CHAPTER III

RESEARCH METHODOLOGY

This chapter presents research methodology. It presents with method of the study, which was important as a guideline to attain the objectivity or the study. It provide to about research design, population and sample, data collection and data analysis. These will be mentioned as follows:

3.1 Research Design

Design research methodology is the important part in conducting the research. This study, the researcher uses an experimental research design. Ary Jacob & Razavich (1990:310) stated that experiment design refers to conceptual framework within which the experiment is conducted. That statement is supported by Ary Jacob & Razavich (1990:298) Experiment is a scientific investigation where the experimenter controls one or more independent variable and observes the effect of these manipulations of dependent variable. From the statement above it means that, the researcher controls and observes the manipulate process in the control group and experimental group. So, for this study the researcher uses quantitative research and refers to experimental research design because the study is to test whether REAP strategy is effective or not in teaching reading of narrative text.

According to Best (1981:68-69) there are three categories in experimental research design: true experiment design, pre experimental design, quasi

experimental design. In this study, the researcher uses quasi experimental design. Campbell (2002) states that quasi experiment does not evaluate the intervention randomly. It means in control group and experiment group the random process can not be applied. In quasi experimental design, there are two groups, they are experimental group and control group. Both two groups have same test but different treatment for the researcher.

Quasi experimental research design is applied by giving test. The test gives twice (pre-test and post test) for experimental group and control group. The first step, researcher will give pre- test for both experimental group and control group to measure the ability of the students in reading text before applying treatment. The second, researcher will give treatment about REAP strategy in teaching reading of narrative text only for experimental group. The treatment will be done four time by the researcher. Meanwhile, for the control group will be taught by using what I want to Know, What I want, what I have Learned (KWL) strategy. The researcher selected this strategy because KWL strategy is almost similar with Read, Encode, Annotation and Ponder (REAP) strategy. For the last, the researcher will give post-test for both experimental group and control group to evaluate the progress of the students in reading comprehension of narrative text after implementing REAP strategy in teaching reading of narrative text.

Table 3.1 The design of quasi chart could be illustrated as follows**:**

Class	PRE-TEST	TREATMENT	POST-TEST
Experimental	+	√	+
Control	+	X	+

None randomized subjects, pre-test and post-test quasi experiment.

Where:

+   : with treatment by using REAP strategy

-        : with treatment by using KWL strategy

3.2 Population And Sample

The population of the study is a group of people which share the same of characteristics. Mc.Milan (1992:69) states that the population is a group of persons that the researcher intends to generalize the result of the study. Ary et al (1985:138) states that the small group that is observed is called sample and the larger group about the generalization is called population. From the statement above, the population of this study are the students of 8th grade at SMP YPI Darussalam 1 Cerme. Meanwhile, sample is the process of selecting a group of subjects for a study in such way that the individuals represent the large group from which they were selected (Yount,2006). For this study, the sample are two classes of the eighth grade, they are 8 E and 8 F . The researcher chooses those classes because they have similar ability in English reading skill as shown by the result of homogeneity test. So, the samples of this study are homogenous.

3.3 Data Instrument

The good instrument is used in a research must be valid and reliable, validity refers to the degree to which a test measure what is supposed to be

measured (Gay, 1992: 155). Research instrument is so necessary in doing this research. The success of this research instrument greatly depends on the role which was made. While, the researcher acts as the practitioner who had the important roles to do this research. Here, the researcher used a test to measure the prior knowledge. To make the test valid, the researcher searched another class which had the equal characteristics as the characteristics of A class and B class students.

Based on junior high school Curriculum, there are three types of text genre which are taught at eighth grade. They are descriptive text, recount text and narrative text. But here, the researcher choose narrative text because the researcher follows the RPP and syllabus that use in the eighth grade of junior high school, In this research, the researcher chooses legend and fairy tales text as the material of reading text to be researched. By the analyzing narrative text, students in the eighth grade can understand how to comprehend the text because there are many types of narrative text. And the researcher tries to test how far the students of eighth grade of junior high school at YPI Darussalam 1 Cerme understand and comprehend of the narrative text.

Research instrument of this research is test. It is used by the researcher because it is suitable with the syllabus and lesson plan (RPP) in the 8th class. The syllabus and lesson plan (RPP) in the 8th class is supported by the KTSP curriculum. In this research, the researcher selected reading text from the indicator of reading comprehension at eight grade of junior high school. The indicators as follow:

a.   The students can mention about title of the text after they read

b.   The students can mention about main idea in each paragraph

c.   The students can identify the difficulty of vocabulary in narrative text

d.   The students can identify the generic structure about narrative text

e.   The students can make conclusion and moral value from the text

To select the reading text the researcher see the some of criteria from the indicator. The researcher use simple text to identify the mean idea, generic structure, conclusion and to find moral value of the text. There are three theme of narrative text legend, fairy tales and fable text. By using various themes, the students get more information. So, the students can comprehend those achievements of reading text easily.

The pre-test and post-test consist of 20 items in which use the multiple choices items. The researcher gave different number of items in test because it is appropriate with the indicators and the purposes of the study and the time that will given by the class. Here, the researcher gave two tests that consist of pre-test and post-test. Those tests are explained as follows:

3.3.1. Pre Test

Before giving treatments the researcher give pre test to know the previous ability of the students both of class. Pre-test had some procedures to support this research. That procedure describes as follows: before receiving the treatment, the researcher give the test consist of 20 items. The test was in form of multiple choices items. The questions of the test were related to their material what will be

learned. After finishing the test, the students' submitted their work. Then, the researcher evaluated the student's task. Pre-test conducted to two classes as the sample separately. After that, the researcher divided into two groups including the experimental and control group.

3.3.2. Post Test

Then the researcher give post test to measure the students' progress after giving the treatment use REAP strategy to the experimental group whereas the treatments of control group is KWL strategy so that the researcher know, is the any significant effect of using REAP strategy as treatment of this research. Afterwards, the procedure of post test has the same procedure of pre test.

3.4 Data Collection Technique

Data collection is an important part of this research. So here, the researcher collects the data to avoid some mistakes in getting the data because the data must be valid and reliable. In collecting the data, the researcher takes the students' scores from the tests. Here, the researcher collects pre-test and post test scores. Based on this research the researcher analyzed pre-test and post-test scores by using SPSS version 16.0 program. It purposed to measure the tests which will be examined. In pre-test and post-test, the researcher measured the item tests to be valid and reliable. The validity and the reliability can be explained as follows:

3.4.1. Validity of The test

The validity of the test should be tried before conducting pre-test and post-test as instrument of this study. Tuckman (1975:229) states that test validity refers to whether a test measures what we intend it to measure. It means that, validity is an instrument that made as a measurement to measure items is valid or not valid.

In this research, the researcher also checked the content validity and the construct validity. To determine the content validity, the researcher asked to the English teacher checking the instrument validity as syllabus, lesson plan and scores criteria. The score of multiple choices, there are 20 items and every correct answer could 5 point, totally 100 point. Whereas to determine the construct validity, the researcher used the assistance of SPSS version 16.0 programs to compute descriptive statistics. The instrument validity was examined by analyzing item was good or not. The researcher used in testing the validity in:

$$r - xy = \frac{N(\sum Xy) - (\sum X)(\sum Y)}{\sqrt{(N\sum x^2 - (\sum x)^2 - \{(\sum Y^2) - (\sum y)^2}}$$

Where:

Rxy : the coefficient of correlation X and Y variable or validity of each item.

N : the number of students/subject participating in the test

X : the sum of X scores

Y : the sum of X scores

$\sum Y$: the sum of total score for each student.

$\sum X$: the sum of total score in each item.

$\sum XY$: the sum of multiple score from each student with the total score in each item

$\sum X2$: the sum of the square score in each item and,

$\sum Y$: the sum of the total score from each student.

Each item square is determined by using these following categorizations:

<0, 3   is difficult

03 - 07   is medium

0, 7 - 1   is easy

3.4.2. Reliability of The Test

The researcher uses the reliability in which it is an important element to measure the quality of the test. To measure the reliability, the researcher should to know the consistency of the test scores. In addition, the researcher would be tried out the test in 8 A class of SMP YPI Darussalam 1 Cerme   because, in SMP YPI Darussalam 1 Cerme have six classes and he class had the equal characteristics as the same characteristics of 8 E and 8 F students in SMP YPI Darussalam 1 Cerme.

In this research, the researcher gave try out to 8 A classes in Junior high school of YPI Darussalam 1 Cerme. Here, the researcher used SPSS version 16.0 program to determine the reliability of the test with formula:

$$rkk = \frac{K.Sx^2 - \tilde{x}(k - \tilde{x})}{Sx^2(k - 1)}$$

$$S = \frac{\sqrt{\sum F_x}}{n - 1}$$

$$X = X - \tilde{X}$$

Where:

K : total item that accepted

N : total students followed the test

X : total of correct answer a student

F : total of student who got the particular score in x

Criterion:

$0.0 \leq$ rkk< 0.20 is the lowest reliability

$0.20 \leq$ rkk< 0.40 is the low reliability

$0.40 \leq$ rkk< 0.60 is the quite reliability

$0.60 \leq$ rkk< 0.80 is the high reliability

$0.80 \leq$ rkk< 1.00 is the highest reliability

3.5 Data Analysis

In this research, after the data is collected, the researcher analyzes the data that the researcher got. In analyzing the data, the researcher uses the independent sample t-test in SPSS version 16.0 programs. Independent sample t test is used to compare the score of the experimental and control group. The researcher used SPSS version 16.0 programs to compare a significant difference whether there is

positive effect of using REAP strategy and KWL strategy for teaching reading comprehension of invitation letter.

Assumptions for the independent t-test are:

1. Independence: the observation of each sample must be independent (the samples do not influence to each other)

2. Homogeneity of variance: the two populations must be equal variances (the degree of the distributions is approximately equal).

3.5.1 Homogeneity Test

According to Santoso (2006) found that homogeneity test of variance is used to test whether two sample that have been taken have the same variance or not. It means that we need to test two sample that have been taken have the same variance or not. Two sample is said the same variance if the significant value or the probability value is larger than the level of significant (0.05). While, if the significant value or the probability is lower than the level of significant (0.05) so that, those samples are not the same variance.

In this research, the researcher used independent sample t test in SPSS version 16.0 program. The purpose of this test is to analyze the variances of the observation in experimental group and control group are homogeneous because the researcher cannot random the students. So, the homogeneity test is necessary to make sure the students in both of class have same ability in reading skill or not. After that the researcher can conduct the treatment.

Based on Zawawi (2012) the homogeneity test will be cheeked in independent sample t-test with the following procedure : Firstly, open the SPSS program. Second, click variable view in SPSS data editor. Third, in column name type "score " in the first row and type "Group" in the second row. After that, in column values for the first row let empty (none) and for the second row click small box, in value type "1", in value label type "control group for 8 E", then click add. The next step in value type "2", in value label type "experiment group for 8 F", then click add and click ok. After that, open data view in SPSS data editor, then there are column variable "score" and "Group". Then, type data of post-test according the variable, in variable " Group" type with numeral 1 and 2 (1 refers to "control group 8 E and 2 refers to 'experiment group 8 F"). After that, click analyze → compare means → independent sample t-test. Then, put the variable "score" to test variable, variable "group" for grouping variable. After that, click define group for group 1 type "1" and for group 2 type "2", next click continue. Finally click ok. Then, analyze the result and conclude the result by seeing on sig on the right column of Levene's of error variances table with the criteria of concluding null hypothesis is on the below:

H_o : (null hypothesis) sample data from homogeneous population

H_i : (Alternative hypothesis) sample data not from homogeneous population

Criteria: Ho can be rejected if sig > α (α = 0,05)

H_i = Reading comprehension using REAP strategy

H_o = Reading comprehension without using REAP strategy

3.5.2 Hypothesis Testing

In hypothesis testing, the researcher also uses SPSS 16.0 Program. The hypothesis testing will be checked in independent sample t-test. Independent sample t-test is used to compare the difference of average between experimental group and control group.

The steps in hypothesis testing as the following procedures: Firstly, open the SPSS program. Second, click variable view in SPSS data editor. Third, in column name type "score " in the first row and type "class" in the second row. After that, in column values for the first row let empty (none) and for the second row click small box, in value type "1", in value label type "class 8 E", then click add. The next step in value type "2", in value label type "class 8 F", then click add and click ok. After that, open data view in SPSS data editor, then there are column variable "score" and "class". Then, type data of post-test according the variable, in variable " class" type with numeral 1 and 2 (1 refers to "class 8 E and 2 refers to 'class 8 F"). After that, click analyze → compare means → independent sample t-test. Then, put the variable "score" to test variable, variable "class" for grouping variable. After that, click define group for group 1 type "1" and for group 2 type "2", next click continue. Finally click ok. Then, analyze the result and conclude the result by seeing on sig. (2-failed) on the equal variances assumed if the sample homogeneous and on the equal variances not assumed if the sample not homogeneous with the criteria of concluding null hypothesis is on the bellow:

Hypothesis testing in this research was:

H_i : There is significant difference on the effect of REAP strategy in reading comprehension between experimental and control group.

H_0 : There is no significant difference on the effect of REAP strategy in reading comprehension between experimental and control group.

Criteria : Ho can be rejected if sig. (2-failed) < α, where (α = 0,05).

In analyzing the data , the researcher uses independent t-test formula. In calculating t-test, the formula as follow :

$$t = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{S_{x_1 - x_2}}$$

Where :

t is t value

x_1 is average group 1

x_2 is average group 2

$\mu_{1-} \mu_2$ is always defaults to 0

Where :

$$S_{X_1 - X_2} = \sqrt{\frac{S^2 \ pooled}{n_1} + \frac{S^2 \ pooled}{n_2}}$$

$S_{X_1 - X_2}$: is standard error of two group

$S^2 pooled$: is variants of the two groups

n_1 : is number of sample group 1

n_2 : is number of sample group 2

Pooled variance: the average of the two sample variances, allowing the larger sample to weight more heavily.

Formula:

$$S^2 pooled = \frac{(df_1)s^2 1 + (df_2)s^2 2}{df_1 + df_2} \quad \text{or} \quad S^2 pooled = \frac{SS_1 + SS_2}{df_1 + df_2}$$

$df_1 = df$ for 1th sample; $n_1 + 1$
$df_2 = df$ for 2th sample; $n_2 + 1$

Estimated standard error of the difference:

$$S_{x1-x2} = \sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

Clearly, the results of the tests were subjected to the following statistical procedures. To calculate t-test, the researcher used SPSS (Statistical product and service solutions) version 16.00. According to Zawawi (2012), the post test of experimental and control groups are as follow ; first, input the data of post-test in SPSS program between experimental and control group, then click Analyze → Independent Sample T-Test, after that in Independent Sample T-Test, input the score variable into Test Variable, and for group variable into Grouping Variable, then klik Devine Group, Choose group 1 (for experimental) and group 2 (for control), then click OK.