

CHAPTER III RESEARCH METHOD

This chapter presents a description of the research methods employed in this study. This includes (1) research design, (2) population and sample, (3) the instrument, (4) data collection, and (5) data analysis.

3.1. Research Design

The research method used in this study is quasi experimental study in which the *pre-test post-test control group design* to fulfill purpose of this study. This is to find out the significant effect of Course Review Horay method in reading comprehension for the seventh grade students at SMP Muhammadiyah 4 Giri.

The design of this study is quasi experiment with non randomized pre-test and post-test. The writer uses quasi experiment with non randomized pre-test and post-test because it is impossible to conduct the true experiment in SMP Muhammadiyah 4 Giri. It is because the classification of the class in SMP Muhammadiyah 4 Giri has been determined by the school. Whereas, true experiment needs to randomize the group. It means that the researcher must change the classification of group, but here, the school did not permit the researcher to change the classification of the group. So, the researcher did not conduct true experiment but quasi experiment.

The researcher carries out the research to know whether the use of CRH in teaching reading comprehension has positive effect on the students' reading ability or not.

In this research, the two groups of the subject are first assigned to the different treatments and control condition which are conducted four times of teaching. This research is designed to describe and to prove the effect of using CRH in reading comprehension.

The design chart can be seen in the figure below:

Group	Pre-test	Treatment	Post-test
Experiment	+	+	+
Control	+	-	+

Table 2. Pre-test Post-test Quasi-Experiment Design.

Where :

+ : with treatment

- : without treatment

From the table above, it can be seen that both of the classes are given pre-test in the beginning of the research. After that, the experiment group is given treatments by using CRH for three times. After the treatments, post-test is given to both groups.

The procedures of the research design is as follows:

1. Giving pre-test to the respondents (subject) to measure reading Comprehension before the treatments,
2. Giving treatment to the respondents that is teaching Reading comprehension by using Course Review Horay (CRH) method.
3. Giving post-test to measure the students reading comprehension achievement after being given the treatment,
4. Finding the mean different between the results of the pre-test and post-test,

5. Analyzing the data using t-test formula to prove the hypothesis,
6. Finding the hypothesis testing: H_0 is received if $t \text{ statistic} > t \text{ table}$.

H_1 is failed if $t \text{ statistic} < t \text{ table}$.

3.2. Population and Sample

McMilan and Schumacher in <http://faculty.ksu.edu.sa> (1993:3) define that population is the group to which the research would like the result of the study to be generalized. McMilan and Schumacher in <http://faculty.ksu.edu.sa> (1993:3) also state that sample is the group of the subjects on which information is obtained. This research carried out at SMP Muhammadiyah 4 Giri in second semester 2013/2014 academic year. This school took to be the object of experiment because it is one of good school at Giri. Another reason is CRH is never applied in this school. That was known by the researcher after she conducted the preliminary observation and interviewed with the English teachers in this school. Some of the students also state that they have problems in reading comprehension because they are lazy to read, they confuse to look the written text. They do not comprehend the main idea of the text.

The population of this study is the seventh grade students of SMP Muhammadiyah 4 Giri in second semester 2013/2014 academic year. The total number of the population is 66 students divided into 2 classes. The researcher takes two classes, class VII A and class VII B as sample of this research. They are grouped into two groups. One is the experimental class and the other is the control class. The experimental group is VII A with 33 students while the control group is class VII B with 33 students, so the total number of students as sample is 66

students. The researcher took class VII A and VII B because the students of both of those classes have low score in the first semester.

3.3. The Instrument

Research instrument is an important role in doing the research. In this study the researcher uses test in collecting the data. There are two tests that are used by the researcher, those are pre-test and post-test. Pre-test will be administered before the researcher conducts the treatment and it is to find out the initial different of the experimental group. And post-test will be administered after the researcher conducts the treatment and gives some exercise the experimental group in a period of time. It is to find out whether the learners make progress in their reading comprehension. The items of pretest and post-test are 40 items of multiple choices. The test can be elaborated as follows:

3.3.1 Pre-test

Pre-test is carried out to find out the initial different between experimental and control groups as they have similar level in Reading comprehension ability. Before receiving the treatment, the test is in form of written test or in the other hand the students must finish the tests which consist of 15-20 items before the student submitted their work to the teacher. Then their work is asses by the teacher based on the criteria given.

The reason why the researcher give 20 item in pretest is the researcher will be easier to score the test and the second reason is the item must be appropriate with time allotment.

3.3.2 Treatment

CRH method is applied in experiment class. Conventional method is applied in control class.

3.3.3 Post-test

Post test is distributed to both groups to find out whether or not the students make progress in their Reading Comprehension ability. In this study, the criteria of test scoring system proposed by Jacobs are used to assess the result of students score. The post test has the same procedure with the pre test. It was administered in the last program of this research after giving some treatment and exercise to the experimental group in a period of time, it is the same with pre test number of item that consist of 20 item.

The researcher used multiple choices items to test the samples. According to Alderson J. C. (2000) in Salim Razi (2005:3) multiple choices might suggest that some method are particularly suitable for the testing of reading, the subjective test can be scored more rapidly and more reliably than either of the other types. Weir (1990) in Salim Razi (2005:3) also states that multiple choice questions are fashionable since marking them is totally objectives. The reading comprehension on test given to the students were 20 items. They were tested in pre-test and post-test, selection of genre text that tests adapted with syllabus of VII grade second semester, were descriptive text.

Genre Text	Pre-test	Post-test
Descriptive Text	Text 1 My Family	Text 1 Kenny
	Text 2 My brother	Text 2 My hamster
	Text 3 Blecky	Text 3 Mr. Johan
	Text 4 Orange	Text 4 Mango
	Text 5 My cat	Text 5 Kitty

Table 3. Distribution of Text

The table above is consider on the theme that had been obtained in pre-test. Actually, in pre-test there are some theme of descriptive text, but here only three themes that accepted by seventh grade students in SMP Muhammadiyah 4 Giri, which include description of people, description of fruit and description of animal.

3.4. Data Collection

There are four steps procedure of data collection in this research: first, validity and reliability test. A good test has some important characteristics, and the two most important ones are validity and reliability. It is stated by Ary (2002) in Muchlisatul Ummi (2013:23) that validity refers to the extent to which an instrument measures what it is intended to measure. Reliability, on the other hand, is the extent to which a measure in terms of content validity and instrument must measure fairly the extent to which attested has learnt what the curriculum is intended to teach them.

3.4.1. Validity of Reading Comprehension Test

Validity test in this research focused on result of reading comprehension test. Validity is the most important in developing and evaluating of measuring instruments Ary (2002) in Muchlisatul Umami (2013:23). Validity test in this research focused on result of reading comprehension test.

Before conducting post test and pretest as instrument of the research, the test should be tried out in terms of its validity and reliability in order to check the validity of the test the researcher did it into two steps. Those were checking content validity and construct validity. To determine the content validity, the researcher asked the English teacher to check the instrument validity and also based on scores criteria. The score of multiple choices, there are 20 items and every correct answer could 1 point, totally 20 point. Whereas to define the construct validity, the researcher used the assistance of SPSS version 16.00 to calculate descriptive statistics the instrument validity was examined by analyzing item was good or not. The researcher used in testing the validity in:

$$r_{-XY} = \frac{N(\sum xy) - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X)^2\}(\sum Y^2 - (\sum y)^2)}}$$

Where:

r_{xy} : the coefficient of correlation X and Y variable or validity of each item.

N : the number of students/subject participating in the test

X : the sum of X scores

Y : the sum of X scores

$\sum Y$: the sum of total score for each student.

$\sum X$: the sum of total score in each item.

$\sum XY$: the sum of multiple score from each student with the total score in each

item

$\sum X^2$: the sum of the square score in each item and,

$\sum Y$: the sum of the total score from each student.

Each item square is determined by using these following categorizations:

<0,3 is difficult

03-07 is medium

0,7-1 is easy

Based on the result of validity (see appendix 8 & 9) of instrument, the researcher determines the validity of item into two steps as follow. First, the researcher see *correlation item-total correlation* column. The item which had the value under 0,3 was considering as bad item, it meant that it had to be rejected. Second, the researcher conducted in *cronbach's alpha* value, the item had to be rejected.

Based on those consideration and interpretation in pre test item, the researcher found that 15 items were valid whereas 5 item were invalid. It meant that 15 items could be used as a research instrument whereas 5 items had to be rejected as research instrument for pre-test (see appendix 8).

In the same case in post-test a researcher found that 15 items were valid and 5 items were invalid. It meant that 15 items could be used as a research instrument whereas 5 items had to be rejected as research instrument for post-test. (see appendix 9).

3.4.2. Reliability of Reading Comprehension Test

The basic concept of reliability of a test is consistency of the test score. Reliability measurement supplied an instrument of how much a variance might expect under different condition. To see the consistency of the test score, the researcher tried the instrument out twice. The reliability of the test is characteristically presented by means of reliability coefficient or the standard error of measurement. To define the reliability of the test in order to find out the stability of the test, the researcher used SPSS 16.00 with formula

$$r_{kk} = \frac{K \cdot S_x^2 - \tilde{x}(k - \tilde{x})}{S_x^2(k - 1)}$$

Where: $S = \frac{\sqrt{\sum F_x}}{n - 1}$

$$F_x = X - \tilde{x}$$

K : total item that accepted

N : total students followed the test

F_x : total of correct answer a student

F : total of student who got the particular score in x

Criterion;

0.0 ≤ r_{kk} < 0.20 is the lowest reliability

0.20 ≤ r_{kk} < 0.40 is the low reliability

0.40 ≤ r_{kk} < 0.60 is the quite reliability

0.60 ≤ r_{kk} < 0.80 is the high reliability

0.80 ≤ r_{kk} < 1.00 is the highest reliability

3.5. Data Analysis

The data analysis carrying out in order to answer the research problems with the data obtain through pretest and posttest. The researcher analyzed the data by using independent sample t-test. Since the sample are small and the groups are independent, the T-test for independent samples is carried out to determine whether the differences between experiment and control group. The researcher uses SPSS 16.00 to calculate descriptive statistics. Descriptive statistics is conducted in order to find the effect of the treatment whether there is positive effect of using CRH on reading comprehension ability.

Assumptions for the independent t-test are: (1) Independence: observation within each sample must be independent (they do not influence each other), (2) Normal Distribution: the scores in each populaltion must be normally distributed and (3) Homogeneity of variance: the two populations must have equal variances (the degree to which the distributions are spread out is approximately equal). The steps of analyzing the result are:

Arikunto in Rini Widi Astutik (2013:33) classified the data analysis method into three part as follows: Preparation, Tabulation and Making Conclusion. The data analysis method used in this research is t-test. T-test is used to analyze the data and to compare the mean difference of the pre-test and post-test and this research wants to know the effect of Course Review Horay (CRH) on reading comprehension of the seventh grade students of SMP Muhammadiyah 4 Giri in the academic year 2013/2014.

3.5.1 Normality Distribution Test

In this study, Kolmogorov Smirnov Sample Test in SPSS version 16.00 is used to analyze the normal distribution. It is aimed to find whether or not the

distributions of pre-test score in the two groups are normally distributed. In this case, the result of the normality the distribution is also used to find out whether or not the hypothesis that had been determined is accepted.

The first step in calculating the normality distribution test state that the hypothesis: H0: the score of the experimental and the control group are normally distributed. The second step in calculating the normality distribution test tried to compare the Asymp. Sign. (Probability) with the level of significance for testing the hypothesis. If the Asymp is more than the level of significance (0,05) the null hypothesis is accepted; the score are normally distributed.

The Procedure Analyze is you can press Menu, choose Nonparametric test after that you choose 1 – sample K-S.

3.5.2. Homogeneity Test of Variance

The analysis of variance, assume that variances are equal across groups or samples. For homogeneity test, the researcher uses Levene's *test of homogeneity in SPSS 16.0 version. The test of Levine's test, or P, defines as follow:*

$$P = \frac{(N - k) \sum_{i=1}^k N_i (Z_i - Z_{...})^2}{(k - 1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Z_{ij} - Z_i)^2}$$

Where:

P : is the result of the test,

K : is the number of different groups to which the samples belong,

N : is the total number of samples,

N_i : is the number of samples in the i^{th} group,

Y_{ij} : is the value of the j^{th} sample from the i^{th} group,

$$Z_{ij} = \begin{cases} |Y_{ij} - \bar{Y}_i|, \bar{Y}_i \text{ is a mean of } i^{\text{th}} \text{ group} \\ |Y_{ij} - \tilde{Y}_i|, \tilde{Y}_i \text{ is median of } i^{\text{th}} \text{ group} \end{cases}$$

The significance of P is tested against $F(\alpha, k - 1, N - k)$ where F is a quintile of the F test distribution, with $k - 1$ and $N - k$ its degrees of freedom, and α is the chosen level of significance (0.05).

To analyze the homogeneity, the researcher used SPSS (Statistical product and service solutions) version 16.00. The homogeneity assumption was checked in SPSS by Levene's test with the following procedures. The first procedure was inserting the pre test data both experimental and control groups using the data view. The second procedures were going to the analyze menu, selecting compare means, and the choosing independents sample t-test. The last procedure was interpreting the homogeneity test output, the researcher needed to see Lavene's test Column to know whether the equality of variances in the groups of scores were homogeny or not.

3.5.3. Hypothesis Testing

Independent t-test was used to finds out the significant differences between experimental and control groups. Here were steps of t-test calculation:

The first step was starting the hypothesis and setting the alpha level at 0.05 (2 tailed test). In this researcher, the hypothesis used was a null hypothesis that said, "There is no significant difference on the effect of Course Review Horay

(CRH) method in reading comprehension between Experimental and control group.

The hypothesis can be formulated as follow:

H1 (null hypothesis) is $\mu_1 - \mu_2 = 0$ ($\mu_1 = \mu_2$)

Alternatives hypothesis $\mu_1 - \mu_2 \neq 0$ ($\mu_1 \neq \mu_2$)

H1 : Reading comprehension using Course Review Horay method.

H2 : Reading comprehension without using Course Review Horay method.

Hypothesis testing in this research was:

H0 : There is no significant difference on the effect of Course Review Horay method in reading comprehension between experimental and control group.

H1 : There is significant difference on the effect of Course Review Horay method in reading comprehension between experimental and control group.

The seconds step was finding t-value using independent t-test formula and comparing the probability with the level of significance for testing the hypothesis. Determining t-critical in table t-(0.05) df, the researcher compared t-observed and t- critical. If $t_{obs} < t_{critical}$, the researcher should accept the null hypothesis and if $t_{obs} > t_{critical}$, it means the researcher can reject the null hypothesis and another word. The researcher can accept the alternatives hypothesis.

T-test was calculated to find out the comparison of two means between experimental and control group pre and post test. In analyzing the data, the

researcher used independent t-test formula. The formula used in calculating t-test is:

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{S_{\bar{x}_1 - \bar{x}_2}}$$

Where:

$$S_{\bar{x}_1 - \bar{x}_2} = \sqrt{\frac{S^2_{pooled}}{n_1} + \frac{S^2_{pooled}}{n_2}}$$

Pooled variance: the average of the two sample variances, allowing the larger sample to weight more heavily.

Formula:

$$S^2_{pooled} = \frac{(df_1)s^2_1 + (df_2)s^2_2}{df_1 + df_2} \quad \text{OR} \quad S^2_{pooled} = \frac{SS_1 + SS_2}{df_1 + df_2}$$

df₁=df for 1st sample; n₁-1

df₂=df for 2nd sample; n₂-1

Estimated Standard Error of the Difference

$$S_{\bar{x}_1 - \bar{x}_2} = \sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

Clearly, the results of the tests were subjected to the following statistical procedures. To calculate t-test, the researcher used SPSS (Statistical Product and Service Solutions) version 16.00. The post test of experimental and control groups were analyzed by using SPSS version 16.00 with the following procedures. The first procedure was inserting the post test data of both experimental and control groups using the data view. The second procedure was going to the analyze Menu, selecting compare means, and then choosing independent sample t-test.

The last procedure was interpreting t-test output, automatically it could be answer to the research questions about the comparison between two groups.

In short, the primary data was collected by means of pre-test and post-test to find out the significance on the effect of Course Review Horay method in reading comprehension.