## CHAPTER III

## RESEARCH METHODOLOGY

## A. Research Design

The type of this research was an experimental research. According to Gay (2002, p. 250), experimental research is the only type of the research that can test hypothesis to establish cause-and-effect relationship. Then, Cresswell (2012, p. 295), states that experiment is you test an idea to determine whether it influences the outcome or the dependent variable. The essential feature of experimental research is that investigators deliberate control and manipulate the conditions which determine the events, in which they are interested, introduce an intervention and measure the difference that it makes. So, in this research the researcher practiced the KWL strategy at the Eight grade Students of Junior high School Bagan Sinembah to determine whether it influences the students' ability in reading comprehension. The researcher chose quasi experimental design because of the population of this research was large. There were 2 variables in this research,variable X and variabel Y. Variable X was KWL strategy and variable Y was students' reading comprehension.

This research used an experimental and a control class. Therefore, the experimental class was provided with pre-test, treatment, and post-test. The design can be seen in the following table Creswell (2012, p. 310):

## Table III. 1

## Table Of Research Design

| Group | Pre-test | Treatment |  |
| :--- | :--- | :--- | :--- |
| Experimental | O1 | X | O2 |
| Control | O3 | - | O4 |

Note:
O1 : Pre-test for experimental group
O3 :Pre-test for control group
X : Treatment by using KWL strategy

- : Treatment without using KWL strategy

O2 : Post-test for experimental group
O4 : Post-test for control group

## B. Location and Time of The Research

This research was conducted at the Eight Grade students of Junior High School 2 Bagan Sinembah. It was conducted from February to March 2017.

## C. Subject and Object of The Reasearch

The subject of the research was the Eight grade students of SMPN 2 Bagan Sinembah. The object of the research was the students' Reading comprehension.

## D. Population and Sample of The Research

The population of this research was the students of the eight grade at State junior High School 2 Bagan Sinembah . It had 6 classes consisting of VIII.1,VIII.2, VIII.3, VIII.4, VIII.5, VIII.6. The total number of the students in class VIII. 1 was 30, the total number of the students in class VIII. 2 was 32, the total number of the students in class VIII. 3 was 30, the total number of the students in class VIII. 4 was 30, the total number of the students in class VIII. 5 was 33 , and the total number of the students in class VIII. 6 was 35 . So, the total population of the eight grade students of State junior High School 2 Bagan Sinembah was 190 students.

To determine the sample of this research, the researcher used cluster random sampling technique in this research. Dealing with this, Gay and Airasian (2012, p. 135), say that cluster sampling is randomly selects groups, not individuals. All the members of selected group have similar characteristics. The population above was big enough to be taken all as a sample of the research. So the researcher took two classes from six classes as the sample of this research. The sample classes were VIII 1 and VIII 4. Class VIII 1 was Experimental class and VIII 4 was control class. So the total number of this research was 60 students.

## E. The Technique of Collecting Data

In this research, the researcher used test to collect the data.In order to get the data, which are needed to support this research, the researcher used multiple choice test and got the test materials from several books for junior high school. In collecting the data the researcher used multiple choice
questions as an instrument for pre-test and post-test. The students were asked to answer the questions based on the reading texts. It was designed to find out students' Reading comprehension. The test consisted of 25 items. The researcher constructed or adopted the test from the book and sources related.

Table III. 2

## Blueprint of Reading Comprehension

| No. | Indicator | Number |
| :---: | :--- | :---: |
| $\mathbf{1 .}$ | Students are able to identify factual information <br> from recount text. | $\mathbf{1 , 6 , 1 1 , 1 6 , 2 1}$ |
| $\mathbf{2 .}$ | Students are able to identify the topic in recount text. | $\mathbf{2 , 7 , 1 2 , 1 7 , 2 2}$ |
| $\mathbf{3 .}$ | Students are able to identify the generic structure in <br> Recount text. | $\mathbf{3 , 8 , 1 3 , 1 8 , 2 3}$, |
| $\mathbf{4 .}$ | Students are able to finding the meaning of <br> vocabulary in Recount text. | $\mathbf{4 , 9 , 1 4 , 1 9 , 2 4}$ |
| $\mathbf{5 .}$ | Students are able to identify reference in Recount <br> text. | $\mathbf{5 , 1 0 , 1 5 , 2 0 , 2 5}$ |

After the students did the test, the researcher then took total score from the result of reading comprehension test. According to Arikunto (2009, p. 245), there are some classifications of the students' score that can be seen as follows:

## Table III. 3 The Classification of Students' Score

| Score | Category |
| :---: | :---: |
| $80-100$ | Very Good |
| $66-79$ | Good |
| $56-65$ | Enough |
| $40-55$ | Less |
| $30-39$ | Fail |

## F. The Procedures of The Research

In this research, the researcher carried out some research procedures for two groups; experimental and control group. The research procedures are as follows :

## 1. Conducting Pre-Test

The pre-test was carried out to know the primary knowledge of students' reading comprehension of both experimental and control group. The test consisted of one text related to the indicators of reading Comprehension.

## 2. Conducting Treatment

The treatment was conducted for the experimental group only. The treatment was given based on the KWL reading strategy procedures. The treatment given is as follows :
a. Teacher chooses text, such as recount text. Teacher gives text material to the students (personal copy) then teacher asks the students to read the title of the text and tell them about the text.
b. Teacher gives chart to the students, it consists of $\mathrm{K}, \mathrm{W}$, and L column and asks the students to make a list in the chart.
c. Teacher Prepares questions in advance to help students brainstorm their ideas and after that teacher asks the students to make list everything they think they know about recount text.
d. Teacher asks the students to predict what additional information they are likely to need (want to know) .Teacher asks the students to tell what they want to know about recount text.
e. Teacher asks the students after finishing reading or studying a recount text, they list what they have learned. They can also check the W column to see which questions are answered and which are left unanswered.

## 3. Conducting Post-Test

After conducting the treatment for Eight meetings, the researcher gave the post-test to both experimental and control group. The posttest was conducted in order to know the development of Reading comprehension after practicing KWL reading strategy.

## G. Validity and Reliability of The test

## 1. Validity of the Test

According to Brown (2003, p. 22), validity is the most complex criterion of an effective test, and arguably the most important principle, the extent to which inferences made from assessment result are appropriate, meaningful, and useful in terms of the purpose of the assessment. It means that to assess students’ ability needs the validity.

Validity of a test is the extent to which it measures what it is supposed to measure and nothing else. In the other words, validity test is used to determine if the testcan be implemented or not. Based on the test
result collected from respondent, the writer tested the question to find out if the question is valid or not by using SPSS 21.

According to Hughes (1989, p. 22), a test is said to be valid it if measures accurately what it is intended to measure. Gay (2000, p. 161) stated that the validity is the appropriateness of the interpretations made from the test score. There are three kinds of validity that consist of content validity, construct validity, and criterion validity.

Before the test given to the sample of this research, the writer did try out the test items. The test given to the students was considered not too difficult or not too easy. According to Arikunto (2008, p. 208), the test is accepted if the level of difficulty is between $0.30-0.70$. It was determined by finding the difficulty level of each item. The formula for item difficulty is as follows:

$$
\mathrm{P}=\frac{\mathrm{B}}{\mathrm{JS}}
$$

Where:
P: Index of difficulty
B: The number of correct answer
Js: The number of students
The difficulty level of an item shows how easy or difficult a particular item in a test. The items that do not reach the standard level of difficulty are excluding from the test and they are changed with new items that are appropriate. The standard level of difficulty used is $<0.30$ and $>0.70$. It means that an item is accepted if the level of difficulty is between
$0.30-0.70$, and it is rejected if the level of difficulty is less than 0.30 (the item is too difficult) and over than 0.70 (the item is too easy).

Table III. 4
The Students' ability to find out factual information in Recount text

| Variable | Identifying Factual information |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 6 | 11 | 16 | 21 |  |
| Correct | 12 | 17 | 15 | 16 | 14 | 30 |
| P | 0.40 | 0.57 | 0.50 | 0.53 | 0.47 |  |
| Q | 0,60 | 0.43 | 0.50 | 0.47 | 0.53 |  |

Based on the table III.5, item number 1 shows the proportion of correct 0.40 , item number 6 obtained the proportion of correct 0.57 , item number 11 obtained the proportion of correct 0.50 , item number 16 obtained the proportion of correct 0.53 , item number 21 obtained the proportion of correct 0.47 . Based on the standard level of difficulty "p" $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for finding factual information in recount text was accepted.

Table III. 5
The Students' ability to find out the topic in Recount text

| Variable | Identifying the topic |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| Item no | 2 | 7 | 12 | 17 | 22 |  |
| Correct | 18 | 18 | 14 | 17 | 17 | 30 |
| P | 0.50 | 0.60 | 0.47 | 0.57 | 0.57 |  |
| Q | 0.40 | 0.43 | 0.53 | 0.43 | 0.43 |  |

Based on the table III.6, item number 2 got the proportion of correct 0.50 , item number 7 got the proportion of correct 0.60 , item number 12 got
the proportion of correct 0.47 , item number 17 got the proportion of correct 0.57 , item number 22 got the proportion of correct 0.43 . Based on the standard level of difficulty " p " $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for finding topic in recount text was accepted.

Table III. 6
The Students' ability to find out generic structure in Recount text

| Variable | Identifying the generic structure |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Item no | 3 | 8 | 13 | 18 |  |
|  |  |  |  |  |  |  |
| Correct | 19 | 16 | 14 | 16 | 19 | 30 |
| P | 0.63 | 0.53 | 0.47 | 0.53 | 0.63 |  |
| Q | 0.37 | 0.47 | 0.53 | 0.47 | 0.37 |  |

Based on the table III.7, item number 3 gained the proportion of correct 0.63 , item number 8 gained the proportion of correct 0.53 , item number 13 gained the proportion of correct 0.47 , item number 18 gained the proportion of correct 0.53 , item number 23 gained the proportion of correct 0.63 .Based on the standard level of difficulty " p " $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for finding generic structure in recount text was accepted.

Table III. 7
The Students' ability to find out meaning of vocabulary in Recount text

| Variable | Identifying the meaning of vocabulary |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 4 | 9 | 14 | 19 | 24 |  |
| Correct | 18 | 16 | 15 | 17 | 15 | 30 |
| P | 0.60 | 0.53 | 0.50 | 0.57 | 0.50 |  |
| Q | 0.40 | 0.47 | 0.50 | 0.43 | 0.50 |  |

Based on the table III.8, item number 4 obtained the proportion of correct 0.60 , item number 9 obtained the proportion of correct 0.53 , item number 14 obtained the proportion of correct 0.50 , item number 19 obtained the proportion of correct 0.57 , item number 24 obtained the proportion of correct 0.50 . Based on the standard level of difficulty "p" $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for finding the meaning of vocabulary in recount text was accepted.

Table III. 8
The Students' ability to make reference in Recount text

| Variable | Identifying reference |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Item no | 5 | 10 | 15 | 20 |  |
|  |  |  |  |  |  |  |
| Correct | 17 | 20 | 17 | 16 | 18 | 30 |
| P | 0.57 | 0.67 | 0.57 | 0.53 | 0.60 |  |
| Q | 0.43 | 0.33 | 0.43 | 0.47 | 0.40 |  |

Based on the table III.9, the item number 5 gained the proportion of correct 0.57 , item number 10 gained the proportion of correct 0.67 , item number 15 gained the proportion of correct 0.57 , item number 20 gained the proportion of correct 0.53 , item number 25 gained the proportion of correct 0.60 . Based on the
standard level of difficulty " p " $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for finding reference of vocabulary in recount text was accepted.

Table III. 9

## Validity test

| Question no | Score | Result |
| :---: | :---: | :---: |
| 1 | 0.40 | Valid |
| 2 | 0.60 | Valid |
| 3 | 0.63 | Valid |
| 4 | 0.60 | Valid |
| 5 | 0.57 | Valid |
| 6 | 0.57 | Valid |
| 7 | 0.60 | Valid |
| 8 | 0.53 | Valid |
| 9 | 0.53 | Valid |
| 10 | 0.67 | Valid |
| 11 | 0.50 | Valid |
| 12 | 0.47 | Valid |
| 13 | 0.47 | Valid |
| 14 | 0.50 | Valid |
| 15 | 0.57 | Valid |
| 16 | 0.53 | Valid |
| 17 | 0.57 | Valid |
| 18 | 0.53 | Valid |
| 19 | 0.57 | Valid |
| 20 | 0.53 | Valid |
| 21 | 0.47 | Valid |
| 22 | 0.57 | Valid |
| 23 | 0.63 | Valid |
| 24 | 0.50 | Valid |
| 25 | 0.60 | Valid |

## 2. Reliability

According to Brown (2003, p. 19), reliability has to do with accuracy of measurement. This kind of accuracy is reflected in obtaining similar results when measurement is repeated on different occasions or with different instruments or by different persons. The characteristic of reliability is sometimes termed consistency. It means that we can say the test is reliable when an examinee's results are consistent on repeated measurement. To obtain the reliability of the test, it must be known the mean and standard deviation of test.

The reliability is a criterion that can judge the quality of the test. Reliability is a necessary characteristic of any good test. Heaton (1988. p, 159) explains that reliability is primary importance in the use of both public achievement and proficiency test and classroom test. There are some factors affecting the reliability of a test, they are:
a. The extent of the sample of material selected for testing.
b. The administration of the test, clearly this is an important factor in deciding reliability.

Then, Heaton (1988, p. 20) stated that the reliability for good classroom achievement tests are expected to exceed 0.0 and closed 1.00 . He stated that reliability of test is considered as follows:

1) 0.00-0.20 : Reliability
2) 0.21-0.40 : Reliability is sufficient
3) $0.41-0.70 \quad$ : Reliability is high
4) 0.71-1.00 : Reliability is very high

To obtain the reliability of the test given, the writer used SPSS 21 to find out whether the test is reliable or not.

Table III. 10 Realibilty Test
Case Processing Summary

|  |  | N |  |
| :--- | :--- | ---: | ---: |
| Valid | 30 | 100.0 |  |
|  | Excluded $^{\mathrm{a}}$ | 0 | .0 |
|  | Total | 30 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

| Cronbach's <br> Alpha | N of Items |
| ---: | ---: |
| .522 | 2 |

The reliability of test was 0.522 It was categorized into high reliability level.

## 3. Normality and Homogeneity of the test

Assessing normality of data is used to describe a symmetrical, bell shaped curve, which has the greatest frequency of score in the middle with smaller frequency towards the extremes. In this research, the writer assesed the normality of data by using kolmogorov-smirnov test from SPSS 21 version. The kolmogorov-smirnov Z test is typically used to assess univariate normality Abell, (2009, p. 121). The result of the test can be seen as follows:

Table III. 11
Tests of Normality

|  | Kolmogorov-Smirnov ${ }^{\text {a }}$ |  |  | Shapiro-Wilk |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Statist ic | Df | Sig. | Statistic | Df | Sig. |
| expeimental | . 141 | 30 | . 133 | . 923 | 30 | . 033 |
| Control | . 150 | 30 | . 082 | . 945 | 30 | . 124 |

a. Lilliefors Significance Correction

Referring to the table above, the probability (sig) was 0.133 . It was higher than 0.05 or $(0.133>0.05)$. Finally, it can be concluded that $H_{o}$ was rejected and $\mathrm{H}_{\mathrm{a}}$ was accepted. In the other words, the data were normally distributed.

Then, the homogeneity of the test also can be seen in the table below:
Table III. 12
Test of Homogeneity of Variances

| $\begin{array}{l}\text { Levene } \\ \text { Statistic }\end{array}$ | df1 | df2 | Sig. |
| ---: | ---: | ---: | ---: |
| 2.599 |  | 5 | 20 |$) .057$.

To find out the homogeneity of the test, the writer used SPSS 21. Referring to the table above, it was found that sig. in based on trimmed mean was $0.057>0.05(5 \%)$. In conclusion, the data of test were homogenous.

## H. Technique of Data Analysis

In order to find out whether there is significant effect of using KWL strategy on students' reading comprehension of recount text. The data of the research were be analyzed statistically. To analyze the data, the researcher used score of post-test of experimental and control groups. These scores were analyzed by using T-test (independent sample t-test) formula by using SPSS. 21 version and

1 using eta-Square formula if the hypothesis is Ha.The result of $t$-test analysing can be seen on the SPSS output.

The formula of eta squared is as follows:

$$
\eta^{2}=\frac{t^{2}}{t^{2}+\left(n_{1}+n_{2}-2\right)}
$$

Where:
$\eta^{2}$ : Eta square
$t: t$ obtained
$n_{1}$ : The number of experimental class
$n_{2}$ : The number of control class

In order to interprete the eta squared values, the guideline quoted from Cohen (1988) in Julie Pallant (2001, p. 184) can be read as follows:

Table III. 13
Interpretation of Eta Squared for Effect Size

| No. | Value | Effect |
| :---: | :---: | :---: |
| 1. | 0.01 | Small Effect |
| 2. | 0.06 | Moderate Effect |
| 3. | 0.14 | Large Effect |
| * Adapted from Cohen (1988) |  |  |

Statistically the hypotheses are:
$\mathrm{Ha}=$ to> t-table
Ho $=$ to $<\mathrm{t}$-table
Criteria for hypothesis:


#### Abstract

$\mathrm{H}_{\mathrm{a}}$ : is accepted if $\mathrm{t}_{\mathrm{o}}>$ Significant Value or the students' reading comprehension taught by using KWL Strategy is better than the students' reading comprehension taught without using KWL Strategy at the Eight Grade of SMPN 2 Bagan Sinembah. $\mathrm{H}_{\mathrm{o}}$ : is accepted if $\mathrm{t}_{\mathrm{o}}<$ : Significant Value or the students' reading comprehension taught by using KWL Strategy is worse than the students' reading comprehension taught without using KWL Strategy at the Eight Grade of SMPN 2 Bagan Sinembah.


