## CHAPTER III

## RESEARCH METHOD

## A. Research Design

The research design referred to the conceptual structure within which research had been conducted. This was important because it facilitated the research to be as efficient as possible yielding maximal information. This research was an experimental research. According to Creswell (2008, p. 294) an experimental research design is the traditional approach to conducting quantitative research. Creswell (2008, p. 295) also stated that experiment is testing an idea to determine whether it influences an outcome or dependent variable. This research used quasi-experimental design because the technique sampling that was used was cluster random sampling. In addition, there are pretest and posttest design approach in the quasi-experimental design that is the researcher assigns intact groups the experimental and control treatment (Cresswell, 2008, p. 313). In other words, in this research there are two classes, they are control class and experimental class which are given pretest and also posttest.

This research consists of two variable; they are independent variable and dependent variable. Independent variable refers to Classwide Peer Tutoring which is symbolized by X , and dependent variable refers to students' reading
comprehension which is symbolized by Y. the research design can be presented in the table below (Cresswell, 2008:313):

Table III. 1
Research Design

| Group | Pre-test | Treatment | Post-test |
| :--- | :--- | :--- | :--- |
| Experimental | $\mathrm{O}_{1}$ | $\mathbf{X}$ | $\mathbf{O}_{2}$ |
| Control | $\mathrm{O}_{3}$ | - | $\mathbf{O}_{4}$ |

Where:
O1 = Pre-test for Experimental Class.
$\mathbf{0 2}$ = Post-test for experimental Class.
$\mathbf{0 3}$ = Pre-test for Control Class.
O4 = Post-test for Control Class.
$\mathbf{X}=$ Treatment by using Classwide Peer Tutoring.

## B. Location and the time of the Research

The research was conducted at State Senior High School 1 Tualang that was located at Perawang, Siak Regency. The research was conducted from February to Maret 2017.

## C. Subject and Object of the Research

The subject of the research was the first year students at State Senior High School 1 Tualang, and the object of this research was using Classwide Peer Tutoring technique toward students' reading comprehension in narrative text of the first year students at State Senior High School 1 Tualang.

## D. The Population an Sample of the Research

The population of this research was all the first year students of State Senior High School 1 Tualang. There were nine classes which consisted X IPA 1, X IPA 2, X IPA 3, X IPA 4, X IPA 5, X IPA 6, X IPA 7, X IPS 1, X IPS 2. The total number of population is 302 students.

Table III. 2
The Population of the Tenth Grade
Students of State Senior High School 1 Tualang

| No | Classes | Population |
| :---: | :--- | :---: |
| 1 | X IPA 1 | 35 Students |
| 2 | X IPA 2 | 31 Students |
| 3 | X IPA 3 | 33 Students |
| 4 | X IPA 4 | 33 Students |
| 5 | X IPA 5 | 36 Students |
| 6 | X IPA 6 | 32 Students |
| 7 | X IPA 7 | 34 Students |
| 8 | X IPS 1 | 31 Students |
| 9 | X IPS 2 | 37 Students |
| Total |  | 302 Students |

Source: Curriculum section of State Senior High School 1 Tualang
The writer took two classes as sample by using cluster sampling. According to Gay \& Airasian (2002, p.129), cluster sampling selects based on group not individually, all the members of selected group have similar characteristics. The writer was used class X IPA 4 which consist 33 students and X IPA 3 which consist 33 students as the sample. Class X IPA 4 was be experimental class, and class X IPA 3 was be control class. So, the total number of sample is 66 students.

Table III. 3
The Sample of the Research

| No | Class | Male | Female | Total |
| :---: | :---: | :---: | :---: | :---: |
| 1 | X IPA 4 | 15 Students | 18 Students | 33 Students |
| 2 | X IPA 3 | 16 Students | 17 Students | 33 Students |
| TOTAL |  |  |  | 66 Students |

## E. The Technique of Collecting the Data

Collecting data is the most crucial thing in a research. In this research, the writer was used test in collecting the data. The researcher was given treatment four meeting and two meetings for collecting the data. The treatment was about teaching reading comprehension by using Classwide Peer Tutoring and the instrument was be teat. The type of test was multiple choices that consist of twenty items. It was divided into two types-pre-test and post-test. Pre-test and post-test was given to both of class.

1. Pre-test

The test was written test and the type is multiple choice. There are four indicators of reading comprehension; each indicator was represented by five questions, so the total number of the test was twenty items. This test was given to both of the class-control and experiment class-before each class were given the treatment.
2. Post-test

The test was written test and the type is multiple choice. There are four indicators of reading comprehension; each indicator is represented by five
questions, so the total number of the test is twenty items. This test was given to both of the class-control and experiment class after each class was given the treatment. For further information about the instruction of the text, the writer shows the blueprint of both tests as follows:

## Table III. 4

The Blueprint of the Test

| Number | Indicator of items | Number of <br> Questions |
| :---: | :--- | :--- |
| 1 | The students can identify the social <br> function in narrative text. | $1,5,9,13,17$ |
| 2 | The students can identify generic <br> structure in narrative text. | $2,6,10,14,18$ |
| 3 | The students can identify the <br> language feature in narrative text. | $3,7,11,15,19$ |
| 4 | The students can identify general or <br> specific information in narrative <br> text. | $4,8,12,16,20$ |

After the students did the test, then the researcher took the total score from the result of the reading comprehension test. Based on Arikunto (2009:245), the interpretation of students score is classified follow:

Table III. 5
The Classification of Students Score

| The Level Score | Category |
| :---: | :---: |
| $81-100$ | Very Good |
| $61-80$ | Good |
| $41-60$ | Enough |
| $21-40$ | Poor |
| $0-20$ | Fail |

## F. The validity and Reliability of the test

## 1. Validity of the test

Validity is the extent to which inferences made from assessment result are appropriate, meaningful, and useful in terms on the purpose of the assessment (Brown, 2003, p 3). A validity of the test is achieved if the test really measures the test takers' ability. It Furthermore, Hughes (2005, p.26) stated that a test is said to be valid if it measures accurately what it is intended to measure. According to Brown (2003:22) validity is the most complex criterion of an effective test, and arguably the most important principle, the extent to which inferences made from assessment result are appropriate, meaningful, and useful in terms of the purpose of the assessment. It means that, to assess student ability need the validity.

Validity of a test is the extent to which it measures what it is supposed to measure and nothing else. In the other word validity test is use to determine can the test implemented or not. Based on the test result is collected from respondent the writer test the question to find out the question valid or not with validity construct by using SPSS. The criteria of validity test can be seen as follows:
a. If rxy>r table mean that instrument or item the question is valid
b. If rxy, $<\mathrm{r}$ table mean that instrument or item the question is not valid

Before the test given to the sample of this research, the writer 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 means that the instrument of the research is called valid if the instrument has been examined from the experience such as tryout. It was determined by finding the difficulty level of each item.

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

The Students' ability to identify the social function in narrative text

| Variable | Identifying the social function |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 5 | 9 | 13 | 17 |  |
| Correct | 12 | 17 | 16 | 14 | 17 | 30 |
| P | 0.40 | 0.57 | 0.53 | 0.47 | 0.57 |  |
| Q | 0.60 | 0.43 | 0.47 | 0.53 | 0.43 |  |

Based on the table III.6, the proportion of correct answer for item number 1 shows the proportion of correct 0.40 , item number 5 shows the proportion of correct 0.57 , item number 9 shows the proportion of correct 0.53 , item number 13 shows the proportion of correct 0.47 , item number 17
shows the proportion of correct 0.57 , 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 finding the social function are accepted.

Table III. 7
The Students' ability to identify the generic structure in narrative text

| Variable | Identifying the generic structure |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 6 | 10 | 14 | 18 |  |
| Correct | 18 | 17 | 20 | 15 | 16 | 30 |
| P | 0.60 | 0.57 | 0.67 | 0.50 | 0.53 |  |
| Q | 0.40 | 0.43 | 0.33 | 0.50 | 0.47 |  |

Based on the table III.7, the proportion of correct answer for item number 2 shows the proportion of correct 0.60 , item number 6 shows the proportion of correct 0.57 , item number 10 shows the proportion of correct 0.67 , item number 14 shows the proportion of correct 0.50 , item number 18 shows the proportion of correct 0.53 , 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 finding the generic structure are accepted.

Table III. 8
The Students' ability to identify the language feature in narrative text

| Variable | Identifying the generic structure |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 7 | 11 | 15 | 19 |  |
| Correct | 19 | 18 | 15 | 17 | 18 | 30 |
| P | 0.63 | 0.60 | 0.50 | 0.57 | 0.60 |  |
| Q | 0.37 | 0.40 | 0.50 | 0.43 | 0.40 |  |

Based on the table III.8, the proportion of correct answer for item number 3 shows the proportion of correct 0.63 , item number 7 shows the proportion of correct 0.60 , item number 11 shows the proportion of correct 0.50 , item number 15 shows the proportion of correct 0.57 , 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 difficulty level of each item number for finding the generic structure are accepted.

Table III. 9
The Students' ability to identify general or specific information in narrative text

| Variable | Identifying the generic structure |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 4 | 8 | 12 | 16 | 20 |  |
| Correct | 18 | 16 | 14 | 16 | 16 | 30 |
| P | 0.60 | 0.53 | 0.47 | 0.53 | 0.53 |  |
| Q | 0.40 | 0.47 | 0.53 | 0.47 | 0.47 |  |

Based on the table III.9, the proportion of correct answer for item number 4 shows the proportion of correct 0.60 , item number 8 shows the proportion of correct 0.53 , item number 12 shows the proportion of correct 0.47 , item number 16 shows the proportion of correct 0.53 , item number 20 shows the proportion of correct 0.53 , 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 finding the general or specific information are accepted.

Table III. 10
Validity test

| Question no | Score | Result |
| :---: | :---: | :---: |
| 1 | 0.40 | Valid |
| 2 | 0.60 | Valid |
| 3 | 0.63 | Valid |
| 4 | 0.60 | Valid |
| 5 | 0.57 | Valid |
| 6 | 0.57 | Valid |
| 7 | 0.60 | Valid |
| 8 | 0.53 | Valid |
| 9 | 0.53 | Valid |
| 10 | 0.67 | Valid |
| 11 | 0.50 | Valid |
| 12 | 0.47 | Valid |
| 13 | 0.47 | Valid |
| 14 | 0.50 | Valid |
| 15 | 0.57 | Valid |
| 16 | 0.53 | Valid |
| 17 | 0.57 | Valid |
| 18 | 0.53 | Valid |
| 19 | 0.60 | Valid |
| 20 | 0.53 | Valid |

## 2. Reliability of the test

According to H. Douglas Brown (2003:19), that reliability has to do with accuracy of measurement. Reliability is also a crucial component in a test. Reliability in quantitative research is essentially a synonym for dependability, consistency and replicability over time, over instruments and over groups of respondent (Cohen, 2007:146). As a result, a test will not be valuable if it is not consistent and produced different results every time.

The standard reliability was considered as follows (Heaton, 1980:159):
$0.00-0.20=$ Reliability low
$0.21-0.40=$ Reliability sufficient
$0.41-0.70=$ Reliability high
0.70-1.00 = Reliability very high

To obtain the reliability of the test given, the writer used SPSS 22.0 to find out whether the test is reliable or not.

## Table III. 11 <br> Reliability Statistics



In sum, the reliability of test was 1.000 the reliability of the test was categorized into very high level. It means that the instrument was reliable.

## G. The Normality and Homogeneity Test

## 1. The Normality of the Test

In order to know whether the data has normal distribution or not, the researcher used Kolmogorof-Smirnov method as the formula to analyze the data. In this research, the researcher analyzed the data by using SPSS (Statistical Product and Service Solutions) 22.0 version program. The SPSS result for Kolmogorov-Smirnov Z test would be interpreted as follows: $p$-value (Sig.) $>0.05=$ the data is in normal distribution
$p$-value $($ Sig. $)<0.05=$ the data is not in normal distribution
The result of normality of post test score in experiment and control class was computed by using SPSS version 22.0. It was presented in the following table:

Table III. 12
Tests of Normality

| 0 | group | Kolmogorov-Smirnov ${ }^{\text {a }}$ |  |  | Shapiro-Wilk |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Statistic | df | Sig. | Statistic | df | Sig. |
| score | experiment | . 150 | 33 | . 058 | . 924 | 33 | . 023 |
|  | control | . 139 | 33 | . 107 | . 959 | 33 | . 247 |

a. Lilliefors Significance Correction

Based on the data above at significance kolmogorof-smirnov is 0.058 and 0.107 . The probability was higher than 0.05 . It means that the population has normal distribution or Ho was accepted.

## 2. The Homogeneity of the test

The homogeneity test used to measure whether the data are correlated from true population or not. Data homogeneity of variance test was calculated by using SPSS version 22.0. The SPSS result for Levene test was interpreted as follows:
$p$-value (Sig.) $>0.05=$ the data is homogeneous
$p$-value (Sig.) $<0.05=$ the data is not homogeneous
The result of homogeneity test of post-test data or Levene test which was computed by using SPSS version 22 presented in the following table:

Table III. 13
Test of Homogeneity of Variances
Test of Homogeneity of Variances
group

| Levene Statistic | df1 | df2 | Sig. |
| ---: | :---: | ---: | :---: |
| 2.257 |  | 1 | 61 |

To find out the homogeneity of the test, the writer used SPSS 22. Referring to the table above, it could be seen that sig is $0.138>0.05(5 \%)$. In conclusion the data of test was homogenous.

## H. Technique of Data Analysis

In this research, the writer will statistically analyze the data by using SPSS 22.0 version. First, the writer will analyze the data by using independent sample t-test to know whether the result of the research is statistically significant or not. According Julie Pallant (2001:184) the results presented in the analysis of the above independent sample $t$-test will obtain we choose two sets of score which will be unlikely to occur by chance, because it does not tell the magnitude of the intervention's effect.

The data of the research will be analyzed by using T-test formula. Ttest is obtained by considering the degree of freedom $(d f)=(\mathrm{N} 1+\mathrm{N} 2)-2$. Therefore, in calculating the effect size for independent sample $t$-test, the writer uses the following formula:

$$
\begin{aligned}
& \text { Eta Square }\left(\boldsymbol{\eta}^{2}\right) \\
& \eta^{2}=\frac{t^{2}}{t^{2}+\left(n_{1}+n_{2}-2\right)}
\end{aligned}
$$

Where:
$t=$ the value will be found
$\mathrm{N}=$ number of students
In order to interprete the eta squared values, the guideline quoted from Cohen (1988) in Julie Pallant (2001:184) can be read as follows:

Table III. 14
Interpretation of Eta Squared for Effect Size

| No. | Value | Effect |
| :---: | :---: | :---: |
| 1. | 0.01 | Small Effect |
| 2. | 0.06 | Moderate Effect |
| 3. | 0.14 | Large Effect |
| * Adabted from Cohen (1988) |  |  |

Statistically the hypotheses are:
Ha $=$ to $>$ t-table
Ho $=$ to $<$ t-table
Criteria for hypothesis:
a. $H_{a}$ is accepted if $t_{o}>t_{\text {table }}$ or there was significant effect of using Classwide Peer tutoring technique on students' comprehension in reading narrative text at State Senior High School 1 Tualang.
b. $H_{0}$ is accepted if $t_{0}<t$ table or there was no significant effect of using Classwide Peer tutoring technique on students' comprehension in reading narrative text at State Senior High School 1 Tualang.

