|--|
| 1 | 3. Memahami dan menerapkan pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata | 3.3 Memahami tujuan, struktur teks, dan unsur kebahasaan dari teks deskriptif lisan dan tulis tentang orang/binatang/benda, sangat pendek dan sederhana. |
| | | 3.4 Memahami tujuan, struktur teks, dan unsur kebahasaan dari teks recount lisan dan tulis tentang pengalaman/kegiatan, kejadian/peristiwa, sangat pendek dan sederhana. |
| | | 3.6 Memahami tujuan, struktur, dan unsur kebahasaan dari jenis teks naratif, lisan dan tulis, berbentuk fabel, pendek dan sederhana. |

b) Construct Validity

Analyzing from the term, construct means the construction which is needed for the instrument. For addition, Cook & Campbell (1979) as quoted in Beaumont (2009) asserts that it is the degree to which the constructs of interest have been effectively operationalized. Then, Idawati (2014) adds that it refers to any underlying ability which is hypothesized in a theory of language ability. Hence, the

construct validity can be concluded as the theory used to construct the test should be match to what will be tested. In this case, the test items should be appropriate to the vocabulary theory. In this study, the researcher found out the theories of vocabulary and the materials which were suitable to the students' need. The construct of the tests were used to test the vocabulary. They were cross words; jumbled words; and cloze test. Further, the construct of those types of test is appropriate to test vocabulary.

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). Then, Beaumont (2009:20) explains about face (logical) validity that is the degree of belief that to measure appears to measure what it is supposed to. 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.

2. Reliability

Reliable can be defined as consistency and dependability (Idawati, 2014: 18). For addition, Beaumont (2009: 15) defines whether reliability means level of consistency of a particular measurement/procedure. Thus, reliability can be concluded as the consistency of the instrument which is used to produce almost same score of test takers.

In order to find out the reliability of both pre-test and post-test, the researcher applies the formula of Kuder-Richardson Reliability that is KR – 20 Formula. It is aimed because of the researcher only takes once in trying out the instrument. This happened because of the test which was used to either pre-test or post-test was same. To find out the result of reliability of the test, the researcher was helped by SPSS version 16.0. Before calculate the reliability, the researcher should analyze each item of each test. How many students answered correctly and how many students answer wrongly should be analyzed one by one. This step also should be passed for each test (the items analysis is available in Appendix 3 page 88). Because of there were three types of test, the researcher should analyze the reliability of each type of test. This means whether each type of the test should be analyzed one by one. The result of try out analysis was shown as below:

Table 3.2 Try Out Result Analysis

| No | Subjects | Items correct Test 1 | Items correct Test 2 | Items correct Test 3 | Total Items correct (X) | Score |
|-------|----------|----------------------|----------------------|----------------------|-------------------------|-------|
| 1 | ASF | 15 | 18 | 9 | 42 | 78 |
| 2 | DAI | 15 | 14 | 8 | 37 | 67 |
| 3 | KSD | 15 | 11 | 15 | 41 | 82 |
| 4 | PWN | 15 | 12 | 15 | 42 | 84 |
| 5 | WNJ | 11 | 15 | 4 | 30 | 53 |
| 6 | ZMAL | 15 | 12 | 9 | 36 | 66 |
| 7 | RFAS | 12 | 13 | 10 | 35 | 68 |
| 8 | MIR | 14 | 1 | 1 | 16 | 19 |
| 9 | RH | 14 | 3 | 1 | 18 | 23 |
| 10 | SH | 8 | 1 | 2 | 11 | 16 |
| Mean | | | | | 30.8 | 55.6 |
| Total | | | | | 308 | 556 |

Then, the researcher analyzed the reliability of the data above using SPSS version 16.0. (For complete tutorial is available in Appendix 8). The result was shown as below:

Table 3.3 The SPSS Reliability Result of Test 1

| Reliability Statistics | |
|------------------------|------------|
| Cronbach's Alpha | N of Items |
| .833 | 15 |

Table 3.4 The reliability result of the test 2

| Reliability Statistics | |
|------------------------|------------|
| Cronbach's Alpha | N of Items |
| .928 | 20 |

Table 3.5 The reliability result of the test 3

| Reliability Statistics | |
|------------------------|------------|
| Cronbach's Alpha | N of Items |
| .941 | 15 |

To describe the result of the Cronbach's Alpha of each test above, the researcher used the standard of George and Mallery (2003, as cited in A. Gliem and Rosemary R. Gliem, 2003) who provide the following rules of thumb:

- a) If $0.9 > \alpha > 1.0$, it means that it is excellent.
- b) If $0.8 > \alpha > 0.89$, it means that it is good.
- c) If $0.7 > \alpha > 0.79$, it means that it is acceptable.
- d) If $0.6 > \alpha > 0.69$, it means that it is questionable.
- e) If $0.5 > \alpha > 0.59$, it means that it is poor.
- f) If $\alpha < 0.5$, it means that it is unacceptable.

From the result of calculating reliability using KR-20 by SPSS version 16.0, it could be gotten that test 1 was 0.833. This could be grasped based on the criteria of George and Mallery above

that test 1 had a good reliability because of the α is higher than 0.8 and lower than 0.89. Next, test 2 showed Alpha Cronbach 0.928. This number was also more than 0.9 ($\alpha > 0.9$). Then, it meant that test 2 included to an excellent reliability. Next is test 3 which had an Alpha Cronbach 0.941. This result was also higher than 0.9 which meant it included to an excellent reliability.

Then, the reliability of the three types of test 2 and test 3 above showed the result is higher than 0.9 which indicates the reliability of the test is excellent. Then, the reliability of the test 1 showed the result 0.833, which included to a good reliability. In conclusion, this test can be tested to the students on both pre-test and post-test.

The calculated data above was applied to measure the reliability of the try out result. The try out was held on Friday, 24th March 2017. Try out was conducted in order to measure the reliability and the validity of the instrument before conducting both pre-test and post-test. The researcher only took 10 eighth grade students which became the sample of try out. The instrument was divided into three kinds of test. Test 1 was cross word test which consists of 15 items. Then, test 2 was jumbled word which consists of 20 items. Next, test 3 was cloze test which consists of 15 items. The scoring scale was 1 point for correct item on test 1. Then, 2 points for correct item on test 2. Next, for test 3 each item has 3

points. The total is $\{[15 \times 1] + [20 \times 2] + [15 \times 3]\} = 15 + 40 + 45 = 100$. The researcher gave extra items for try out instrument to ease eliminating unreliable and invalid items. It means that for either pre-test and post-test, the researcher only takes 10 items for test 1, 10 items for test 2, and 15 items for test 3.

E. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is used to check whether the data which is taken has been normal distributed or not. For testing the normality of the data, the researcher uses SPSS version 16.0 with the formula of One-Sample Kolmogrov-Smirnov test with significance value $\alpha = 0.05$. The result of the data is presented as below:

- a) If $\alpha > 0.05$, it means that the distribution of data is normal.
- b) If $\alpha < 0.05$, it means that the distribution of data is not normal.

When the analysis data distribution is normal, the next analysis is homogeneity testing. This formula would be applied in chapter 4.

2. Homogeneity Testing

Homogeneity testing is used to check the homogenous data which is taken. The researcher counts the homogeneity using SPSS version 16.0 with the formula of One Sample Kolmogrov Smirnov

test within the significance value $\alpha = 0.05$. The hypothesis is the data will be homogenous if the significant value (α) is more than 0.05 ($\alpha > 0.05$). Meanwhile, the data will be not homogenous if the significant value is more less than 0.05 ($\alpha < 0.05$). In other word, if the data is not homogeneous, it would be a heterogeneous data.

F. Data Collection Method

The data collection method serves the way of the researcher gets the data which is needed. In order to measure the effectiveness of One Day One Word Strategy, the researcher uses test as the instrument. To get the data, the researcher conducts both pre-test and post-test. The way of collecting data clearly is presented below.

1. Pre-Test

Pre-test was conducted on Wednesday, 29th of March 2017. The time was at 09.00 a.m., up to 10.40 a.m. (The students took a break at 09.40 a.m. up to 10.00 a.m. Then, they continued to finish the test after the break time). Holding a pre-test was aimed to measure the students' achievement on vocabulary mastery before being taught toward One Day One Word Strategy. The topic which was taken was considered by the curriculum of eighth grade students. The researcher took 3 topics; they were descriptive text, recount text, and narrative text. Hence, the pre-test had 3 kinds of test which covered those topics. For first test, it was converted to


cross word which consists of 10 items. Then for second test, it consisted of 10 items too which covered to jumbled words. Next, for the third test, it was covered to cloze test which consisted of 15 items. The scoring of each item had been explained on sub-chapter research instrument. There were 12 students of class 8th – A who did not come to the school. Hence, there were only 32 students who came. For completing the requirement of the score, the researcher conducted the second pre-test for absent students on Saturday, 1st of April 2017. Thus, all of score has been gotten.

2. Post-Test

A post-test was conducted after manipulating students within One Day One Word Strategy. The post test was held on Wednesday, 26th of April 2017 at 09.00 a.m. up to 10.40 a.m. (The students took a break at 09.40 a.m. up to 10.00 a.m. Then, they continued to finish the test after the break time). This test was aimed to measure the students' achievement on vocabulary mastery after implementing One Day One Word Strategy. There were no absent students on post-test day. Further, the researcher had gotten all the data which was needed. The test which was used for post-test was similar test which was given on pre-test. Hence, it could be seen clearly whether the students increased their vocabulary mastery or not after implementing One Day One Word.

G. Data Analysis

Data analysis is aimed to analyze the data which has been earned. This data analysis is very important to measure the students' vocabulary mastery before and after being taught using One Day One Word Strategy. The data of this research had been gotten from both pre-test and post-test of eighth grade students of Islamic Junior High School 2 of Blitar which focuses on their vocabulary mastery. For analyzing the data, the researcher uses SPSS version 16.0 with the formula of Wilcoxon. The researcher uses the formula of Wilcoxon in order to find the significant difference of students' score before and after implementing One Day One Word Strategy. (The more complete tutorial steps are presented in Appendix 6). The steps of using SPSS are:

1. Convert the result data both pre-test and post test score of the students into the column of SPSS data view by copying the data the paste the data in the available table in 'data view'.
2. Click 'variable view', and then change the name of data 1 into Pre-Test and data 2 into Post-Test.
3. Click 'data view' again, click menu 'analyze'.
4. Select 'Non-Parametric Tests'.
5. Then select '2 – Related Samples'.
6. Move both of variables 'Pre-test' and 'Post-Test' to the right side by clicking icon .
7. Next, give the sign \surd in the column named Wilcoxon.

8. Then click OK. The data will be analyzed automatically and correctly.

To find the significant difference of the pre-test score and post-test score, the calculated data using Wilcoxon's formula above can be interpreted by: if $P_{\text{value}} (\text{sig}) < 0.05$, there can be concluded that there is a significant difference. However, if $P_{\text{value}} > 0.05$, there is no significant difference on students' pre-test and post-test.