

CHAPTER III

RESEARCH METHODOLOGY

A. The Research Design

This Research is an Experimental research. According to Gay and Airasiaan, Experimental research is “the only type of the research that can test hypotheses to establish cause and effect relationship”.¹ In this research the writer used a quasi-experimental research design with nonequivalent control group design. This research design is one of the most widespread experimental design in educational research that involves the experimental group and control group were selected without random assignment, both groups given a pretest and posttest.² In this research, there were two classes; one class was as an experimental class taught by using Bookmark Technique and other was as a control group taught without using Bookmark Technique. Before doing the experiment, the students were given a pre-test. The experimental group got treatment and the control group did not get any treatment. After the treatment, the students were given a post-test. This research consisted of two variables; the independent variable was symbolized by “X” Bookmark Technique and the dependent one was “Y” which refers to students’ reading comprehension at State Junior High School 2 Pasir Penyuh Indragiri Hulu Regency.

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

²Jhon.W. Cresswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Education, 2008), p. 160

According to Campbell and Stanley, the design of this research can be illustrated as follows³:

Tabel III.1

<i>Class</i>	<i>Pre-test</i>	<i>Treatment</i>	<i>Post-test</i>
<i>Experiment</i>	<i>O₁</i>	<i>X</i>	<i>O₂</i>
<i>Control</i>	<i>O₃</i>	-	<i>O₄</i>

Where:

- O: Students' reading comprehension in pre-test and post-test of experimental and control class
- X: Teaching reading by using Bookmark Technique.

B. The Time and the Location of the Research

This research was conducted from February to March 2014 at State Junior High School 2 Pasir Penyu, Indragiri Hulu Regency, located on Cadika Street Pasir Penyu Indragiri Hulu Regency.

C. The Subject and Object of the Research

1. The subject of the research

The subject of this research was the second year students at State Junior High School 2 Pasir Penyu, Indragiri Hulu Regency.

2. The object of the research

The object of this research was the effect of using Bookmark Technique toward reading comprehension.

³Donald T. Campbell and Julian C. Stanley. *Experimental and Quasi-Experimental Design for Research* (Detroit: Houghton Mifflin Company, 1963). p.47

D. The Population and the sample of the Research

The population of the research was the second year students at State Junior High School 2 Pasir Penyu, Indragiri Hulu Regency. They were about 118 students, divided into four classes.

Tabel III.2

**The total population of the second year students at State Junior High School
2 Pasir Penyu 2013-2014**

No	Class	Number of Students
1	VIII 1	30
2	VIII 2	32
3	VIII 3	28
4	VIII 4	28
4	Total	118

The population above is large enough to be taken all as sample of the research. Because all samples have the same characteristic, Gay and Airasian suggest that the writer used cluster sampling. Cluster sampling randomly selects groups. so the writer used 2 classes of 4 classes to be taken as samples. The writer randomly chose class VIII3 as an experimental group and class VIII4 as a

control group. The experimental group consisted of 28 students, while the control group consisted of 28 students.

Tabel III.3

**The sample of the second year students at State Junior High School 2
Pasir Penyau, Indragiri Hulu Regency 2012-2013**

No	Class	Total
1	VIII 3	28
2	VIII 4	28
	Total	56

E. The Technique of Collecting Data

1. Test

In this research, the writer used test to measure the students' reading comprehension. The test was divided into two tests, they were pre-test and post-test. Both of these tests were given to the experimental and control class. The type of test was multiple choice tests. The items are all receptive, or selective, response items in that the test taker chooses from a set of responses. In this research the items used for pre-test and

post-test consisted of 20 items. The test was about reading comprehension appropriate with the curriculum of the school. The scores of narrative text were classified in the table below: ⁴

Table III.4
The Classification of Students' Score

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

The procedures of data collection strategy were carried out as follows:

1. Pre-test

At the beginning of the research, every participant in both experimental and control group took the pre-test in order to find out if they were in the same level at the starting point.

2. Treatment

The treatment was conducted for experimental class only. The treatment was using Bookmark Technique in teaching English part of reading

⁴SuharsimiArikunto. *Dasar – DasarEvaluasiPendidikan*. (Jakarta: PT. BumiAksara, 2011)210. p. 245

comprehension. The length of the time to apply the technique was about six meetings and every meeting was about 80 minutes.

3. Post-test

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

Before giving the test to the research participants , the writer gave the try out to the other classes that had the same level in the achievement of learning process with research participant to find out the validity and reability of the test.

F. The Validity and Reliability of the Test.

1. Validity

Before the test given to the sample of this research, the writer tried out the test item. The test given to the students was considered not to difficult or not to easy. The purpose of the try out was to obtain validity and reliability of the test. The test is said to be valid if it measures accurately what is intended to measure.⁵ In this research the writer used content validity. A test is said to have content validity if its content constitutes a representative sample of the language skill,

⁵ Arthur Huges. *Testing for Language Teacher, 2nd Edition* (New York: Cambridge University Press). P. 26

structure, etc, with which it is meant to be concerned.⁶ It means that the test given to the students was based on the material that they had learned. it was determined by finding the difficulty level of each item. The formula of item difficulty is as follows:⁷

$$FV = \frac{R}{N}$$

Where:

P : Index of difficulty

B : The number of correct answer

JS : The number of students taking test

The standard level of difficulty used was < 0.30 and > 0.70.⁸ It means that the items are accepted if the level of difficulty is between 0.30-0.70 and it is rejected if the level of difficulty is below 0.30 (difficult) and over 0.70 (easy). Then, the proportion is represented by “p”, whereas the proportion incorrect is represented by “q”. It can be seen from the following tables:

Table III. 5

The Students are Able to find the Main Ideas

Variable	Find main idea of narrative text				N
Item no.	1	6	11	16	30
Correct	12	15	15	20	

⁶ Ibid

⁷ J.B. Heaton. *Writing English Language Test*. (New York: Cabridge university Press, 1988).p. 178-179

⁸ *Suharsimi. Op.Cit.*, p. 210

P	0.4	0.5	0.5	0.67	
Q	0.6	0.5	0.4	0.33	

Based on the table above, the proportion of correct answers for item number 1 shows the proportion of correct 0.4, item number 6 shows the proportion of correct 0.5 , item number 11 shows the proportion of correct 0.5, and item number 16 shows the proportion of correct 0.67. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it is pointed out that the items for finding main idea of narrative text are accepted.

Table III. 6

The Students are Able to identify references of narrative text

Variable	Identify references of narrative text				N
Item no.	2	7	12	17	30
Correct	18	19	13	20	
P	0.6	0.63	0.43	0.67	
Q	0.4	0.37	0.57	0.33	

Based on the table above, the proportion of correct answers for item number 2 shows the proportion of correct 0.6, item number 7 shows the proportion of correct 0.63 , item number 12 shows the proportion of correct 0.43, and item number 17 shows the proportion of correct 0.67. Based on level of

difficulty “p” < 0.30 and “q” > 0.70, it is pointed out that the items for identifying references of narrative text are accepted.

Table III. 7

The Students are Able to identify the generic structure of narrative text

Variable	Identify the generic structure of narrative text				N
Item no.	3	8	13	18	30
Correct	19	16	18	20	
P	0.63	0.53	0.6	0.57	
Q	0.37	0.47	0.4	0.43	

Based on the table above, the proportion of correct answers for item number 3 shows the proportion of correct 0.63, item number 8 shows the proportion of correct 0.53 , item number 13 shows the proportion of correct 0.6, and item number 18 shows the proportion of correct 0.57. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it is pointed out that the items for identifying the generic structure of narrative text are accepted.

Table III. 8
The Students are Able to determine
the language feature of narrative text

Variable	Determine the language feature of narrative text				N
Item no.	4	9	14	19	30
Correct	18	17	15	20	
P	0.6	0.57	0.5	0.67	
Q	0.4	0.43	0.5	0.33	

Based on the table above, the proportion of correct answers for item number 4 shows the proportion of correct 0.6, item number 9 shows the proportion of correct 0.57 , item number 14 shows the proportion of correct 0.5, and item number 19 shows the proportion of correct 0.67. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it is pointed out that the items for determining the language feature of narrative text are accepted.

Table III. 9

The Students are Able to locate the meaning of vocabulary in context

Variable	locate the meaning of vocabulary in context				N
	Item no.	5	10	15	
Correct	16	13	13	17	
P	0.53	0.43	0.43	0.57	
Q	0.47	0.57	0.57	0.43	

Based on the table above, the proportion of correct answers for item number 5 shows the proportion of correct 0.53, item number 10 shows the proportion of correct 0.43 , item number 15 shows the proportion of correct 0.43, and item number 20 shows the proportion of correct 0.57. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it is pointed out that the items for locating the meaning of vocabulary in context are accepted.

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.⁹

To obtain the reliability of the test given, the writer used kr-20 formula as follows:¹⁰

$$\text{KR 20: } r_i = \frac{k}{(k-1)} \frac{st^2 - \sum pq}{st^2}$$

Where:

k : number of items in the instrument

P : proportion of students who answered the item correctly

Q : proportion of students who answered the item wrong (1-pi)

pq : the multiplication result between p and q

St² : total variance

Firstly, the writer calculated the total variance:

$$st^2 = \frac{x^2}{n}$$

Where:

n : number of respondents

$$x^2 = \sum xt^2 - \frac{(\sum xt)^2}{n}$$

⁹Heaton. *Op.Cit.*, p. 162

¹⁰Sugiyono. *Statistik untuk Penelitian*. (Bandung: Alfabeta, 2007). p. 359

$$\begin{aligned}
&= 4163 - \frac{(331)^2}{30} \\
&= 4163 - \frac{109561}{30} \\
&= 4163 - 3652.03 \\
&= 511
\end{aligned}$$

$$\begin{aligned}
s_t^2 &= \frac{511}{30} \\
&= 17.03
\end{aligned}$$

$$r_i = \frac{k}{(k-1)} \frac{s_t^2 - \sum p_i q_i}{s_t^2}$$

$$r_i = \frac{20}{(20-1)} \frac{17.03 - 4.81}{17.03}$$

$$r_i = \frac{20}{19} \frac{12.22}{17.03}$$

$$r_i = 1.05 \times 0.71$$

$$r_i = 0.74$$

To know the test was reliable or not, the value of r_i must be compared with r product moment. The value of r_i must be higher than r -table. From the calculation above, the value of r_i was 0.74. then the r -table at level of significance of 5% was 0.361 and at level of significance of 1 % was 0.463. so it can be concluded that $0.361 < 0.74 > 0.463$. In other words, the instrument was reliable.

G. The Technique of Data Analysis

In analyzing the students' reading comprehension, the writer used the standard of English lesson in State Junior High School 2 PasirPenyu. It was 70 for students' reading comprehension on narrative text.

It means that for those who get score > 70 , they pass the minimum passing grade (KKM), while those get score < 70 they don't pass The minimum passing grade (KKM).

1. Normality Test

Before analyzing the data by using t-test formula, the writer had to find out the normality test of the data. The normality test of the data was analyzed by using Kolmogorov Smirnov test with SPSS.16 version.

Analysis:

If the probability > 0.05 Ho was accepted

If the probability < 0.05 Ho was rejected

2. Analysis Data

In analyzing the data, the writer used scores of pre-test and post-test of experimental and control group. This score was analysed statistically. In this research the writer used these formulas.:

A. Independent sample t-test

To find out whether or not there is a significant difference between two or more variables that can be analyzed by using independent sample t-test. ¹¹ Gay added that the t-test for independent sample is used to determine whether or not there is probably a significant difference between the means of two independent samples.¹² Independent sample t-test was used to find out the results of the first and second hypotheses. They were as follows:

- a. To find out whether there is a significant difference between the students reading comprehension before being taught by using bookmark technique and without using Bookmark Technique.
- b. To find out whether there is a significant difference between the students reading comprehension after being taught by using bookmark technique and without using Bookmark Technique.

In this research, the data were analyzed by using SPSS 16.0 Version

The T-table was employed to see whether or not there is a significant difference among the mean of the score of both experimental and control class. statistical hypothesis:

¹¹ Hartono, *statistic penelitian* (Pekanbaru: PustakaPelajar, 2010). P. 177

¹² L.R Gay, Op.Cit. p. 484

1. $H_0 = t_0 < t\text{-table}$

2. $H_a = t_0 > t\text{-table}$

B. Paired sample t-test or non independent sample t-test

L.R Gay stated that t test for non independent samples is used to compare groups that are formed by some types of matching or comparing a single group's performance on a pre-test and post-test or on two different treatments.¹³

In this time, the writer used pre-test and post test score of the experimental class in order to find the significant effect of using Bookmark Technique toward students' reading comprehension on Narrative Text at State Junior High School 2 Pasir Penyu. To obtain the data, the writer used SPS 16.00 Version.

¹³*Ibid.* p. 488

