CHAPTER III

RESEARCH METHODOLOGY

III.1. Research Design

In this research, there were three variables. The first variable was Choral Reading Method as variable 'X' the second and the third variables were students' reading comprehension and vocabulary mastery as (Y_1 and Y_2), they could be represented as follow:

The design of this research was an experimental research. According to Gay, Mills and Airasian (2012:250), an experimental research was the only type of research that can test hypotheses to establish cause effect relations. The design of this research was using quasi experimental design which was focused on the non-equivalent control group. In conducting this research, two classes of the second year students were involved. The first class was an experimental class and the second class was a control class. The experimental class was the class using Choral Reading Method and the control class was not using Choral Reading Method.

According to Creswell (2009:161) this design was a popular approach to quasi experiments, the experimental group A and the control group B were selected without random assignment. Both groups took a pre-test and post-test. Only the experimental group received a treatment.

Group A O_1 ——— X ——— O_2

Group B O_3 ——————— O_4

In which:

O_1 and O_3 = Pre-Test

O_2 and O_4 = Post Test

X = Treatment by using Choral Reading Method

One class was an experimental group and the other one was a control group. The observations were not twice. Before and after the treatment 'X' in the box above was a treatment (this case by using Choral Reading Method). O_2 and O_3 were the observations before the treatment or usually known as post-test. The difference between O_1 and O_2 (O_2- O_3) and the difference between O_3 and O_4 (O_4-O_3) were assumed as the effect of the treatment.

III.2. Location and Time of the Research

This research was conducted at Islamic Junior High School Technology located in Pekanbaru. This research was conducted during two months. It was from February until March 2017.

III.3. Subject and Object of the Research

The subject of this research was the students of the second year Islamic Junior High School Technology Pekanbaru, and the object of this research was the effects of choral reading method on students' reading comprehension and their vocabulary mastery.

III.4. Population and Sample

III.4.1. Population

The population of this research was the grade VIII students of Islamic Junior High School Technology Pekanbaru in the Academic year 2016/2017 that consisted of 5 parallel classes. The total number of students was 102 students. The composition of the five grades can be described at the following table:

Table III.1
Population of the research

NO	Class	Number Of Students
1	VIII.A	20
2	VIII.B	20
3	VIII.C	21
4	VIII.D	20
5	VIII.E	21
Total	**Five Classes**	**102**

III.4.2. Sample

According to Gay, Mills and Airasian (2012:129) sample was a group of individuals, items, or events that represents the characteristics of the larger group from which the sample is drawn. Testing a sample, especially in a quantitative study can allow the researcher to make inferences about the performance of the larger group. Total sample of this research are 38 students which were divided into two classes, class A and B. Class VIII.A composed 20 students were considered as the experiment class, while class VIII.B, also composed 20 students was the control group.

The technique used in this research was a cluster sampling. Gay (2000:129) states that cluster sampling randomly selects the groups, not individuals. All the members of selected groups have similar characteristics.

Table III.2
Sample of the research

No.	Class	Number
1.	VIII A	20
2.	VIII B	20
Total		40

III.5. Research Instrument

In this research, reading test was administered as the instrument of this study. The pre-test and post- test was administered to two classes which consist of VIII A and VIII B. The pre-test was administered before the treatment and the post-test aims at finding out the students' reading comprehension after treatment. In the treatments were given by teaching with Choral Reading Method. This activity also intended to find out whether the students' skill kept holding of the material after doing the treatment.

To collect the data, the following instruments were used:

1. Test.

   Brown (2003:44) states that the test is a design to measure capacity or general ability to learn foreign language, and ultimate success in the undertaking. The test was used to determine the students' reading comprehension and stundents' vocabulary. The type of the test was a multiple choice as many as 25 questions.

2. Observation

Observation was used to evaluate teaching and learning process activity using an observation sheet. The observation sheet consisted of the teacher's activities in teaching process, whether or not the teacher applied appropriate activities using the intended teaching strategy.

III.6. Validity and Reliability Test

III.6.1. Validity of Instrument

Before the test was given to the sample, the test was first tried out towards the students of the eighth grade of Islamic Junior High School Technology Pekanbaru. The purpose of the try out was to find out validity and reliability of the test. Validity was the most important characteristics of a test whether the test measures what is intended to be measured. Brown (2001:387) explains that validity is the degree to which the test actually measures what it is intended to measure.

III.6.1.1. Validity of Reading Test

To find out the validity of a test, the researcher analyzed the scores of writing test by looking at the corrected item-total correlation (correlation between score item and score total item $r^{-}_{observed}$) in table item total statistics.

To determine whether the test was valid or not, the value $r_{observed}$ was compared with r_{table}. The number of item was 20.

If the value of $r_{observed} > r_{table}$ = valid

If the value of $r_{observed} < r_{table}$ = invalid

Table III.3
Validity Statistic

Case Processing Summary			
		N	%
Cases	Valid	20	100.0
	Exluded[a]	0	0
	Total	20	100.0

Table III.4
Item Total Statistic Reading Test

Number of Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation (Validity)	r table df = 20-2	Results
1	19,95000	123,839	,847	0.444	Valid
2	20,00000	125,158	,739	0.444	Valid
3	20,00000	123,684	,876	0.444	Valid
4	**19,60000**	**131,305**	**,240**	**0.444**	**Invalid**
5	**20,10000**	**129,674**	**,358**	**0.444**	**Invalid**
6	19,90000	123,884	,839	0.444	Valid
7	19,85000	125,292	,715	0.444	Valid
8	20,00000	123,684	,876	0.444	Valid
9	**19,65000**	**129,503**	**,398**	**0.444**	**Invalid**
10	**19,45000**	**132,050**	**,316**	**0.444**	**Invalid**
11	19,90000	125,568	,687	0.444	Valid
12	**19,55000**	**134,261**	**-,079**	**0.444**	**Invalid**
13	**19,65000**	**132,239**	**,126**	**0.444**	**Invalid**
14	**19,65000**	**133,608**	**-,008**	**0.444**	**Invalid**
15	20,00000	124,842	,768	0.444	Valid
16	20,00000	125,053	,749	0.444	Valid
17	19,75000	124,618	,812	0.444	Valid
18	19,90000	127,147	,546	0.444	Valid

Number of Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation (Validity)	r table df = 20-2	Results
19	19,75000	124,618	,812	0.444	Valid
20	19,75000	124,618	,812	0.444	Valid
21	19,95000	123,839	,847	0.444	Valid
22	19,90000	125,674	,677	0.444	Valid
23	19,75000	126,092	,673	0.444	Valid
24	19,95000	123,839	,847	0.444	Valid
25	19,75000	124,618	,812	0.444	Valid
26	19,75000	124,618	,812	0.444	Valid
27	19,90000	125,147	,725	0.444	Valid
28	19,70000	126,116	,700	0.444	Valid
29	19,75000	124,618	,812	0.444	Valid
30	19,70000	126,326	,679	0.444	Valid
31	19,90000	125,568	,687	0.444	Valid
32	19,75000	124,618	,812	0.444	Valid
33	19,75000	124,618	,812	0.444	Valid
34	19,95000	123,839	,847	0.444	Valid
35	19,75000	126,934	,594	0.444	Valid

Table III.4 presents that there are 7 invalid and do not use in measuring the students' reading comprehension. While there are 28 items are valid and able to use in measuring students' reading comprehension. But in this research the researcher only used 25 items to measure the students' reading comprehension.

III.6.1.2.Validity of Vocabulary Test

To determine whether the test was valid or not, the value $r_{observed}$ was compared with r_{table}.The number of item was 20.

If the value of $r_{observed}>r_{table}$= valid

If the value of $r_{observed}<r_{table}$= invalid

Table III.5
Item Total Statistics of Vocabulary Mastery

Number of Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation (Validity)	r table df = 20-2	Results
1	19,6000	140,253	,828	0.444	Valid
2	19,6000	140,253	,828	0.444	Valid
3	19,8000	139,853	,827	0.444	Valid
4	19,4000	145,726	,478	0.444	Valid
5	20,0000	144,526	,503	0.444	Valid
6	19,8000	139,853	,827	0.444	Valid
7	19,6500	141,082	,733	0.444	Valid
8	19,8000	139,853	,827	0.444	Valid
9	**19,5500**	**146,787**	**,271**	**0.444**	**Invalid**
10	**19,3000**	**148,011**	**,373**	**0.444**	**Invalid**
11	19,8000	139,853	,827	0.444	Valid
12	**19,4500**	**148,366**	**,156**	**0.444**	**Inalid**
13	**19,9000**	**146,411**	**,291**	**0.444**	**Invalid**
14	**19,4500**	**148,366**	**,156**	**0.444**	**Invalid**
15	19,8000	139,853	,827	0.444	Valid
16	19,8000	139,853	,827	0.444	Valid
17	19,6000	140,253	,828	0.444	Valid
18	19,6000	140,253	,828	0.444	Valid

Number of Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation (Validity)	r table df = 20-2	Results
19	19,6000	140,253	,828	0.444	Valid
20	19,6000	140,253	,828	0.444	Valid
21	19,8000	139,853	,827	0.444	Valid
22	19,8000	139,853	,827	0.444	Valid
23	19,6000	140,253	,828	0.444	Valid
24	19,8000	139,853	,827	0.444	Valid
25	19,6000	140,253	,828	0.444	Valid
26	19,6000	140,253	,828	0.444	Valid
27	19,8000	139,853	,827	0.444	Valid
28	19,6000	140,253	,828	0.444	Valid
29	19,8000	139,853	,827	0.444	Valid
30	19,6000	140,253	,828	0.444	Valid
31	19,6000	140,253	,828	0.444	Valid
32	19,6000	140,253	,828	0.444	Valid
33	19,8000	139,853	,827	0.444	Valid
34	19,4000	145,726	,478	0.444	Valid
35	20,0000	144,526	,503	0.444	Valid

Table III.5 describes that there are 5 invalid and do not use in measuring the students' vocabulary mastery. While there are 30 items were valid and able to use in measuring students' vocabulary mastery. But, in this research the researcher only used 25 items to measure the students' vocabulary mastery.

III.6.2. Reliability of the Instrument

In finding reliability of the instrument the following research formula taken from Heaton (1975: 164) is as follows:

$$r_{ii} = \frac{N}{N-1}(1 - \frac{m(N-m)}{N(X)^2}$$

Where : $M = \frac{\Sigma x}{N}$ and $S^2 = \frac{\Sigma x^2 - \frac{(\Sigma x_i)^2}{N}}{N}$

r_{ii}: Reliability of the test

N: The number of items in the test

M: The mean score of all the tests

S^2: The standard deviation of all the test score

Table III.6
Criteria Coefficient of Reliability

CoefisienReliability	Criteria
$0{,}80 \leq r_{11} \leq 1{,}00$	Highest reliability
$0{,}60 \leq r_{11} \leq 0{,}79$	High reliability
$0{,}40 \leq r_{11} \leq 0{,}59$	Middle reliability
$0{,}20 \leq r_{11} \leq 0{,}39$	Low reliability
$0{,}00 \leq r_{11} \leq 0{,}19$	Lowest reliability

III.6.2.1.Reliability of the Reading Test

To determine whether the instrument is reliable or not, the value of Cronbach's alpha must be higher than 0.5. The reliability of reading test is as follows:

Table III.7
Reliability Statistics of Reading Test

Cronbach's Alpha	N of Items
.967	35

Table III.7 presents that the value of Cronbach's alpha in the reading test is 0.967 is bigger than 0.5. It means that the data were reliable and categorized into *Highest Reliability*.

III.6.2.2. Reliability of the Vocabulary Test

The reliability of reading test is presented in the following table:

Table III.8
Reliability Statistics of Vocabulary Test

Cronbach's Alpha	N of Items
.975	22

Table III.8 shows that the value of Cronbach's alpha in anxiety test is 0.975 is bigger than 0.5. It means that the data were reliable and categorized into *Highest Reliability*.

III.7. The Research Procedures

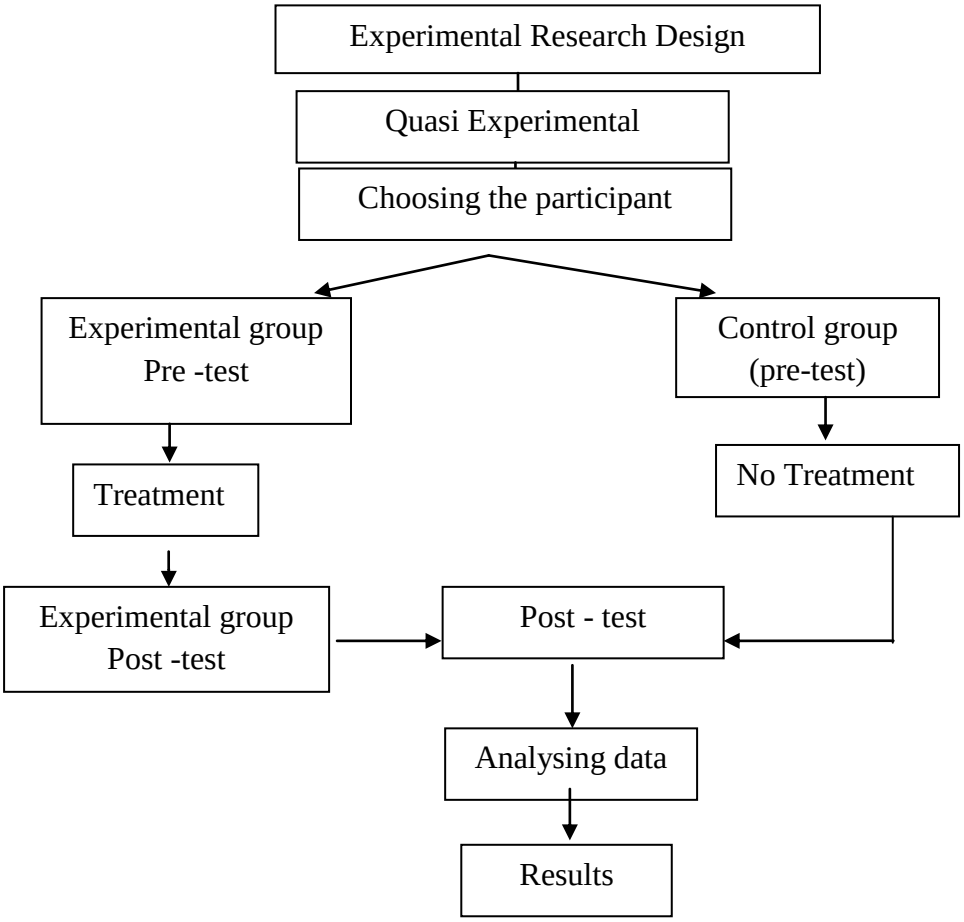

Figure 2. The Research Procedures

III.8. Technique of Collecting Data

As mentioned previously, two instruments were used to gather the data; namely, test and observation. In the reading test and vocabulary test, the teacher asked the students to choose the correct answer from 25 questions. The observation consisted of the indicators of choral reading method that must be applied by the teacher.

III.9. The Technique of Data Analysis

The data were analysed using SPSS (Statistical Package for the Social Sciences). In analyzing the data, a checklist was used on the observation list. The scores of the pre-test and the post-test of the experimental and the control group were analyzed statistically using the following formulas:

1) Independent sample t-test

To find out whether there was a significant difference or there was no significant difference between two or more variables were analysed by using Independent Sample t_{test}. Gay (2000:484) states that the t-test for independent sample is used to determine whether there is probably a significant difference between the means of two independent samples. The formula is:

$$t = \frac{M_X - M_Y}{\sqrt{\frac{(SD_X)^2}{N_1 - 1} - \frac{(SD_Y)^2}{N_2 - 1}}}$$

Where:

t = The value of comparing two means

M_X = Mean of the score in the pre-test

M_Y = Mean of the score in the post-test

SD_X = Standard deviation of the experimental group

SD_Y = Standard deviation of the control group

N_1 = Number of the sample in the pre-test

N_2 = Number of the sample in the post-test

1 = The constant number

To see if there was a significant difference between the mean of the score of both experimental and control groups the value of Sig. 2 tailed was used being hypothesized:

Ho: $p > 0.05$

Ha: $p < 0.05$

H_o was accepted if $p > 0.05$ or there was no effect after giving the treatment using choral reading method on students' reading comprehension and their vocabulary mastery.

Ha was accepted if $p<0.05$ or there was effectiveness after giving the treatment using choral reading method on students' reading comprehension and their vocabulary mastery.

2) Paired Sample t-Test

Paired Sample t-Test is known also as Non-independent sample t-test. Gay (2000: 488) states that t-test for non-independent samples is used to compare groups that are formed by some type of matching or to compare a single group's performance on a pre-test and post-test or on two different treatments.

The pre-test and post-test scores were used in the experimental class in order to investigate the significant effect of using choral reading method on students' reading comprehension of the eighth grade students of Islamic Junior High School Boarding School Technology Pekanbaru. To obtain the data, SPSS 21 was used.

The formula of paired-sample t-test:

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

D: Gain Score (D=X2-X1)

To see if there was a significant difference between the mean of the score of both experimental and control groups, the value of Sig. 2 tailed was used being hypothesized:

Ho: $p > 0.05$

Ha: $p < 0.05$

H_o was accepted if $p > 0.05$ or there was no effect after giving the treatment using choral reading method on students' reading comprehension and their vocabulary mastery.

Ha was accepted if $p < 0.05$ or there was effectiveness after giving the treatment using choral reading method on students' reading comprehension and their vocabulary mastery.

3) Eta Square

As for the effect size of the independent sample t-test, the eta squared was commonly used (Pallant: 2001). Eta squared ranges from 0 to 1 and

represents the proportion of variance in the dependent variables that explains the independent variables. The formula is:

$$\tilde{\omega}2 = \frac{t_2}{t_2 + (n - 1)}$$

Where:

$\tilde{\omega}2$: eta square / the value of effect size

t : t value

N : the number of samples in the experimental class

Here is the category of effect size (Cohen, 2007: 521)

0 – 0,20 = Weak effect

0,21 – 0,50 = Modest effect

0,51 – 1,00 = Moderate effect

> 1,00 = strong effect