## CHAPTER III

## RESEARCH METHOD

## A. Research Design

The type of this research is experimental research. According to Creswell (2008:299), "experiment is you test an idea (or practice procedures) to determine whether it influences an outcome or dependent variables". This research used a quasi-experimental design: the pretest-post-test, non-equivalent group design. Thus, this research used experimental and control group. The dashed line separating the parallel rows in the diagram of the non-equivalent control group indicates that the experimental and control groups have not been equated by randomization hence the term 'non-equivalent Louis Cohen (2007:283). There were two variables in this research, first variable was Scaffolding Reading Experience as independent variable ( x variable), the second is reading comprehension as dependent variable (y variable). Therefore the experimental and control classes were be provided with pre-test, treatment, and post-test.

The quasi-experimental design: the pretest-post-test, non-equivalent group design can be presented as follow Creswell (2012:310):

Table III. 1
The Research Design

| Group | Pre-Test | Treatment | Post-Test |
| :---: | :---: | :---: | :---: |
| Experimental | X AK | T | Y 1 |
| Control | X TI | - | Y 2 |

Where:
E = Experimental group
C = Control group
X AK = Pre-test in experimental group
X TI = Pre-test in control group
Y1 = Post-test in experimental group
Y2 = Post-test in control group
$\mathrm{T}=$ Treatment

## B. The Location and Time of the Research

This research was conducted at Vocational High School Muhammadiyah 3 Terapdu Pekanbaru It is located in Cipta Karya Street Panam, Pekanbaru. This research was carried out from April to Mei 2016.

## C. The Subject and Object of the Research

## 1. The Subject of the research

The subject of the research was the tenth grade students of Vocational High School Muhammadiyah 3 Terpadu Pekanbaru 2015/2016 academic year.

## 2. The Object of the research

Object of the research was using Scaffolding Reading Experience Text strategy and students' reading comprehension at Vocational High School.

## 3. The Population and Sample of the Research

The population of the research was the tenth grade students at Vocational High School Muhammadiyah 3 Terpadu Pekanbaru. They consisted of five classes. The total number of population was 124 students.

## Table III. 2

## The Population of the tenth Grade

## Students of Vocational Hugh School Muhammadiyah 3 Terpadu Pekanbaru

| No | Classes | Population |
| :---: | :--- | :--- |
| 1 | X AK | 23 Students |
| 2 | X TI 1 | 23 Students |
| 3 | X TI 2 | 26 Students |
| 4 | X TRK | 25 Students |
| 5 | X TKR/TSM | 27 Students |
| Total |  | 124 Students |

Source: Curriculum section of Vocational High School Muhammadiyah 3 Terpadu Pekanbaru

The researcher used cluster random sampling technique in determining the sample of the research. Furthermore, Gay and Petter Airasian (2000:389), cluster sampling is sampling in which group, not individually; it can be communities, school district, and so on. The researcher gave name card to the classes based on every tenth grade class in Vocational High School Muhammadiyah 3 Pekanbaru, they were X AK, X TI 1, X TI 2, X TKR, X TKR/TSM. The researcher mixed these cards then took two cards randomly as the sample of the research. The chosen classes were X AK and X TI 1. Class XI AK was experimental class, and class X TI 1 was control class. So the total number of sample is 46 students.

Table III. 3
The Sample of the Research

| No | Class | Male | Female | Total |
| :---: | :---: | :---: | :---: | :---: |
| 1 | X AK | 8 Students | 16 Students | 23 Students |
| 2 | X TI 1 | 19 Students | 4 Students | 23 Students |
| TOTAL |  |  | 46 Students |  |

## D. The Technique of Collecting Data

In order to get some data needed to support this research, the researcher applied the techniques by the test. The test wasmultiple choice, the question consisted of 20 items based on the indicator. The test was used to know the students' reading comprehension in narrative text.

The test was divided into two test; pre-test and post-test. Pre test was given before treatment. The test was administered to class X AK as experimental class and class X TI as control class. Post- test was given after teaching several time, it was given for both of the classes. The test was administered to class X AK as experimental class and class X TI as control class.

Based on Arikunto (2009:245), the interpretation of students score is classified follow:

## Table III. 4

The Blueprint of The Test

| NO | INDICATOR | NUMBER OF QUESTION |  |  |  |
| :---: | :--- | :---: | :---: | :---: | :---: |
| 1 | The students' ability to identify the main <br> idea of narrative text. | 1 | 6 | 11 | 16 |
| 2 | The students' ability to know the meaning <br> word of narrative text. | 2 | 7 | 12 | 17 |
| 3 | The students' ability to identify generic <br> structures of narrative text. | 3 | 8 | 13 | 18 |
| 4 | The students' ability to identify moral <br> value of narrative text. | 4 | 9 | 14 | 19 |
| 5 | The students' ability to identify factual <br> information of narrative text. | 5 | 10 | 15 | 20 |

Table III. 5
The Classification of Students Score

| THE SCORE <br> LEVEL | CATEGORY | MARK |
| :---: | :---: | :---: |
| $81-100$ | VERY GOOD | A |
| $61-80$ | GOOD | B |
| $41-60$ | ENOUGH | C |
| $21-40$ | POOR | D |
| $0-20$ | FAIL | E |

## 1. Validity and Reliability of the Test

## a. Validity of the Test

Hughes (1989:22), a test is said to be valid it if measures accurately what it is intended to measure. Gay $(2000: 161)$ stated that the validity is the appropriateness of the interpretations made from the test score. There are three kinds of validity that consist of content validity, construct validity, and criterion validity.

Before the test given to the sample of this research, the researcher did try out the test items. The test given to the students was considered not too difficult or not too easy. According to Arikunto (2008:208) the test is accepted if the degree of difficulty is between $0.30-0.70$. It was determined by finding the difficulty level of each item. The formula for item difficulty is as follows:

$$
\mathrm{P}=\frac{\mathrm{B}}{\mathrm{IS}}
$$

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 in a test. The items that do not reach the standard level of difficulty are excluding 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 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).

Table III. 6
Validity test

| Question no | Score | Result |
| :---: | :---: | :---: |
| 1 | 0.61 | Valid |
| 2 | 0.70 | Valid |
| 3 | 0.43 | Valid |
| 4 | 0.52 | Valid |
| 5 | 0.61 | Valid |
| 6 | 0.70 | Valid |
| 7 | 0.48 | Valid |
| 8 | 0.70 | Valid |
| 9 | 0.70 | Valid |
| 10 | 0.61 | Valid |
| 11 | 0.70 | Valid |
| 12 | 0.52 | Valid |
| 13 | 0.43 | Valid |
| 14 | 0.70 | Valid |
| 15 | 0.57 | Valid |
| 16 | 0.70 | Valid |
| 17 | 0.70 | Valid |
| 18 | 0.35 | Valid |
| 19 | 0.65 | Valid |
| 20 | 0.65 | Valid |
| 2 |  |  |

Table III. 7
The Students' ability to identify the main idea in narrative text

| Variable | Identifying the main idea |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 6 | 11 | 16 |  |
| Correct | 14 | 16 | 16 | 16 |  |
| P | 0.61 | 0.70 | 0.70 | 0.70 |  |
| Q | 0.39 | 0.30 | 0.30 | 0.30 |  |

Based on the table III.7, the proportion of correct answer for item number 1 shows the proportion of correct 0.61 , item number 6 shows the proportion of correct 0.70 , 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 difficulty level of each item number for identify the main idea in narrative text is accepted.

## Table III. 8

The Students' ability to know the meaning word in narrative text

| Variable | Students' ability to know meaning word |  |  | N |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item no | 2 | 7 | 12 |  | 23 |
| Correct | 16 | 11 | 12 | 16 |  |
| P | 0.70 | 0.48 | 0.52 | 0.70 |  |
| Q | 0.30 | 0.52 | 0.48 | 0.30 |  |

Based on the table III.8, the proportion of correct answer for item number 2 shows the proportion of correct 0.70 , item number 7 shows the proportion of correct 0.48 , item number 12 shows the proportion of correct 0.52 , item number 17 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 difficulty level of each item number for knowing the meaning word in narrative text is accepted.

## Table III. 9

## The students' ability to identify the generic structure in narrative text

| Variable | Identifying the generic structure |  |  | N |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 8 | 13 |  |  |
| Correct | 10 | 16 | 10 | 8 |  |
| P | 0.43 | 0.70 | 0.43 | 0.35 |  |
| Q | 0.57 | 0.30 | 0.57 | 0.65 |  |

Based on the table III.9, the proportion of correct answer for item number 3 shows the proportion of correct 0.43 , item number 8 shows the proportion of correct 0.70 , item number 13 shows the proportion of correct 0.43 , item number 18 shows the proportion of correct 0.35 . Based on the standard level of difficulty "p" $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for identify the generis structure in narrative text is accepted.

Table III. 10
The Students' ability to identify the moral value in narrative text

| Variable | Identifying the moral value of the text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Item no |  |  | 4 |  |
| 14 | 19 |  |  |  |  |
| Correct | 12 | 20 | 16 | 15 | 23 |
| P | 0.52 | 0.70 | 0.70 | 0.65 |  |
| Q | 0.48 | 0.30 | 0.30 | 0.35 |  |

Based on the table III.10, the proportion of correct answer for item number 4 shows the proportion of correct 0.52 , item number 9 shows the
proportion of correct 0.87 , item number 14 shows the proportion of correct 0.78 , item number 19 shows the proportion of correct 0.74 . Based on the standard level of difficulty " p " $<0.30$ and $>0.70$, it is pointed out that item difficulty level of each item number for identify the moral value in narrative text is accepted.

Table III. 11
The Students' ability to identify factual information in narrative text

| Variable | Identifying the factual information of the text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item no | 5 | 10 | 15 | 20 | 23 |
| Correct | 14 | 14 | 13 | 15 |  |
| P | 0.61 | 0.61 | 0.57 | 0.65 |  |
| Q | 0.39 | 0.39 | 0.43 | 0.35 |  |

Based on the table III.11, the proportion of correct answer for item number 5 shows the proportion of correct 0.61 , item number 10 shows the proportion of correct 0.61 , item number 15 shows the proportion of correct 0.57 , 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 difficulty level of each item number for identify factual information in narrative text is accepted.

## b. Reliability

H. Douglas Brown (2003:19), that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining similar results when measurement was repeated on different occasions or with different instruments or by different persons. The characteristic of
reliability was sometimes termed consistency. Meaning that, we can say the test was reliable when an examinee's results were consistent on repeated measurement. To obtain the reliability of the test, it must be known the mean and standard deviation of test.

The reliability is a criterion that can judge the quality of the test. Reliability is a necessary characteristic of any good test. Heaton (1988:159) explained that reliability is primary importance in the use of both public achievement and proficiency test and classroom test. Scott and Steven (2005: 279) said that Reliability is usually measured with four techniques: (a). test - retest reliability, (b). equivalent form reliability, (c). internal consistency, and (d). interrater reliability. There are some factors affecting the reliability of a test, they are:
a. The extent of the sample of material of material selecting for testing.
b. The administration of the test, clearly this is an important factor in deciding reliability.

Then, Tinambunan in Dian Mujarokhim (2011:37) stated that the reliability for good classroom achievement tests are expected to exceed 0.0 and closed 1.00 . He state that reliability of test is considered as follows:

1. $0.00-0.20$ : Reliability
2. $0.21-0.40$ : Reliability is sufficient
3. $0.41-0.70$ : Reliability is high
4. $0.71-1.00:$ Reliability is very high

To obtain the reliability of the test given, the writer used SPSS 17.00 to find out whether the test is reliable or not.

Table III. 12
Realibilty Test
Case Processing Summary

|  |  | N | $\%$ |
| :---: | :--- | :---: | :---: |
| Cases | Valid | 23 | 100.0 |
|  | Excluded ${ }^{\mathrm{a}}$ | 0 | .0 |
|  | Total | 23 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

| Cronbach's Alpha | N of Items |
| :---: | :---: |
| .554 | 2 |

The reliability of test was 0.554 . It is categorized into high reliability level.

## 2. Normality and Homogeneity of the test

Assessing normality of data is used to describe a symmetrical, bell shaped curve, which has the greatest frequency of score in the middle with smaller frequency towards the extremes. In this research, the researcher assesed the normality of data by using kolmogorov-smirnov test from SPSS 16 version. The kolmogorov-smirnov Z test is typically used to assess univariate normality ( Abell, 2009:121). The result of the test can be seen as follows:

Table III. 13

| One-Sample Kolmogorov-Smirnov Test |
| :--- |
|   pretest posttest <br> N  23 23 <br> Normal Parameters ${ }^{\text {a }}$ Mean 51.9565 69.5652 <br>  Std. Deviation 8.49320 6.72733 <br> Most Extreme Differences Absolute .200 .213 <br>  Positive .200 .213 <br>  Negative -.176 -.134 <br>   .958 1.023 <br> Kolmogorov-Smirnov Z  .318 .246 <br> Asymp. Sig. (2-tailed)    |
| a.test distribution is normal |

From the table III. 10 above, the value (asymp.sig 2-tailed) in pretest and posttest are 0.318 and 0.246 higher than 0.05 . It can be concluded that the test distribution is normal. Then, the homogeneity of the test also could be seen the table below:

Table III. 14
Test of Homogeneity of Variance
Test of Homogeneity of Variance

|  |  | Levene Statistic | df1 | df2 |
| :--- | ---: | ---: | ---: | ---: |

To find out the homogeneity of the test, the writer used SPSS 17. Referring to the table above, it could be seen that sig. in based on trimmed mean is $0.171>0.05(5 \%)$. In conclusion the data of test was homogenous.

## 4. Technique of Analyzing Data

In this research, the data were analyzed by using a statistic software of Statistical Product and Service Solutions (SPSS) 17 version. The result of t test analyzing could be seen on the SPSS output, indenpendent sample $t$-test and eta squared.

After computing t-test, it was obtained the degree of freedom used to determine whether the $t$-score was significant or not. The obtained value was consulted with the value of t -table by using degree of freedom $(\mathrm{df})=(\mathrm{NI}+\mathrm{N} 2)-$ 2 statically hypothesis Hartono (2004:209) :
$\mathrm{H}_{\mathrm{a}}$ : is accepted if to $\geq \mathrm{t}$-table or it can be said that there is significant effect of students' reading comprehension in narrative text by using Scaffolding Reading Experience strategy at vocational high school muhammadiyah 3 Terpadu pekanbaru.
$\mathrm{H}_{0}: \quad$ is accepted if to $\leq \mathrm{t}$-table or it can be said that there is no significant effect of students' reading comprehension in narrative text by using Scaffolding Reading Experience strategy at vocational high school muhammadiyah 3 Terpadu pekanbaru.

