

## CHAPTER III

### METHODOLOGY OF THE RESEARCH

#### A. Method of the Research Design

The design of this research is an experimental research. According to Gay and Airasian experimental research is the only type of the research that can test hypothesis to establish cause and effect relationship.<sup>1</sup> Meanwhile, Creswell states that in experiment research is testing an idea (practice or procedure) to determine whether it influences an outcome or dependent variable.<sup>2</sup> The method used in this research was a quasi-experimental research that is pre-test and post-test non-equivalent control group design. Quasi-experimental designs have experiment group and control group. The researcher assigned intact groups the experimental and control treatments. In this research, there were two variables. The first was independent variable symbolized by “X” and the second was dependent variable symbolized by “Y”. The use of Cloze Passage Technique was as X variable and students’ comprehension on narrative text as Y variable.

In conducting the research, there were two classes involved. The first was experimental class and the second was control class. The experimental class means the students who were given the treatment by using Cloze Passage Technique, while the control class was not given Cloze Passage Technique.

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<sup>1</sup> L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application*, Sixth Edition, (New Jersey: Prentice Hall Inc, 2000), p. 367.

<sup>2</sup> John W Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research Ed 3* (New Jersey: Education International, 2008), p. 299.

The research design can be seen in the table below (*Quasi-Experimental Designs*):<sup>3</sup>

**Table III. 1**  
**(Research Type)**

<b>Group</b>	<b>Pre-Test</b>	<b>Treatment</b>	<b>Post-Test</b>
E (XI Science 1)	T1		T2
C (XI Science 2)	T1	X	T2

E : Experimental group

C : Control group

T1 : Pre-test for experimental group and control group

T2 : Post-test for experimental group and control group

: Receiving particular treatment

X : Without particular treatment

## **B. The Location and Time of the Research**

This research was conducted at Senior High School Pasir Pengarayan District of Rokan Hulu Regency in 2012-2013 of academic. The research was conducted from August to September 2013.

## **C. The Subject and Object of the Research**

The students of the second year at Islamic High School Pasir Pengarayan was the subject of this research, while the object was using Cloze Passage and the students' Reading Comprehension.

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<sup>3</sup> *Ibid*, p. 314.

#### **D. The Population and Sample of the Research**

The population of this research was the second year students of MAN Pasir Pengarayan. There were 5 classes which consisted of 3 classes for social and 2 classes for science department. The total numbers of the second year students were 115 students. The population above was large enough to be all taken as sample of the research. Based on the limitation of the research, the researcher took only two classes of science department; X1 science 1 as an experimental class and X1 science 11 as a control class. The sample of the research was 48 students; 24 students for experimental class and also 24 students for control class. This sample of the research was taken by using cluster random sampling. This technique was used when the researcher had a specific consideration in determining the appropriate sample. In this technique, the sample consideration was entirely very subjective. According to Gay, all the members of selected groups have similar characteristics.<sup>4</sup> Therefore, the researcher took two classes to represent the population having similar characteristics.

The similar characteristics intended for the both of class are: the students were taught by the same teacher of English, the students had the same level, and the numbers of the students' mean score of reading skill was not much different.

In conducting the research, the writer took the second year students of senior high school Pasir Pangarayan as the population. Population of this research was the whole students of the second year of senior high school Pasir Pangarayan. The number of the population can be seen in the following table:

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<sup>4</sup> L. R. Gay and Peter Airasian, *Op. cit.* p. 129.

**Table III. 2**  
**The Total Population of the Second of MAN**  
**Pasir Pengarayan 2012-2013**

No	Class	Total
1	IPS 1	23
2	IPS 2	22
3	IPS 3	22
4	IPA 1	24
5	IPA 2	24
	<b>Total</b>	<b>115</b>

**Table III. 3**  
**The Sample of the Second Year Students of MAN Pasir Pengarayan**

No.	Class	Male	Female	Total
1.	XI. Science 1	7	17	24
2.	XI. Science 2	5	19	24

### **E. Technique of the Data Collection**

Collecting data is the most important one in order to support the research. In this research, the researcher used test as instrument to collect data. Testing is the way in which the information about people language ability can be gathered. The test was used to find out the students' comprehension in reading narrative text. The data of this research were the score of the students' reading comprehension obtained by using reading test.

#### **1. Procedures of Collecting Data for Control Class**

In control class there were three procedures of collecting data:

##### **a. Pre-test**

Pre-test was given by the teacher before the students were taught by using three phase technique. It was used to know students' comprehension before being taught by using three phase technique.

b. Teaching by using three phase technique

In this case, the teacher started by giving topic to the students and then the teacher asked the students to read the passage.

c. Post-test

Post-test was given to the students after they were taught by using three phase technique. It was used to know whether or not the students were able comprehend the text.

## **2. Procedures of Collecting Data for Experimental Class**

In the experimental class there were three procedures of collecting data:

a. Pre-test

Pre-test was given to the students before the students were taught by using Cloze Passage Technique. It was used to measure the students' comprehension in reading narrative text before they were taught by using Cloze Passage Technique.

b. Treatment

In treatment, the students were taught by using Cloze Passage Technique. The teacher was explained to the students about the topic, and taught them by using Cloze Passage Technique.

c. Post-test

Post-test was a test that was given to the students after they were taught by using Cloze Passage Technique. It was used to know whether or not the students were able to comprehend narrative text easily by using Cloze Passage Technique.

Meanwhile, the type of the test was multiple choice tests. The test consisted of 20 items. According to Hughes, one of the techniques that can assess the students' comprehension is multiple choices test.<sup>5</sup> The test was given to the experimental class and control class in order to find out the effect of using Cloze Passage Technique toward reading comprehension. The researcher distributed the test about reading comprehension on narrative text to students. The materials of the test were adopted from the book of the second year students at MAN Pasir Pengarayan.

After the students did the test, the writer then took the total score from the result of the reading comprehension test. Then, the writer took the total score from the result of the reading comprehension test. The classification of the students' score is shown below:<sup>6</sup>

**Table III. 4**  
**The Classification of students' Score**

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

Finally, the result of the test in control and experimental classes was compared. By this result, the researcher could identify, whether or not the is an effective technique that can be used in improving students' reading comprehension on narrative text.

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<sup>5</sup> Arthur Hughes. *Testing for Language Teacher*; 2<sup>nd</sup> edition. (Cambridge: Cambridge University, 2003), p. 54.

<sup>6</sup> Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan (Edisi Revisi)*, (Jakarta: Bumi Aksara, 2009), p. 245.

## 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 items. The test given to the students was considered not too difficult or not too easy. According to Arikunto the test is accepted if the degree of difficulty is between 0.30 – 0.70.<sup>7</sup> It was determined by finding the difficulty level of each item. The formula for item difficulty is as follows:<sup>8</sup>

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

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 is in a test. The items that do not reach the standard level of difficulty are excluded from the test and they are changed 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). The proportion of correct is

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<sup>7</sup> Suharsimi Arikunto. *Dasar-Dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara. 2008. P. 245.

<sup>8</sup> Ibid. p. 208.

represented by “p”, whereas the proportion of incorrect is represented by “q”.

The data obtained by using posttest and were evaluated in 5 component:

1. The students are able to state main idea on narrative text
2. The students are able to identify generic structure on narrative text
3. The students are able to make inference on narrative text
4. The students are able to locate or identify facts such as the names of characters, the time of the story or the place of the story on narrative
5. The students are able to analyze the meaning of certain words on narrative text.

The calculation of item difficulty can be seen from the following table:

**Table III. 3**  
**The Students are able to State Main Idea on Narrative Text**

Variable	Identify main idea of the text				N
Item no	1	6	11	16	20
Correct	12	13	14	14	
P	0.60	0.65	0.70	0.70	
Q	0.40	0.35	0.30	0.30	

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

$$P = 1.00 - P$$

The table III.3 above shows the portion of correct answer. For item number 1 shows the proportion of correct 0.60, item number 6 shows the proportion of correct 0.65, item number 11 shows the proportion of correct 0.70, item number 16 shows the proportion of correct 0.70. 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 for identifying main idea of narrative text were accepted.

**Table III.4**  
**The Students Identify Generic Structures of Narrative Text**

Variable	Identifying generic structures of the text				N
Item no	2	7	12	17	20
Correct	13	12	14	13	
P	0.65	0.60	0.70	0.65	
Q	0.35	0.40	0.30	0.30	

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

$$Q = 1.00 - P$$

The table III.4 above shows the portion of correct answer. For item number 2 shows the proportion of correct 0.65, item number 7 shows the proportion of correct 0.60, item number 12 shows the proportion of correct 0.70, item number 17 shows the proportion of correct 0.65. 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 for identifying generic structure of narrative text were accepted.

**Table III.5**  
**The Students Make Inferences in Narrative Text**

Variable	Making Inferences				N
Item no	3	8	13	18	20
Correct	14	14	14	13	
P	0.70	0.70	0.70	0.65	
Q	0.30	0.30	0.30	0.35	

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

$$Q = 1.00 - P$$

The table III.5 above shows the portion of correct answer. For item number 3 shows the proportion of correct 0.70, item number 8 shows the proportion of correct 0.70, item number 13 shows the proportion of correct 0.70, item number 18 shows the proportion of correct 0.65, item number. 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 for making inferences were accepted.

**Table III.6**  
**The Students Identify the Language Features of Narrative Text**

Variable	The identify language feature				N
Item no	4	9	14	19	20
Correct	13	12	13	12	
P	0.65	0.60	0.65	0.60	
Q	0.35	0.40	0.35	0.40	

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

$$Q = 1.00 - P$$

The table III.6 above shows the portion of correct answer. For item number 4 shows the proportion of correct 0.65, item number 9 shows the proportion of correct 0.60, item number 14 shows the proportion of correct 0.65, item number 19 shows the proportion of correct 0.60. 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 for identifying the language features of narrative text were accepted.

**Table III.7**  
**The Students are able to analyze the meaning of certain words on narrative text**

Variable	Analyzing the meaning of certain words of the text				N
	Item no	5	10	15	
Correct	13	14	14	13	
P	0.65	0.70	0.70	0.65	
Q	0.35	0.30	0.30	0.35	

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

$$Q = 1,00 - P$$

The table III.7 above shows the portion of correct answer. For item number 5 shows the proportion of correct 0.65, item number 10 shows the proportion of correct 0.65, item number 14 shows the proportion of correct 0.70, item number 20 shows the proportion of correct 0.65. 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 for analyzing of certain words of narrative text were accepted.

## 2. Reliability

Sugiono states that reliable instrument shall mean instruments when used several times to measure the same object in a different time would produce the same data. Heaton explains that reliability is the accuracy of the result obtained by the instrument or measurement.<sup>9</sup> To obtain the reliability of the test given, the researcher used the formula as follows:

$$KR20: \quad r_i = \frac{K}{(K-1)} S^t - \sum \frac{p_i q_i}{s^t}$$

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<sup>9</sup> J. b Heaton, *Writing English Language Test* (Cambridge: Cambridge University, 1988), p. 16.

Where:

K : number of items in the instrument

Pi : proportion of subjects who answered the item correctly

qi : proportion of subjects who answered the item with the wrong (1-

Pi)  $\sum \frac{p_i q_i}{St}$  : The multiplication result between p and q

St<sup>2</sup> : Total variance

We must first calculate the total variance before:

$$St^2 = \frac{X^2}{n}$$

N: number of respondents

$$X^2 = \sum Xt^2 - \left( \frac{\sum t}{n} \right)^2$$

$$X^2 = 3511 - \left( \frac{263}{20} \right)^2$$

$$X^2 = 3511 - \frac{69169}{20}$$

$$X^2 = 3511 - 3458.45$$

$$X^2 = 52.55$$

$$St^2 = \frac{X^2}{20}$$

$$St^2 = \frac{52.55}{20}$$

$$St^2 = 2.6275$$

$$r_i = \frac{20}{20-1} \frac{2.6275-4.46}{2.6275}$$

$$r_i = 1.0526 \frac{-1.8325}{2.6275}$$

$$r_i = 1.0526 - 0.69743$$

$$r_i = 1.0526 x - 0.69743$$

$$r_i = - 0.734211$$

The reliability coefficients for good identified kinds of structure text and reading comprehension test was expected to exceed 0.0 and closed 1.00.

Heaton states that, the reliability of the test was considered as follows:

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<sup>10</sup>

## G. Technique of the Data Analysis

The data were analyzed by using the statistic analysis, in order to find out whether or not there is a significant effect of using Cloze Passage Technique toward reading comprehension on narrative text of the second year students at MAN Pasir Pengarayan. In analyzing the data, the writer used score of experimental class and control class. The technique of data analysis used in this research was T-test formula.

### 1. Independent sample t-test

According to Hartono, T-test is one of the statistic tests that are used to know whether or not there is significant difference of the two samples of mean in two variables.<sup>11</sup> Based on the formulations of the

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<sup>10</sup> J.B. Heaton, *Writing English Language Tests*. (Cambridge: Cambridge University Press, 1988), 168.

<sup>11</sup> Hortono, *Statistik untuk Penelitian*, (Yogyakarta: Pustaka pelajar, 2009), p. 208.

problem, the writer analyzed the data through the following procedures for each problem by using SPSS:

The t-table is employed to see whether or not there is a difference between the mean score of both experiment and control class. The t-obtained value is consulted with the value of t-table by using degree of freedom. The formula at the degree of freedom is as follows:<sup>12</sup>

$df = (N_x + N_y) - 2$  statically hypothesis:

$H_a : t_o > t_{table}$

$H_o : t_o < t_{table}$

Where:

$df$  = degree of freedom

$N_x$  = Number of students in experimental class

$N_y$  = Number of students in control class.

$H_a$  is accepted if  $t_o > t_{table}$  or there is an effect of using Cloze Passage Technique toward reading comprehension on narrative text.

$H_o$  is accepted if  $t_o < t_{table}$  or there is no effect of using Cloze Passage Technique toward reading comprehension on narrative text.

## 2. Paired sample t-test

The writer used this formula to answer the third formulation of the problem. L.R. Gay states that t-test for non independent sample is used to compare groups that are formed by some types of matching or to compare a single group's performance on a pre- and post-test or on two different treatments.

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<sup>12</sup> *Ibid*, p. 22

$$t = \frac{M_D}{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N - 1}}$$

To identify the level of the effect of using Cloze Passage Technique toward reading comprehension on narrative text of the second year students at MAN Kampar, it will be calculating coefficient ( $r^2$ ) by using formula:<sup>13</sup>

$$r^2 = \frac{t^2}{t^2 + n - 2}$$

To find out the percentage of coefficient effect ( $K_p$ ), it used the following formula:

$$K_p = r^2 \times 100\%.$$

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<sup>13</sup> Ridwan, *Rumus dan Data dalam Analisis Statiska* (Bandung: Alfabeta, 2008), p. 125