

CHAPTER III

THE RESEARCH METHOD

A. The Research Design

The design of this research was an experimental research. According to Creswell, Experimental research is used when the writer wants to establish possible cause and effect between the independent and the dependent variables.¹ It means there are differences context that will produce cause and effect result. The design of this research was a quasi-experiment design. According to Creswell, quasi-experiment design is test and idea (or practice or procedure) to determine whether it influence an outcome or dependent variable.² James Dean Brown stated that there are two variables in the research, the first one is a dependent variable that is observed to determine what effect, if any, the other types of variable may have on it and the second one is an independent variable that is variables selected by the researcher to determine their effect on or relationship with the dependent variable.³ There were two variables in this research, the first variable was paragraph puzzle activity as an independent variable (x variable), the second was reading comprehension as a dependent variable (y variable). This research used experimental and control class. Therefore, the experimental class was treated by using paragraph puzzle activity and also the experimental class was provided with pre-test, treatment, and post-test. The control class was treated without using paragraph puzzle activity.

While the last result of the test was analyzed by using T-Test formula. The design is in the following table:

TABLE III.1

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

²*Ibid*

³James Dean Brown. *Understanding Research in Second Language Learning; A Teacher's Guide to Statistics and Research Design* (Cambridge : Cambridge University Press, 1988), p. 10

The Research Design

Group	Pre-Test	Treatment	Post-Test
Experimental	X1	T	Y1
Control	X	-	Y2

Where: E : Experimental group

C : Control group

X1 : Pre-test in experimental group

X2 : Pre-test in control group

Y1 : Post-test in experimental group

Y2 : Post- test in control group

T : Treatment

B. The Time and the Location of the Research

This research was conducted at Islamic Junior High School of Darel Hikmah Pekanbaru. The school is located at H.R Soebrantas Street Pekanbaru. The research was done for two months; from January to February 2014.

C. The Subject and the Object of Research

Subject of the research was the Eight Grade Students of Islamic Junior High School of Darel Hikmah Pekanbaru. The objects of the research were using paragraph puzzle activity and students' reading comprehension in recount text.

D. The Population and the Sample of the Research

The population of the research was the Eight Grade Students of Islamic Junior High School of Darel Hikmah Pekanbaru in 2013-2014 academic years. It had 10 classes. The number

of the eight grade students of Islamic Junior High School of Darel Hikmah Pekanbaru was 302 students.

TABLE III.2
The Total Population of the Eight Grade Students of Islamic Junior High School Darel Hikmah Pekanbaru 2013-2014

NO	CLASS	TOTAL
1	VIII A1	26
2	VIII A2	36
3	VIII A3	34
4	VIII A4	34
5	VIII A5	34
6	VIII B1	26
7	VIII B2	26
8	VIII B3	30
9	VIII B4	30
10	VIII B5	26
TOTAL		302

The population above was large enough to take as the sample of the research. Based on the research design, the writer took two classes, as control and experimental class. The writer took the classes for the research by using cluster-random sampling.⁴ So, the class as the experimental class was VIII A 4 and the control class was VIII A5.

E. The Instrument of the Data Collection

In this research, the researcher or the writer used test to collect the data. The test was used to know and measure the students' ability in reading comprehension about the recount text.

⁴ L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application: Sixth Edition*, New Jersey: Prentice-Hall, Inc, 2000, p.129

The data used in this research were the result of the scores of students' reading comprehension in recount text by using written text. The test was done twice; the first one was before the treatment and the second one was after the treatment given to the eight grade students of Islamic Junior High School of Darel Hikmah Pekanbaru.

Test is a method of measuring a person's ability, knowledge, or performance in a given domain.⁵ In this research, the writer used the test to find out students' reading comprehension. Tests can be categorized according to the types of information they provide.⁶ It means that this research used test to get the information about the students' reading comprehension.

The test was given to experimental and control class. Both of them got the same material. The writer used the paragraph puzzle activity to experimental class and the control class without the paragraph puzzle activity. The materials of the test were adopted from text book that was used in teaching and learning at Islamic Junior High School of Darel Hikmah Pekanbaru.

The writer used test to measure the students' achievement in reading comprehension. The type of collecting data was multiple choices item. It was used to select the correct answers from the questions. The test was given into two parts. The first was pre-test and it was given before the treatment. The second was post-test and it was given after the treatment. The questions were used in collecting the data that consisted of 20 questions in form of multiple choices. It used to find out the score of the students' reading comprehension.

The writer used pre-test and post-test for experimental and control group in order to know the effect of using paragraph puzzle activity on students' reading comprehension. After the students administered the test, the researcher or writer took the total score from the result of the reading comprehension test. According to Suharsimi Arikunto, there are some categories to

⁵H. Douglas Brown. *Language Assessment Principles and Classroom Practice*. (California: Longman, 2003),p. 3

⁶Arthur Hughes. *Testing for Language Teacher;Second Edition*.(Cambridge: Cambridge University Press, 2003),p. 11

evaluate the students' comprehension in reading text.⁷The students' score can be seen from the table below:

TABLE III.3
The classification of students' score

The Score of Reading Comprehension Level	Categories
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

F. The Research Procedure

Paragraph puzzle activity was used in learning process; it helps to measure the students' comprehension in reading text. There were two procedures in this research that were used by writer for collecting the data.

1. Procedures of collecting data for Experimental Group

- a. Pre-test

The pre-test was used to measure the students' ability in reading comprehension before the treatment was given. The question consisted of 20 questions of reading comprehension that were suitable with the curriculum used by the school.

- b. Treatment

⁷Suharsimi Arikunto. *Dasar-dasar Evaluasi Pendidikan , Edisi Revisi.*(Jakarta: Bumi Aksara, 2009), p. 245

The treatment was used only for the experimental group. The treatment was the paragraph puzzle activity in teaching reading comprehension part of learning English.

c. Post-test

After six meetings, the pre and post test were done. The result of experimental group score was analyzed and used as final data for the research.

2. The Procedures of Collecting Data for Control Group

a. Pre-test

The aims, items, questions, and procedures of the test for control group were the same as those that were conducted to experimental group.

b. Conventional technique

In this study, the teacher taught reading by using common ways or conventional technique of classical method.

c. Post-test

The post-test was administrated for both of experimental and control group after giving the treatment to the experimental group. The result of the post-test of experimental and control group was analyzed and was used as final data for this research.

G. Validity and Reliability

1. Validity

Before the tests were given to the sample of this research, both of the tests were tried out to 25 students of the nine grade students at Islamic Junior High School of Darel

Hikmah Boarding School Pekanbaru. The purpose of this try out was to obtain validity and reliability of the test. The test can be valid if it measures accurately what it is intended to measure.⁸ It was determined by finding the difficulty level of each item. The formula of item difficulty is as follows.⁹

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

Where:

P : index of difficulty or facility value

B : the number of correct answers

JS : the number of examinees or students

The difficulty level of an item shows how easy or difficult a particular item in a test is. The items that do not reach the standard level of difficulty are excluded from the test and they change 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).

2. Reliability

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Heaton explains that reliability is of 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:

⁸Arthur Hughes, *Testing For Language Teacher, 2nd Edition*, New York: Cambridge University Press, 2003, P.26

⁹Suharsimi Arikunto, *Op,Cit* p.209

- a. They are extent of the sample of material selected for testing.
- b. The administration of the test, clearly this is an important factor in deciding reliability.

H. The Technique of Data Analysis

Quasi-experimental research was used to analyze the data. The T-Test formula was used as the technique of data analysis. The researcher used independent sample t-test. In order to find out the difference of using paragraph puzzle activity in reading comprehension between who are taught and not taught by using paragraph puzzle activity, the data were analyzed statistically. In analyzing the data the writer used the experimental and the control group. In analyzing the data, the writer used score of pre-test and post-test. The different mean was analyzed by using SPSS 16 Version.

To analyze the data of this research, the writer used T-test the formula is as follow¹⁰:

$$t_o = \frac{M_x - M_y}{\frac{SD_x}{\sqrt{N-1}} + \frac{SD_y}{\sqrt{N-1}}}$$

Where : t_o : The value will be found

M_x : Mean X (experimental group)

M_y : Mean Y (control group)

SD_x : Standard deviation X (experimental group)

SD_y : Standard deviation Y (control group)

N : The number of the students

¹⁰Hartono. *Statistika untuk Penelitian*. (Yogyakarta: Pustaka Pelajar. 2009), p.202-203

