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CHAPTER III

METHODOLOGY OF THE RESEARCH

A. The Research Design

This research was an experimental research. Experimental research is divided into three group designs. Creswell (2012: 309) state that there are three kinds of experimental design; true, quasi, and pre-experimental research. Then, the kind of this research was quasi-experimental design. Creswell (2012, p.309) also states that quasi experimental design is in which the researcher assigns participants to groups but not randomly. This research involved two groups; they are an experimental group and a control group. There were two kinds of test; pre-test and post-test. Pre-test will be given before treatment and post-test was given after doing treatment.

In addition, there are two variables in this research, first is using K-W-L-M technique as the variable X and second is students' reading comprehension as the variable Y. The design can be seen in the following table (Creswell: 2012, p.310):

Table III.I
Table of Research Design

Group	Pre-Test	Treatment	Post-Test
Experimental	O1	T	O2
Group	O3	-	O4

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Where:

O1= Pre-test of experimental group

O2= Pre-test of control group

O3= Post-test of experimental group

O4= Post-Test of control group

T = Treatment

B. The Location and Time of the Research

This research was conducted at State Junior High School 5 Kampar Kiri Hilir starting from 26 April -17 May 2017.

C. The Subject and Object of the Research

The subject of the research was the eighth grade students at State Junior High School 5 Kampar Kiri Hilir and the object of this research was using K-W-L-M Technique on students' reading comprehension of narrative text.

D. The Population and Sample of the Research

The population of the research was the eighth grade students. It has two classes. The number of the population was 42 students. The specification of the population can be seen in the table below:

Table III.2
The Total Population of Eighth Grade
Students at State Junior High School 5 Kampar Kiri Hilir

No	Classes	Population
1	VIII-1	20
2	VIII-2	22
	Total	42

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Because the number of population is relatively small, the researcher took the total number of the classes; it means that 42 students were as a sample. As Arikunto (2006: 134) points out that “if the population is less than 100 respondents, we can take all as sample”.

E. The Techniques of Collecting Data

To find out the data in this research, the researcher used test as instrument. The test was distributed to measure the students’ reading comprehension of narrative text. Then, there were two tests that the researcher gave to the students, as follows:

1. Pre-Test

According to Creswell (2012, p.297), pre-test provides a measure on some attribute or characteristic that you assess for participants in an experiment before they receive a treatment. Pre-test was used to collect the data about reading comprehension of the students before giving treatment to the experimental class.

2. Post-Test

A post-test is a measure on some attribute or characteristic that is assessed for participant in an experiment after the treatment.

The kind of test that the researcher used was multiple choices. The researcher used twenty (20) items to collect the data. Every multiple choice consist of four answer options (a, b, c and d). The questions were based on indicators of reading narrative text comprehension. The

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indicators consisted of five indicators and each had four questions. It can be seen from the blue print of test below:

Table III.3
Blue Print of Reading Comprehension Test

No	Indicator	Number of items
1.	The students are able to identify the main idea of narrative text.	1, 6, 11, 16
2.	The students are able to identify the generic structure of the narrative text.	2, 7, 12, 17
3.	The students are able to get antonym/synonym of the word.	3, 8, 13, 18
4.	The students are able to identify word reference from reading narrative text.	4, 9, 14, 19
5.	The students are able to analyze the moral value in narrative text.	5, 10, 15, 20
Total		20

Then, the researcher took the total score from the result of the reading comprehension test. In State Junior High School 5 Kampar Kiri Hilir, passing score standard for English subject is 75. Arikunto (2009, p.245) explained the classification of the students' score is shown below:

Table III.4
The Classification of Students' Score

Score	Categories
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

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F. Validity and Reliability of the Test

1. Validity

Brown (2003, p.3) states that a test is a method to measure a person's ability, knowledge, or performance in a given domain. The more explanation was also explained by Brown that one of criteria for testing a test is validity. According to Hughes (2003, p.26), a test is said to be valid if it measures accurately what it is intended to measure. While Gay and Airasian (2012, p.160) stated that validity concerned with the appropriateness of the interpretations made from tests score. In other words, validity is the core of the test and a valid test should be appropriate, meaningful, and useful in term of the purpose of the assessment.

According to Gay and Airasian (2012, p.160), there are three kinds of validity that consist of content validity, criterion validity, and construct validity. In this research, the researcher used content validity to prove the validity of the test. In order to get the data for this research, researcher used test for both variables. But, before the researcher gave the test; the researcher gave try out test to the students in order to measure item difficulties. According to Arikunto (2013, p.223), 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:

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$$P = \frac{B}{Js}$$

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 is <0.30 and >0.70 . It means that the item test that is accepted if the level of difficulty is between $0.30-0.70$ and it is rejected if the level of difficulty is under 0.30 , assumed difficult question and over 0.70 , assumed as easy question. Then, the proportion correct is represented by “P”, whereas the proportion incorrect is represented by “Q”, it can be seen in the following tables:

TABLE III.5
The Students' Ability to Identify the Main Idea

Variable	Identifying the Main Idea				N
Item no.	1	6	11	16	23
Correct	13	12	13	10	
P	0.57	0.52	0.57	0.43	
Q	0.43	0.48	0.43	0.57	

Based on the table III.5, the proportion of correct answer for item number 1 shows 0.57, item number 6 shows 0.52, item number 11 shows

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0.57 and item number 16 shows 0.43. Based on the standard level of difficulty “p” <0.30 and >0.70 , it is pointed out that item difficulties in average of each item number for identifying the main idea are accepted.

TABLE III.6
The Students’ Ability to Identify the Generic Structure

Variable	Identifying the Generic Structure				N
Item no.	2	7	12	17	23
Correct	11	13	9	12	
P	0.48	0.57	0.39	0.52	
Q	0.52	0.43	0.61	0.48	

Based on the table III.6, the proportion of correct answer for item number 2 shows 0.48, item number 7 shows 0.57, item number 12 shows 0.39, and item number 17 show 0.52. Based on the standard level of difficulty “p” <0.30 and >0.70 , it is pointed out that item difficulties in average of each item number for identifying the generic structure are accepted.

TABLE III.7
The Students ‘Ability to Find Out the Antonym/Synonym of word

Variable	Finding the Antonym/Synonym of word				N
Item no.	3	8	13	18	23
Correct	12	11	13	10	
P	0.52	0.48	0.57	0.43	
Q	0.48	0.52	0.43	0.57	

Based on the table III.7, the proportion of correct answer for item number 3 shows 0.52, item number 8 shows 0.48, item number 13 shows 0.57, and item number 18 show 0.43. Based on the standard level of difficulty “p” <0.30 and >0.70 , it is pointed out that item difficulties in

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average of each item number for finding the antonym/synonym of word are accepted.

TABLE III.8
The Students' Ability to Find Word Reference

Variable	Find out the word reference				N
Item no.	4	9	14	19	23
Correct	11	10	12	11	
P	0.48	0.43	0.52	0.48	
Q	0.52	0.57	0.48	0.52	

Based on the table III.8, the proportion of correct answer for item number 4 shows 0.48, item number 9 shows 0.43, item number 14 shows 0.52, and item number 19 show 0.48. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average of each item number for finding out the word references are accepted.

TABLE III.9
The Students' Ability to Analyze the Moral Value of the Text

Variable	Analyzing the Moral Value				N
Item no.	5	10	15	20	23
Correct	12	10	13	11	
P	0.52	0.43	0.60	0.48	
Q	0.48	0.57	0.40	0.52	

Based on the table III.9, the proportion of correct answer for item number 5 shows 0.52, item number 10 shows 0.43, item number 15 shows 0.60, and item number 20 show 0.48. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average of each item number for analyzing the moral value are accepted.

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2. Reliability

According to Brown (2003, p.20), reliability has to do with accuracy of measurements. This kind of accuracy is reflected in the obtaining of similar result when measurement is repeated on different occasions or with different instruments or by different person. While Gay and Airasian (2012, p.165) noted that reliability is the degree to which a test consistently measures whatever it is measuring. It means that the test is reliable when an examinee's results are consistent on repeated measurement and the key of qualification criterion of test instrument is consistent.

To obtain the reliability of the test, it must be known the total variance and the mean score of the test. According to Siregar (2013, p.111), to obtain the reliability of the test given, the researcher used the SPSS (Statistical Product and Service Solutions) 20 version program. It is presented in the following table:

Table III.10
Reliability Statistics

Cronbach's Alpha	N of Items
.629	2

According to Heaton (1995, p.162), the reliability of the test was considered as follows:

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Table III.11
The Classification of Realibity

No	Value	Category
1	0.0 – 0.20	reliability is low
2	0.21 – 0.40	reliability is sufficient
3	0.41 – 0.70	reliability is high
4	0.71 – 1.0	reliability is very high

In sum, the reliability of the test as calculated above (0.63) was categorized into high level.

5. The Normality and Homogeneity of Test

Before doing T-test analysis, the researcher analyzed and tested hypothesis pre-requisite test as the first analysis which contained normality test and homogeneity test to make sure if experimental class and control class were normal and homogeneous.

1. The Normality of the Test

In order to know whether the data have normal distribution or not, the researcher used Shapiro-Wilk to know whether the data are normal or not. In this research, the researcher analyzed the data by using SPSS (Statistical Product and Service Solutions) 20 version program. The SPSS result for Shapiro-Wilk test would be interpreted as follows:

$p\text{-value (Sig.)} > 0.05$ = the data are in normal distribution

$p\text{-value (Sig.)} < 0.05$ = the data are not in normal distribution

The results of normality of post test score in experimental and control class was computed by using SPSS version 20. It was presented in the following table:

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TABLE III.12
Tests of Normality

	Group	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Score	Experiment	.273	20	.000	.911	20	.066
	Control	.202	22	.020	.916	22	.064

a. Lilliefors Significance Correction

Based on the table above it showed that the significance level in Shapiro-Wilk test of experimental class was 0.066; it means that $0.066 > 0.05$, and significance level of control class was 0.64; it means that $0.064 > 0.05$. In conclusion, the data are in normal distribution.

2. The Homogeneity of The Test

According to Siregar (2013), the purpose of homogeneity test is to find out whether the object of the research has the same variance or not. The writer assessed the homogeneity of data by using SPSS 20. The result of the test can be seen as follows:

p -value (Sig.) > 0.05 = the data are homogeneous

p -value (Sig.) < 0.05 = the data are not homogeneous

The result of homogeneity test which was computed by using SPSS version 20 is presented in the following table:

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Table III.13
Test of Homogeneity of Variances

Reading Comprehension

Levene Statistic	df1	df2	Sig.
.225	1	40	.638

In line with to Siregar's statement (2013, p.178), data are homogenous or variant when the value Sig. is higher than 0.05. From the table, it was known that the value of significance (sig.) was 0.638. It can be seen $0.638 > 0.05$. Based on the table, it was clear that Sig. is higher than 0.05 which indicates the homogeneity of the data. It means that the data were homogeneous.

H. The Techniques of Data Analysis

In order to find out whether there is or no significant difference between using and without using K-W-L-M technique on students' reading comprehension at the eighth grade of State Junior High School 5 Kampar Kiri Hilir, the data were analyzed statistically. In analyzing the data, the researcher used post-test scores of the experimental and control classes. Those scores were analyzed by using statistical analysis. In this research, the researcher used T-tests formula (independent sample t-test) and it was calculated by using software SPSS 20 Version.

The independent samples t-test is probably the single most widely used test in statistics. Pallant (2010, p.239) stated that independent samples t-test is used to compare the mean score of two different groups of people or conditions. It means that it is used to determine whether or not there is

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significant difference at selected groups. T-test is obtained by considering the degree of freedom.

$$(df) = (N_1 + N_2) - 2.$$

Therefore, in calculating the effect size for independent sample t-test, the researcher used the following formula:

Eta Square (η^2)

$$\eta^2 = \frac{t^2}{t^2 + (n_1 + n_2 - 2)}$$

Where:

t = the value will be found

N = number of students

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

Table III.14
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:

$$H_0 = t_o < t_{\text{table}}$$

$$H_a = t_o > t_{\text{table}}$$

H_0 is accepted if $t_o < t_{\text{table}}$ or there is no significant difference between using and without using K-W-L-M Technique on students' reading

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comprehension of narrative text at the eighth of State Junior High School 5 Kampar Kiri Hilir.

H_a is accepted if $t_o > t_{table}$ or there is a significant difference of using and without using K-W-L-M Technique on students' reading comprehension of narrative text at the eighth of State Junior High School 5 Kampar Kiri Hilir.

H_o is accepted if $t_o < t_{table}$ or there is no significant effect using K-W-L-M Technique on students' reading comprehension of narrative text at the eighth of State Junior High School 5 Kampar Kiri Hilir.

H_a is accepted if $t_o > t_{table}$ or there is a significant effect of using K-W-L-M Technique on students' reading comprehension of narrative text at the eighth of State Junior High School 5 Kampar Kiri Hilir.