## CHAPTER III

## RESEARCH METHODOLOGY

## A. Research Design

According to L.R Gay (2000:321), experimental research is the only type of research that can hypothesis to establish cause and effect relationship. Then, the design of this research was a quasi-experimental design by using pre-test-post-test non-equivalent control group design (Cohen, Manion \& Marison, 2005:214).

There are two variables, independent variable (X) and dependent variable (Y). Independent variable (X) is Printed Mass Media Strategy, and the dependent variable ( Y ) is students' reading comprehension. Then, the design of this research was a quasi-experimental research by using nonequivalent control group design. According to Creswell (2008:314): the design of this research can be illustrated in the following table:

Table III. 1
The Research Design

| Group | Pre-Test | Treatment | Post-Test |
| :---: | :---: | :---: | :---: |
| Experimental <br> Group | $\mathrm{O}_{1}$ | X | $\mathrm{O}_{2}$ |
| Control Group | $\mathrm{O}_{3}$ | - | $\mathrm{O}_{4}$ |

Explanation: $\mathrm{O}_{1}$ and $\mathrm{O}_{3}=$ Pre-test to experimental group and control group
$\mathrm{O}_{2}$ and $\mathrm{O}_{4}=$ Post-test to experimental group and control group
X = Treatment Using Printed Mass Media Strategy

## 1. Procedures of Collecting Data for Experimental Group

a. Pre-test

The pre-test was carried out to determine the students' reading comprehension with their score. The items used for pre-test consisted of 25 items. The test was about reading comprehension.
b. Treatment

The treatment was conducted for experimental group by using Printed Mass Media Strategy.
c. Post-test

Post-test was done twice. After giving the treatment, the post-test was administered and analyzed as final data for this research.

## 2. Procedures of Collecting Data for Control Group

a. Pre-test

The goals, items, and procedures of the test for control group were the same as those conducted for experimental group, the difference was only on the time.
b. No treatment
c. Post-test

Post-test was also done twice, and the result was analyzed and used as final data for this research.

Based on the illustration above, the treatment was only given to the experimental group. The experimental group was treated by using Printed

# Mass Media Strategy, meanwhile the control group was not taught by any treatments. 

## B. Time and Location of the Research

This research was conducted to the eleventh grade students of State Senior High School 1 Pasir Penyu. It is located on Simpang Tiga Lirik Street, Indragiri Hulu Regency. It was conducted from March, 162017 to April, 11 2017.

## C. Subject and Object of the Research

## 1. Subject of the Research

The subject of this research was the eleventh grade students of State Senior High School 1 Pasir Penyu.

## 2. Object of the Research

The object of this research was Printed Mass Media Strategy on students' reading comprehension of narrative text.

## D. Population and Sample of the Research

## 1. Population

The population of this research was the eleventh grade students of State Senior High School 1 Pasir Penyu. There were seven classes of the eleventh grade students. The total number of population was 221 students. It can be seen from the table:

## Table III. 2

The Population of The Eleventh Grade Students of State Senior High School 1 Pasir Penyu

| No. | Class | Population |
| :---: | :---: | :---: |
| 1. | XI IPA 1 | 32 |
| 2. | XI IPA 2 | 31 |
| 3. | XI IPA 3 | 32 |
| 4. | XI IPS 1 | 31 |
| 5. | XI IPS 2 | 32 |
| 6. | XI IPS 3 | 32 |
| 7. | Total | 31 |
|  |  |  |

## 2. Sample

According to Verma and Mallick (2005:202), sample is a smaller number of elements selected from a population. In this case, the researcher took two classes as the sample of this research. The sample classes were XI IPA 1 and XI IPA 3. Class XI IPA 1 was an experimental class, and class XI IPA 3 was a control class. So, the total number of sample was 64 students. This research used cluster sampling technique in determining the sample of the research. According to Gay and Airasian (2000:129), cluster sampling is sampling in which groups, not individuals, are randomly selected. It means that cluster sampling randomly select groups, not individuals. All the members of selected groups have similar characteristic.

## Table III. 3

The Sample of The Eleventh Grade Students of State Senior High School 1 Pasir Penyu

| No. | Group | Class | Total |
| :---: | :---: | :---: | :---: |
| 1. | Experimental Class | XI IPA 1 | 32 |
| 2. | Control Class | XI IPA 3 | 32 |
| Total |  |  | 64 |

## E. Technique of Collecting Data

In order to collect the data in this research, the writer used test as the technique of collecting data. The test was used to measure the students' reading comprehension of narrative text, which was done twice, they were pre-test and post-test. Pre-test was used to know students' reading comprehension before doing treatment, and post-test was used after doing treatment.

According to Brown (2004:195), several kinds of test that are appropriate for assessing students, they are multipe-choice, matching tasks, short answer task, cloze test, open ended question, editing task, picture-cued task, and gap-filling task.

The writer used multiple choice tests to collect the data. Multiple choice is a test item in which the test taker is presented with a question along with four or five possible answers and must be selected one answer.

Furthermore, the instruments consisted of 25 questions. It was used to find out the students' reading comprehension of narrative text at the eleventh grade of State Senior High School 1 Pasir Penyu. The test items are
made based on the indicators of reading comprehension of narrative text as stated on the operational concept.

Table III. 4
The Blue Print of Test

| No. | Indicators | Total <br> Item | Number of Item |
| :---: | :--- | :---: | :---: |
| 1. | The students' ability to identify the <br> main idea of narrative text. | 5 | $1,6,11,16,21$ |
| 2. | The students' ability to find out the <br> factual information of narrative text. | 5 | $2,7,12,17,22$ |
| 3. | The students' ability to identify the <br> generic structure of narrative text. | 5 | $3,8,13,18,23$ |
| 4. | The students' ability to identify <br> reference words of narrative text. | 5 | $4,9,14,19,24$ |
| 5. | The students' ability to find the <br> inferences of narrative text. | 5 | $5,10,15,20,25$ |

After the students did the test, then the writer took the total score from the result of the reading comprehension test. According to Arikunto (2013:281), the classification of the students' score can be seen below:

Table III. 5
The Classification of Students' Score

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

## F. The Validity, Reliability, and Item Difficulty of the Test

## 1. Validity of the Test

According to Ary, et.al. (2010:225), validity refers to the extent which the instrument measured what it claimed to measure. Every test, whether it is short, informal classroom test or a public examination should
be valid as the test constructor can make it. The test must be aimed at providing a true measure of the particular skill in which it is intended to be measured.

In this research, the writer used content validity to measure the students' reading comprehension. Ary, et.al (2010:226) added that content validity is "the degree to which the samples of items, tasks or questions on a test are representative of some defined universe or domain of content".

To find out the validity of the items of questions, the writer used Split-Half formula by using SPSS 20 version by looking at corrected itemtotal correlation (correlation between score item and score total item $=$ $\mathrm{r}_{\text {observed }}$ ) in table Item-Total Statistics.

To know whether the test is valid or not, the value of $\mathrm{r}_{\text {observed }}$ must be compared with $r_{\text {table }}$. The number of students is 32 . Degree of fredoom is $32-2=30 . r_{\text {table }}$ on $\mathrm{df}=30$ are $0.349(5 \%)$ and $0.449(1 \%)$.

If the value of $r_{\text {observed }}>r_{\text {table }}=$ valid.
If the value of $\mathrm{r}_{\text {observed }}<\mathrm{r}_{\text {table }}=$ invalid.
The result of calculation of validity can be seen in the table below:

Table III. 6
Validity of the Test

| Item | $\mathrm{r}_{\text {counted }}$ | $\mathrm{r}_{\text {table }}$ <br> $(\mathrm{df}=30 ; 5 \%)$ | Result |
| :---: | :---: | :---: | :---: |
| Item 1 | .735 | 0.349 | Valid |
| Item 2 | .724 | 0.349 | Valid |
| Item 3 | .735 | 0.349 | Valid |
| Item 4 | .675 | 0.349 | Valid |
| Item 5 | .655 | 0.349 | Valid |
| Item 6 | .652 | 0.349 | Valid |
| Item 7 | .680 | 0.349 | Valid |
| Item 8 | .698 | 0.349 | Valid |
| Item 9 | .735 | 0.349 | Valid |
| Item 10 | .631 | 0.349 | Valid |
| Item 11 | .680 | 0.349 | Valid |
| Item 12 | .620 | 0.349 | Valid |
| Item 13 | .748 | 0.349 | Valid |
| Item 14 | .724 | 0.349 | Valid |
| Item 15 | .579 | 0.349 | Valid |
| Item 16 | .652 | 0.349 | Valid |
| Item 17 | .765 | 0.349 | Valid |
| Item 18 | .652 | 0.349 | Valid |
| Item 19 | .765 | 0.349 | Valid |
| Item 20 | .652 | 0.349 | Valid |
| Item 21 | .671 | 0.349 | Valid |
| Item 22 | .581 | 0.349 | Valid |
| Item 23 | .748 | 0.349 | Valid |
| Item 24 | .652 | 0.349 | Valid |
| Item 25 | .647 | 0.349 | Valid |
| In |  |  |  |

From the result of calculation by using SPSS, it was found that there were 25 items that were valid.

## 2. Reliability of the Test

Gay and Airasian (2000:169) stated that reliability is the degree to which a test consistently measures whatever it is measuring. In other words, the test is reliable when an examinee's results are consistent on repeated measurement. So, the key of qualification criterion of test
instrument is consistent. A test will be reliable if it gives the same results when it is given on different occasions. Not all tests are created equal; therefore, some tests are harder or easier than others. Besides, a test cannot be considered valid unless it is highly reliable, hence needed reliability.

According to Suharsimi (2006:180), there are several formulas can be used in finding reliability of instrument, such as Split-Half formula, Spearman-Brown formula, Flanagan formula, Rulon formula, Hoyt formula, Kuder-Richardson 20 (K-R 20) formula and Kuder-Richardson 21 (K-R 21) formula. From all these formulas, the writer used Split-Half formula by using SPSS.

To determine whether the test is reliable or not, the value of $\mathrm{r}_{\text {observed }}$ must be compared with $\mathrm{r}_{\text {table }}$. The number of students is 32 . Degree of freedom is $32-2=30 . \mathrm{r}_{\text {table }}$ on $\mathrm{df}=30$ are $0.349(5 \%)$ and $0.449(1 \%)$.

If the value of $\mathrm{r}_{\text {observed }}>\mathrm{r}_{\text {table }}=$ reliable;
If the value of $r_{\text {observed }}<r_{\text {table }}=$ not reliable
The result of calculation of reliability can be seen in the table as follows:

Table III. 7
Reliability of the Test
Reliability Statistics

|  |  | Vart 1 | Value |
| :--- | :--- | :--- | ---: |
| Cronbach's Alpha | N of Items | .924 |  |
|  |  | Part 2 | Nalue |
|  | N of Items | $13^{\mathrm{a}}$ |  |
|  | Total N of Items | .910 |  |
| Correlation Between Forms |  | $12^{\mathrm{b}}$ |  |
|  |  | 25 |  |
| Spearman-Brown Coefficient | Equal Length | .973 |  |
| Guttman Split-Half Coefficient | Unequal Length | .986 |  |

Based on the result of calculation by using SPSS, the reliability value of Guttman Split-Half Coefficient ( $r_{\text {observed }}$ ) is $0.984, r_{\text {observed }}>r_{\text {table }}$ ( $0.449<0.984>0.349$ ). It means that the instrumentation of test is reliable.

## 3. Item Difficulty of the Test

Before the test was administered to the sample of this research, the writer gave try out to 32 students of XI IPA 2 of Senior High School 1 Pasir Penyu. The purpose of try out was to obtain validity and reliability of the test. The validity of the test was determined by finding the difficulty level of each item.

According to Nurgiantoro (2012:357), item difficulty is a statement about how difficult or easy a question is for the examinee. A good question is if it is not too difficult and not too easy.

The formula for item difficulty is as follows (Suharsimi, 2007:208):

$$
P=\frac{B}{J S}
$$

Where:
P = Index of difficulty
B = The number of students who answer the item correctly
JS = The number of examinee or students taking the test
The formula above was used to find out whether each item of the test was easy. The items that did not reach the standard level of difficulty were revised and they were edited or changed with the new items that were appropriate. The accepted items were the ones were which had facility values between 0.30 and 0.70 . The index difficulty level of instruments is represented in the following table:

Table III. 8 Index Difficulty Level of Instruments

| Proportion Correct (p) | Item Category |
| :---: | :---: |
| $0.00-0.30$ | Difficult |
| $0.30-0.70$ | Average |
| $0.70-1.00$ | Easy |

The standard level of difficulty used was $>0.30$ 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 if it is over than 0.70 (the item is too easy). The proportion of correct is represented by "p", whereas the proportion of incorrect is represented by " $q$ ".

Thus, the calculation of item difficulty in this research can be seen as follows:

Table III. 9
Students' Ability to Identify the Main Idea of Narrative Text

| Variable | Identify the Main Idea |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{y}$ | $\mathbf{N}$ |  |  |  |  |  |
| Item No. | 1 | 6 | 11 | 16 | 21 | 25 |
| Correct | 14 | 17 | 14 | 17 | 16 |  |
| $\mathbf{P}$ | 0.44 | 0.53 | 0.44 | 0.53 | 0.5 |  |
| $\mathbf{Q}$ | 0.56 | 0.47 | 0.56 | 0.47 | 0.5 |  |

Based on the table above, the item numbers of question intended to identify the main idea are $1,6,11,16$, and 21 . The item number 1 obtained the proportion of correct answer which was 0.44 , the item number 6 obtained the proportion of correct answer which was 0.53 , the item number 11 obtained the proportion of correct answer which was 0.44 , the item number 16 obtained the proportion of correct answer which was 0.53 , the item number 21 obtained the proportion of correct answer which was 0.5 . Thus, based on the standard level of difficulty "p" was $>0.30$ and <0.70. So, it is pointed that the item difficulties of each item number for students to identify the main idea of the narrative text were accepted.

Table III. 10
Students' Ability to find out the Factual Information of Narrative Text

| Variable | Find out Factual <br> Information |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{y y y y y y n}$ | $\mathbf{N}$ |  |  |  |  |  |
| Item No. | 2 | 7 | 12 | 17 | 22 | 25 |
| Correct | 19 | 14 | 20 | 13 | 20 |  |
| $\mathbf{P}$ | 0.59 | 0.44 | 0.62 | 0.41 | 0.62 |  |
| $\mathbf{Q}$ | 0.41 | 0.56 | 0.38 | 0.59 | 0.38 |  |

Based on the table above, the proportion of the correct answer for item number 2 obtained 0.59 , the item number 7 obtained the proportion of correct answer which was 0.44 , the item number 12 obtained the proportion of correct answer which was 0.62 , the item number 17 obtained the proportion of correct answer which was 0.41 , the item number 22 obtained the proportion of correct answer which was 0.62 . Based on the standard level of difficulty " p " is $>0.30$ and $<0.70$. So, it is pointed that the item difficulties of each item number for students to find out the factual information of the narrative text were accepted.

Table III. 11
Students' Ability to Identify the Generic Structure of Narrative Text

| Variable | Identify the Generic <br> Structure |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| N |  |  |  |  |  |  |
| Item No. | 3 | 8 | 13 | 18 | 23 | 25 |
| Correct | 14 | 18 | 16 | 17 | 15 |  |
| P | 0.44 | 0.56 | 0.5 | 0.53 | 0.47 |  |
| Q | 0.56 | 0.44 | 0.5 | 0.47 | 0.53 |  |

Based on the table above, the proportion of the correct answer for item number 3 obtained 0.44 , the item number 8 obtained the proportion of correct answer which was 0.56 , the item number 13 obtained the proportion of correct answer which was 0.5 , the item number 18 obtained the proportion of correct answer which was 0.53 , the item number 23 obtained the proportion of correct answer which was 0.47 . Based on the standard level of difficulty " $p$ " is $>0.30$ and $<0.70$. So, it is pointed that the item difficulties of each item number for students' ability to identify the generic structure of narrative text were accepted.

Table III. 12
Students' Ability to Identify Reference Words of Narrative Text

| Variable | Identify the Reference |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Words | N |  |  |  |  |  |
|  | Item No. | 4 | 9 | 14 | 19 | 24 |
| 24 | 25 |  |  |  |  |  |
| Correct | 18 | 14 | 19 | 13 | 17 |  |
| P | 0.56 | 0.44 | 0.59 | 0.41 | 0.53 |  |
| Q | 0.44 | 0.56 | 0.41 | 0.59 | 0.47 |  |

Based on the table above, the proportion of the correct answer for item number 4 obtained 0.56 , the item number 9 obtained the proportion of correct answer was 0.44 , the item number 14 obtained the proportion of correct answer which was 0.59 , the item number 19 obtained the proportion of correct answer which was 0.41 , and the item number 24 obtained the proportion of correct answer which was 0.53 . Based on the standard level of difficulty " $p$ " is $>0.30$ and $<0.70$. So, it is pointed that the item difficulties of each item number for students' ability to identify the reference words of narrative text were accepted.

Table III. 13
Students' Ability to Find the Inferences of Narrative Text

| Variable | Find the Inferences <br> Words |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| N |  |  |  |  |  |  |
| Item No. | 5 | 10 | 15 | 20 | 25 | 25 |
| Correct | 15 | 19 | 15 | 17 | 15 |  |
| P | 0.47 | 0.59 | 0.47 | 0.53 | 0.47 |  |
| Q | 0.53 | 0.41 | 0.53 | 0.47 | 0.53 |  |

Based on the table above, the proportion of correct answer for item number 5 obtained 0.47 , the item number 10 obtained the proportion of correct answer which was 0.59 , the item number 15 obtained the
proportion of correct answer which was 0.47 , the item number 20 obtained the proportion of correct answer which was 0.53 , the item number 25 obtained the proportion of correct answer which was 0.47 . Based on the standard level of difficulty " $p$ " is $>0.30$ and $<0.70$. So, it is pointed that the item difficulties of each item number for students' ability to make the inference words of narrative text were accepted.

## G. The Normality and Homogeneity of the Test

## 1. Normality of the Test

Assessing normality of data is used to describe a symmetrical, bell shaped curve, which has the greatest frequency of scores in the middle, with smaller frequency towards the extremes. Normality can be assessed by obtaining skewness and kurtosis values (Pallant, 2003:54). Before analyzing the data by using t -test formula, the researcher had to find out the normality test of the data. It was used to know whether the data are normal or not.

In order to know whether the data have normal distribution or not, the writer used Kolmogorov-Smirnov method as the formula to analyze the data. In this research, the writer analyzed the data by using SPSS (Statistical Product and Service Solution) 20 version program. The SPSS result for Kolmogorov-Smirnov test can be seen as follows: $p$-value (Sig.) $>0.05=$ the data are in normal distribution. $p$-value (Sig.) $<0.05=$ the data are not in normal distribution.

Based on the SPSS output, the test of normality is showed as follows:
Table III. 14
Test of Normality

| Group | Kolmogorov-Smirnov $^{\mathrm{a}}$ |  | Shapiro-Wilk |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Statistic | df | Sig. | Statistic | df | Sig. |
| Score | experiment | .112 | 32 | .200 | .957 | 32 |
|  |  |  |  |  |  |  |
|  | control | .120 | 32 | .200 | .965 | 32 |
|  |  |  |  |  |  |  |

a. Liliefors Significance Correction

Based on the table above, it was obtained that the significance level in Kolmogorov-Smirnov test of Experimental Class was 0.200; in other words $0.200>0.05$, and significance level of Control Class was 0.200 ; it means that $0.200>0.05$. In brief, the data were distributed normally.

## 2. Homogeneity of the Test

The homogeneity test was used to measure whether the data are correlated from true population or not. Data homogeneity of variance test was calculated by using SPSS version 20. The SPSS result for Levene test was interpreted as follows:
$p$-value (Sig.) $>0.05=$ the data are homogeneous.
$p$-value (Sig.) $<0.05=$ the data are not homogeneous.
Based on SPSS output, the homogeneity of the test can be seen as follows:

Table III. 15

## Test of Homogeneity

| Levene Statistic | df1 | df2 | Sig. |
| ---: | ---: | ---: | ---: |
| .570 |  | 1 | 62 |
|  | .453 |  |  |

Based on the table above, it was found that the value of significance (Sig.) was 0.453 . According to Pallant $(2010 ; 207)$, the data are homogeneous or variant when the value Sig. is higher than 0.05 . So, it is clear that Sig. is higher than 0.05 which indicates the homogeneity of the data. The comparison can be stated by $0.453>0.05$.

## H. The Technique of Data Analysis

In order to find out whether there is a significant effect of using Printed Mass Media Strategy on students' reading comprehension of narrative text at the eleventh grade of Senior High School 1 Pasir Penyu, the data were analyzed statistically. In analyzing the data, the researcher used pre-test of the experimental and control classes, and post-test of the experimental and control classes. Those scores were analyzed by using statistically analysis.

In this research, 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 Printed Mass Media Strategy on students' reading comprehension of narrative text at the eleventh grade of Senior High School 1 Pasir Penyu. The data were analyzed by using SPSS 20 version.

The t - table was employed to see whether there is significant effect on the mean score of both experimental and control classes. The t-test was obtained by considering the degree of freedom (df) as follows:

$$
\mathrm{df}=(\mathrm{N} 1+\mathrm{N} 2)-2
$$

Where:
df $\quad=$ the degree of freedom.
N1 = the number of students in experimental class.
N2 = the number of students in control class.
Statistically, the hypotheses are:

$$
\begin{aligned}
& \mathrm{H}_{\mathrm{o}}=\mathrm{t}_{\mathrm{o}}<\mathrm{t}_{- \text {table }} \\
& \mathrm{H}_{\mathrm{a}}=\mathrm{t}_{\mathrm{o}}>\mathrm{t}_{\text {table }}
\end{aligned}
$$

$\mathrm{H}_{\mathrm{o}}$ is accepted if $\mathrm{t}_{\mathrm{o}}<\mathrm{t}$-table or there is no significant effect of using Printed Mass Media Strategy on students' reading comprehension of narrative text at the eleventh grade of Senior High School 1 Pasir Penyu.
$H_{a}$ is accepted if $t_{o}>t t_{\text {table }}$ or there is a significant effect of using Printed Mass Media Strategy on students' reading comprehension of narrative text at the eleventh grade of Senior High School 1 Pasir Penyu.

When the researcher had known there is a significant effect on students' reading comprehension taught by using Printed Mass Media, it is necessary to calculate the effect size by finding out the eta square. Pallant (2010:247) mentioned that the formula of Eta Squared is as follows:

$$
\text { Eta Squared }=\frac{\mathrm{t}^{2}}{\mathrm{t}^{2}+\mathrm{N}-2}
$$

Pallant (2010:210) added that the guidelines for interpreting this value are:
$0.01=$ small effect.
$0.06=$ medium effect.
$0.14=$ large effect

