

CHAPTER III

METHODOLOGY OF RESEARCH

A. Research Design

The type of this research is an experimental research. Gay states that experimental research is the type of research that can test hypothesis to establish cause and effects relationship.¹In this research the writer used quasi experimental design. Cresswell states that quasi-experiment was experimental situation in which the researcher assigns participants to groups, but not randomly.²

The type of quasi-experiment design of this research was the non-equivalent control group design. In the non-equivalent control group design, the experimental and control classes were given pre-test and post-test. Creswell states that a pretest provides a measure on some attribute or characteristics that will be assessed for participants in an experiment before they receive a treatment.³ Meanwhile, a posttest is a measure on some attribute or characteristics that will be assessed for participant in an experiment after a treatment. And only the experimental class was treated by using Chapter Tours strategy. The non-equivalent control group design can be shown below:⁴

¹L. R Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application*, sixth edition, (New Jersey: Prentice Hall Inc, 2000), p. 367

²Jhon W cresswell, *Educational Research Planning, Conducting and Evaluating Quantitative and Qualitative Research*, Third Edition. New Jersey: Pearson Education Ltd. 2008. P. 313

³Ibid. p. 301

⁴Donald, T. Campbell and Julian C, Stanley, *Experimental and Quasi-Experimental Design for Research*, USA: Houghton Mifflin Company, 1963, p. 47

Nonequivalent Control Group Design

$$\begin{array}{ccccc} O_1 & & X & & O_2 \\ O_3 & & - & & O_4 \end{array}$$

There was two variables in this research. The first was independent variable and the second was dependent variable. The use of Chapter Tours strategy was the independent variable symbolized “X” and the students’ reading comprehension was the dependent variable symbolized “Y”. In this research, the writer used two groups that were control group treated by using conventional strategy and experimental group treated by using Chapter Tours strategy.

B. The Time and the Location of the Research

The research was conducted at the eleventh grade students of MAN Lipatkain Kampar Kiri, this research was conducted from January to February 2014.

C. The Subject and the Object of the Research

Based on the title of the research, the subject of the research was the eleventh grade students of MAN Lipatkain Kampar Kiri. Then the object of the research was the effect of using Chapter Tours Strategy on Reading Comprehension of the eleventh grade students at MAN Lipatkain Kampar Kiri

D. The Population and the Sample of the Research

1. Population

The population of the research was the eleventh grade students at MAN Lipatkain Kampar Kiri. They consisted of four classes. The total number of the students was 88. the writer used the cluster sampling. Gay states that cluster sampling is a way to select a sample by grouping or not individuals.⁵ The number of population can be seen in the following table:

Table III. 1
Population of The Research

No	Class	Population
1	XI IPA ¹	20
2	XI IPA ²	25
3	XI IPA ³	25
4	XI IPS	18
Total		88

2. Sample

The writer took two classes for the sample taken by using cluster sampling. The total sample was 50 students that consisted of XI IPA² and XI IPA³. The number of sample can be seen in the following table:

⁵L.R Gay and Peter Airasian, *Op Cit.* p. 129

Table III. 2
Sample of the Research

No	Class	Sample
1	XI IPA ²	25
2	XI IPA ³	25
Total sample		50

E. The Technique of Collecting Data

To find out the effect of using Chapter Tours strategy on reading comprehension, the writer used Test technique. The writer used a test as an instrument to collect data. The test was divided into two ways:

1. Pre-test was used to determine students' reading comprehension before getting treatment.
2. Post-test was used to determine students' reading comprehension after getting the treatment. Post-test was carried out once, after treatment, to get the maximum result.

According to Hughes, there are many techniques that can assess the students' reading comprehension; one of them is multiple choice techniques.⁶ Then, the writer used multiple choice techniques consisting of 20 items. Multiple choice techniques was a technique designed by using four choices and the participants chose one correct answer. This technique could assess the students' reading comprehension.

⁶ Arthur Hughes, *Testing for Language Teacher*: 2nd Edition, Cambridge: Cambridge University, 2003, p 143

After the students did the test. The writer then took the total score from the result of the reading comprehension test. The classification of the students' score can be seen below.⁷

Table III. 3
Classification of Students' Score

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

F. The Item Difficulties, Validity, and Reliability

1. The Item Difficulties

Before getting the data, the writer used all of items in try out. The test was tried out to 20 students of the second grade at the other class out of the samples. Try out was intended to know the value of the test. The value itself was used to find out the level of difficulties of each item. The standard of value used was 0.30 and 0.70.⁸ The items that could not fulfill the standard value were replaced. The facility value under 0.30 is considered "difficult" and above 0.70 is considered "easy". The level of difficulty was used to show how "easy" or "difficult" an item was. It was calculated by using the formula:⁹

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

⁷Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan*, (Jakarta: Bumi Aksara, 2009). P.

⁸Suharsimi Arikunto, *Ibid.* p. 208

⁹*Ibid* , p.208

Were:

P = Difficulty level

B = The number of correct answer

JS = Students taking test

Then, the proportion correct was represented by “p”, whereas the proportion incorrect was represented by “q”.

Table III. 4
The students are able to identify the topic

Variable	Identify the topic				N
Item No.	1	6	11	16	20
Correct	14	14	14	13	
P	0.70	0.70	0.70	0.65	
Q	0.30	0.30	0.30	0.35	

Based on the table above, the proportion of correct answer for item number 1 is 0.70, item number 6 is 0.70. item number 11 is 0.70, and item number 16 is 0.65. Based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying topic were accepted.

Table III. 5
The students are able to identify main idea

Variable	Identify the main idea				N
Item No.	2	9	12	20	20
Correct	12	12	12	12	
P	0.60	0.60	0.60	0.60	
Q	0.40	0.40	0.40	0.40	

Based on the table above, The proportion of correct answer for item number 2 is 0.60, item number 9 is 0.60, item number 12 is 0.60, item number 20 is 0.60. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying main idea were accepted.

Table III. 6
The students are able to identify the generic structure

Variable	Identify the generic structure			N
Item No.	3	10	15	20
Correct	13	12	13	
P	0.65	0.60	0.65	
Q	0.35	0.40	0.35	

Based on the table above, the proportion of correct answer for item number 3 is 0.65, item number 10 is 0.60, and item number is 0.65. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying generic structure in reading text were accepted.

Table III. 7
The students are able to identify the language feature

Variable	Identifying the language feature				N
Item No.	4	7	14	17	20
Correct	14	14	12	12	
P	0.70	0.70	0.60	0.60	
Q	0.30	0.30	0.40	0.40	

Based on the table above, The proportion of correct answer for item number 4 is 0.70, item number 7 is 0.70, item number 14 is 0.60, and

item number 17 is 0.60. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying language feature were accepted.

Table III. 8
The students are able to identify the purpose of the text

Variable	Identify the purpose					N
Item No.	5	8	13	18	19	20
Correct	11	13	14	14	11	
P	0.55	0.65	0.70	0.70	0.55	
Q	0.45	0.35	0.30	0.30	0.45	

Based on the table above, The proportion of correct answer for item number 5 is 0.55, item number 8 is 0.65, item number 13 is 0.70, item number 18 is 0.70, and item number 19 is 0.55. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying purpose of the text were accepted.

2. Validity

Every test, whether it is a short, informal classroom test, or a public examination should be as valid as the test constructor that can make it. The instrument of the test must aim at providing a true measure. Grounlund in Brown states that validity is the extent to which inferences made from assessments result are appropriate, meaningful and useful in terms of the purpose of the assessment.¹⁰

¹⁰H. Douglas brown, *Op cit*, p. 22

The purpose of try out was to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item. To find validity of the test, researcher used correlation product moment as follows:¹¹

$$r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where:

r_{xy} : Correlation product moment x and y

$\sum xy$: Total x and y

x^2 : X quadrant

y^2 : Y quadrant

$$r_{xy} = \frac{1449}{\sqrt{1820 \cdot 1945}}$$

$$r_{xy} = \frac{1449}{\sqrt{3539900}}$$

$$r_{xy} = \frac{1449}{1881.4} = 0.77$$

According to Arikunto the ranges of validity and reliability are:¹²

Table III. 9
The Standard of Validity and Reliability of the Test

NO	The standard of Validity (r_{xy})	Score
1	Excellent	0.800-1.00
2	Good	0.600-0.800
3	Fair	0.400-0.600
4	Poor	0.200-0.400
5	Very Poor	0.00-0.200

¹¹SuharsimiArikunto, *Prosedure Penelitian*, (Jakarta: RinekaCipta). 2010, p. 213

¹²Suharsimi Arikunto. *Ibid.* p.319

Thus, from the calculation above (0.77), the validity is considered as **good**.

3. Reliability

Arikunto stated that it is possible the test can be reliable but it is not valid, whereas the test is valid automatically, it is reliable. To obtain the reliability of the test given, the writer used Spearman-Brown formula as follows:¹³

$$r_{11} = \frac{2r_{1/2 \ 1/2}}{1+r_{1/2 \ 1/2}}$$

Where :

r_{11} : Instrument of reliability

$r_{1/2 \ 1/2}$: r_{xy} that mean as correlation of index

$$r_{11} = \frac{2 \times 0.77}{1+0.77}$$

$$r_{11} = \frac{1.54}{1.77}$$

$$r_{11} = 0.87$$

In conclusion, the validity of the test was categorized into **excellent**.

G. The Techniques of Data Analysis

In analyzing the data, the writer used the statistical calculation of independent sample T-test formula. The independent sample T-test was used to find out the significant effect of using Chapter Tours strategy on reading comprehension of the eleventh grade students at MAN Lipatkain Kampar Kiri. The data were analyzed by using SPSS 16.0 Version.

¹³Suharsimi Arikunto, *Ibid.* p. 223

The function of T-table is to find out whether there is a significant effect between the mean score of both experiment and control group.

statically hypothesis:

$$H_a = t_o > t\text{-table}$$

$$H_o = t_o < t\text{-table}$$

Criteria of hypothesis:

H_a is accepted if $t_o > t\text{-table}$ or there is effect of using Chapter Tours strategy toward students' reading comprehension.

H_o is accepted if $t_o < t\text{-table}$ or there is no effect of using Chapter Tours strategy toward students' reading comprehension.