

CHAPTER III

METHODOLOGY OF RESEARCH

A. The Research Design

The type of this research is experimental research. According to Creswell, experiment is test an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable¹. The design of this research is quasi experimental research. Gay and Airasian stated that quasi experimental design is used when the researcher keeps the students in existing classroom intact and the entire classrooms are assigned to treatment².

The type of quasi-experimental design of this research is the non-equivalent control group design because used two variables and consisted of two groups as samples. One group was control group and the other group was experimental group. The materials taught to the both of the group were same. There were two kinds of test given in this research, divided into pre-test and post-test. Pre-test was given before the treatment, and post-test was given after treatment.

According to Sukardi, the design of this research is illustrated as follows³:

¹Jhon, W. Creswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Education. 2008), p. 299.

²L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application* (6th Edition), New Jersey: Prentice.Hall, Inc. 2000, p. 398

³ Sukardi. *Metodologi Penelitian Pendidikan. Kompetensi dan Praktiknya*. (Jakarta: Bumi Aksara. 2010). p.186

Table III.1
The Research Design

Class	Pre-test	Treatment	Post-test
Experiment group	T ₀	X	T ₁
Control group	T ₀	-	T ₁

B. Time and Location of the Research

The research was conducted at SMAN 001 Kampar Utara located on Pematang kulim street KM 13, Muara Jalay, Kampar Regency. This research was conducted from August to September 2013.

C. Subject and Object of the Research

The subject of this research was the second year students of State Senior High School 001 Kampar Utara. The object of this research was the use of Thick and Thin Questions Strategy and students' reading comprehension.

D. The Population and Sample of the Research

The population of this research was the second year scientific students of SMA N 001 Kampar Utara in academic 2012/2013. They were in two classes. The population of the students is shown in table below:

Table III.2
Population of the Research

NO	Class	Total students
1	XI Science 1	27 students
2	XI Science 2	27 students
	Total	54 students

Because the number of population was small, the writer took the total number in population as sample. The technique used in taking the sample was by total sampling.

E. The Technique of Collecting Data

In this research, the writer used test as instrument to collect data. Test used to collect the data about the students' reading comprehension. The test done twice as follows:

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.

The writer used multiple choice technique consisting of 20 items. Multiple choice technique was designed by using four choice and the participant chose one correct answer. Then the writer took the total score from the result of reading comprehension test. The classification of the students' score can be seen below:

Table III.3
The Classification of Student's Score

The Score Level	Categories
80 – 100	Very good
66 – 79	Good
56 – 65	Enough
46 – 55	Less
0 – 45	Fail

F. The Technique of Data Analysis.

In analyzing the data, the writer used scores of pre-test and post test of the experiment and control class. The writer used the statistical calculation of t-test by using SPSS 17 version. Independent t-test is used in order to find out whether there is a significant effect of using Thick and Thin Questions Strategy toward reading comprehension.

The t-table was employed to see whether or not there was a significant difference between the mean score of both experiment and control groups. The t-obtain value is consulted with the value of t-table at degree of freedom $(df) = (N1+N2) - 2$

G. The item Difficulties, Validity and Reliability

1. The Item Difficulties

Before getting the data, the researcher used all of the items in try out. 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 0.70⁴.

The items that could not fulfil 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 and difficult an item was. It was calculated by using the formula:

⁴ Suharsimi Arikunto. *Dasar – Dasar Evaluasi Pendidikan*, (Jakarta: Bumi Aksara. 2009.) p.208

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

Where:

P = Difficulty level

B = The number of correct answer

JS = The number of students

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

Table III.4
The Students are able to Find the Main Idea

Variable	Find the Main Idea				N
Item No.	1	6	11	16	20
Correct	10	8	9	10	
P	0.45	0.36	0.40	0.45	
Q	0.54	0.63	0.59	0.54	

Based on the table above, the item numbers of question for finding main idea were 1, 6, 11, and 16. It shows that the proportion of correct answer of the test. The proportion of correct answer for test item number 1 is 0.45, the proportion of correct answer for test item number 6 is 0.36, the proportion of correct answer for test item number 11 is 0.40, and the proportion of correct answer for test item number 16 is 0.45. The average correct answer of finding out main idea is 0.45. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of find the main idea were accepted.

Table III.5
The Students are able to Find Factual Information

Variable	Find Factual Information				N
Item No.	2	7	12	17	20
Correct	12	12	8	15	
P	0.54	0.54	0.36	0.68	
Q	0.45	0.45	0.63	0.31	

Based on the table above, the item numbers of question for find factual information were 2, 7, 12, and 17. It shows the proportion of correct answer of the test. The proportion of correct answer for test item number 2 is 0.54, the proportion of correct answer for test item number 7 is 0.54, the proportion of correct answer for test item number 12 is 0.36, and the proportion of correct answer for test item number 17 is 0.68. The average correct answer of find factual information is 0.53. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of find factual information of the text were accepted.

Table III.6
The Students are able to Find the Meaning of Vocabulary

Variable	Find the Meaning of Vocabulary				N
Item No.	3	8	13	18	20
Correct	8	15	14	10	
P	0.36	0.68	0.63	0.45	
Q	0.63	0.31	0.36	0.54	

Based on the table above, the item numbers of question for finding the meaning of vocabulary were 3, 8, 13, and 18. It shows that the proportion of correct answer of the test. The proportion of correct

answer for test item number 3 is 0.36, the proportion of correct answer for test item number 8 is 0.68, the proportion of correct answer for test item number 13 is 0.63, and the proportion of correct answer for test item number 18 is 0.45. The average correct answer for finding the meaning of vocabulary is 0.53. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of find the meaning of vocabulary were accepted.

Table III.7
The Students are able to Identify Communicative Purpose

Variable	Identify Communicative Purpose				N
Item No.	4	9	14	19	20
Correct	12	13	13	13	
P	0.54	0.59	0.59	0.59	
Q	0.45	0.40	0.40	0.40	

Based on the table above, the item numbers of question for identify communicative purpose or narrative text were 4, 9, 14, and 19. It shows that the proportion of correct answer of the test. The proportion of correct answer for test item number 4 is 0.54, the proportion of correct answer for test item number 9 is 0.59, the proportion of correct answer for test item number 14 is 0.59 and the proportion of correct answer for test item number 19 is 0.59. The average correct answer of identify communicative pusrpose is 0.57. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identify communicative pusrpose were accepted.

Table III.8
The Students are able to Make Inference

Variable	Make Inference				N
Item No.	5	10	15	20	20
Correct	14	12	12	10	
P	0.63	0.54	0.54	0.45	
Q	0.36	0.45	0.45	0.54	

Based on the table, the item numbers of question for make inference are 5, 10, 15, and 20. It shows that the proportion of correct answer of the test. The proportion of correct answer for test item number 5 is 0.63, the proportion of correct answer for test item number 10 is 0.54, the proportion of correct answer for test item number 15 is 0.54, and the proportion of correct answer for test item number 20 is 0.45. The average correct answer of make inference is 0.54. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of make inference 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 of the participation skill in which it is intended to measure. The instrument of the test is valid if the instrument used can measure the thing that will be measured⁵.

⁵ P L.R., Gay, & Peter Airasian. *Op.Cit.*, p.23

The writer tested the test twice to measure the validity. 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, the writer used correlation product moment. The formula is as follows:

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

Where:

r_{xy} = Correlation product moment x dan y

$\sum xy$ = total x dan y

$\sum X^2$ = X quadrant

$\sum Y^2$ = Y quadrant

$$r_{xy} = \frac{895,45}{\sqrt{(2.336,36)(1.831,82)}}$$

$$r_{xy} = \frac{895,45}{2068,76}$$

$$r_{xy} = 0.432$$

According to Suharsimi Arikunto, the range of validity is⁶:

Table III.8
Classification of Validity

NO	Classification	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

⁶ Suharsimi Arikunto, *Op.cit* p. 245

Based on table above, it can be seen the result of the validity test is 0.432, so the validity is **fair**.

3. Reliability

Arikunto states that it is possible that the test is 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 Sperman Brown's formula as follows:⁷

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

Where:

r_{11} : Instrumen of reliability

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

$$r_{11} = \frac{2 \times 0.432}{(1 + 0.432)}$$

$$r_{11} = \frac{0.865}{1.432}$$

$$r_{11} = 0.604$$

To know the test is reliable or not, the value of r_{11} must be compared with r product moment. The value of r_{11} must be higher than r table. From the calculation above, the value of r_{11} is 0.604. then the r_t at 5% grade of significance is 0.404. While r_t at 1% grade significance is 0.515. So, it can be concluded that $0.404 < 0.604 > 0.515$. in other words, the instrument is reliable because the value of r_{11} is higher than r_t . To make clear about this analysis, see the appendices.

⁷ Suharsimi Arikunto, *Op.Cit.*, p. 223

