

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) procedure of collecting data, and (5) technique of data analysis.

3.1. Research Design

The research method used in this study is quasi experimental study in which the pretest post test control group designs to fulfill purpose of this study. This is to find out the significant influence of cooperative script method in teaching reading comprehension for the eighth grade students at SMPN 1 Sidayu Gresik.

The design of this study is quasi experiment with non randomized pre-test and post-test. The writer used quasi experiment with non randomized pre-test and post-test because it is impossible to conduct the true experiment in SMPN 1 Sidayu Gresik. It is because the classification of the class in SMPN 1 Sidayu Gresik 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 cooperative script 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 influence of using cooperative script in teaching reading comprehension.

The design chart can be seen in the figure below:

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

Table1. 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. Afterwards, the experiment group is given treatments by using cooperative script for four times. After the treatments, post-test is given to both groups.

Based on the syllabus of the eighth grade in second semester (appendix 3.1.1), reading comprehension of recount and narrative text is provided 4 x 40 minutes. The treatments are given to experiment group for four times. Each treatment consists of 2 x 40 minutes. It means that there is 8 x 40 minutes for

treatments. It is to ensure that cooperative script is really implemented intact in teaching and learning process. The first and second treatment is about recount text. The third and fourth treatment is about narrative text. The schedule of treatments can be seen in the appendix 3.1.2. The material can be seen in lesson plans in appendix 3.1.3.

3.2. Population and Sample

This research is carried out at SMPN 1 Sidayu Gresik in second semester 2012/2013 academic year. This school took to be the object of experiment because it is one of good state Junior High School in Sidayu Gresik. Another reason is cooperative script is never applied in this school. That was known by the researcher after she conducted the preliminary observation and interviewed some of 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 don't comprehend the main idea of reading text.

The population of this study is the students of the eighth grade of SMPN 1 Sidayu Gresik in second semester 2012/2013 academic year. The total number of the population is 185 students divided into 6 classes. The researcher takes two classes of the eighth classes as sample of this research. They are grouped into two groups. One is the experimental class and the other is the control class. The experiment group is VIII F with 30 students while the control group is class VIII E with 30 students, so the total number of students as sample is 60 students. The researcher took class VIII E and VIII F because the students of both of those

classes have the equal characteristics in average score of first semester (see appendix 3.2.1 and appendix 3.2.2).

3.3. The Instrument

The way to get the data in a research activity is usually known as a method of collecting data. In this study, the writer uses test in collecting data. A test means some questions to the students to be answered. It also means a systematic procedure for observing one's behavior and describing it with the aid of numerical devices or category system. Longman dictionary (1978:1145) also states the definition: "A test is a number of questions to measure someone's skill, cleverness, or knowledge of a particular subject." Ary (2010:201) also defines that a test is set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned.

The type of the objective test chosen by the writer was multiple-choice items. According to Alderson in Elistiowaty (2011:31) multiple-choice might suggest that some method are particularly suitable for the testing of reading, the objectives tests can be scored more rapidly and more reliably than either of the other types. The reading comprehension tests were given to the students were 20 items. They were tested in pretest and post-test, selection of genre text that tests adapted with syllabus of VIII grade second semester, were narrative text and recount text, which included; 1) Identify the general idea of the text, 2) identify the main idea of the text, 3) find the explicit information of the text, 4) find the implicit information of the text, 5) find the meaning of the certain word from the text. The pretest is in appendix 3.3.1 and post-testis in appendix 3.3.2.

Level of Reading Comprehension	Focus item	Question number	
		Pre-test	Post-test
Literal	Find the explicit information of the text	2, 9, 12, 15	1, 7, 13, 14
Inferential	Identify the Generic Structure of the text	1, 4, 10, 11	10, 11, 16,20
	Identify the general idea of the text	8, 14, 17, 20	2, 4, 8, 17
	Find the implicit information of the text	3, 5, 7, 19	6, 12, 15,19
	Find the meaning of the certain word from the text	6, 13, 16, 18	3, 5, 9, 18

Table2. Distribution of question

Genre Text	Pre-test	Post-test
Recount Text	Text 3. My Bald Head Text 5. Holiday Voucher Text 6. Plane Turbulence	Text 1. The Lady in Red Text 4. Hot Day Yesterday Text 5. Playing Hide and Seek
Narrative Text	Text 1. Junha' Wonder Text 2. The Frogs Text 4. The Smartest Animal	Text 2. The Ant and the Dove Text 3. The Ugly Duckling Text 6. The Farmer and the Donkey

Table3. Distribution of text

3.4. Procedure of Collecting Data

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 (2010:201) 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 is the most important consideration in developing and evaluating measuring instruments, Ary (2010:225). Validity test in this research focused on result of reading comprehension test; the researcher used judgment technique test, with aspects considered are: a) the quality of reading comprehension of learning objectives, b) the content of items, c) the relationship of item and option, and d) homogeneity of option. Based on try out that already held, the validity of instrument (pre-test and post-test) stated valid in content with some improvements. Descriptive of instrument can be seen in table2 and table3. It is about distribution of questions and genre texts that appropriate with reading material in syllabus the eighth grade at second semester.

3.4.2. Reliability of Reading Comprehension Test

Item reliability is the correlation between subjects' response to particular items and their total test score. In calculated item reliability the researcher uses SPSS version 16 to help her with formula:

$$\alpha = \left(\frac{K}{K - 1} \right) \left(\frac{S_{x^2} - \sum S_t^2}{S_{x^2}} \right)$$

Where:

K : number of items on the test

$\sum S_i^2$: sum of variances of the item scores

S_x^2 : variances of the test scores (all K items)

In selecting items the researcher had two ways. First, considered removing questions if the correlation coefficient was less than 0.3. Second considered Cronbach's Alpha value; if an Alpha if item deleted listed here was higher than the overall Alpha value, it should consider deleting the question.

The analysis result of the reading comprehension tryout as follows (see appendix 3.4.2.1 and 3.4.2.2); the tried out was done by the researcher in VIII A of SMPN 1 Sidayu before the researcher gives pre-test. the tryout of reading comprehension tests for pre-test and post-test which consists of 30 items. After tried out the items, the researcher analyzed the validity of pre-test and post-test items. The result showed that for the items of pre-test there were 20 valid out of 30 items of the test and for the items of post-test there were 23 valid of 30 items of the test. At last, the researcher used 20 items for testing students' reading comprehension in pre-test and post-test.

There were 20 valid out of 30 items. The analysis of reliability of pre-test and pos-test showed that the coefficient of reliability was 0.841 for pre-test and 0.883 for post-test. Because the reliability of pre-test and post-test was 0.841 and 0.883, the instrument was reliable.

Second, the researcher selected the subject and divided group who was taught by using cooperative script as experiment group and group who was taught without cooperative script as control group. The researcher gave pretest before treatment to both of groups as first data; the purpose of pretest score was to know the similarity is confirmed by similar group means.

Third, after pretest was given, the treatment for both experiment group and control group were started. Each group was gotten different teaching models. Only the experiment group was exposed to the experimental treatment. The researcher gave 4 (four) times treatments with a time allocation 2 x 40 minutes to experiment group.

Fourth, after the treatment was over, all students of both groups were measured on post-test. The score of experimental and control group are recorded and analyzed by using some statistical calculations for the data analysis. Finally, from the results of those statistical calculations, interpretations, and conclusions are made.

3.5. Technique of Data Analysis

The data analysis carries 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 to compute descriptive statistics. Descriptive statistics is conducted

in order to find the effect of the treatment whether there is positive effect of using cooperative script 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 population 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:

3.5.1. Homogeneity Test of Variance

The analysis of variance, assume that variances are equal across groups or samples. For homogeneity test, the researcher uses Leven's test of homogeneity in SPSS 16 version. There is procedure to calculating homogeneity test of variance. First, open SPSS 16. After opening SPSS 16, click variable view to type the "pretest" in first row and "group" in second row. Change "values" in the "group" rows by typing "1" in the "value" and "experiment" in the "label". Click "add" and type "2" in "value" and "control" in "label", click "add" again. Then, click data view and type all the pre-test scores in first column and the group in second column ("1" for experiment group and "2" for control group). Then choose analyze, compare means, independent sample t-test, move pretest into test variable(s) and group into grouping variable. And type "1" for group 1, "2" for group 2 in define groups, then continue, then choose option, type 95 in confidence interval and continue. The last is OK.

The test statistic of Leven's test, P , is defined as follows:

$$P = \frac{(N - K) \sum_{I=1}^K N_i (z_I - z_{\sim})^2}{(K - 1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Z_{ij} - Z_i)^2}$$

Where:

P : the result of the pre-test,

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

N : the total number of samples,

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

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

Z_{ij} : $\left\{ \begin{array}{l} I Y_{ij} - \bar{Y}_i, I, \bar{Y}_i. \text{ is a mean of } i^{\text{th}} \text{ group} \\ I Y_{ij} - \bar{Y}_i, I, \bar{Y}_i. \text{ is a median of } i^{\text{th}} \text{ group} \end{array} \right\}$

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

3.5.2. Hypothesis Testing

Hypothesis testing procedures that used separate samples for each treatment condition (between subjects design). Here, the researcher uses independent sample t-test in SPSS 16. The researcher compares the mean score of post-test of both of groups. The procedure of compare mean by using SPSS is same as above. To determine the significant, it will be seen the value of sig.(2-tailed).

Hypothesis testing has three steps to analyze the data, are:

Step 1: State the Hypothesis

H0 : $\mu_1 - \mu_2 = 0$ ($\mu_1 = \mu_2$)

H1 : $\mu_1 - \mu_2 \neq 0$ ($\mu_1 \neq \mu_2$)

Step 2: Set the criterion

The researcher uses independent sample t-test with significant $\alpha = 0.05$ to interpret t-test and degree of freedom (df) for the independent statistic is $n_1 + n_2 - 2$ or $df_1 + df_2$.

Step 3: Compute the t-statistic

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

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:
$$S^2_{pooled} = \frac{(df_1)S_1^2 + (df_2)S_2^2}{df_1 + df_2}$$

Or

$$S^2_{pooled} = \frac{SS_1 + SS_2}{df_1 + df_2}$$

df1 : df for 1st sample; $n_1 - 1$

df2 : df for 2nd sample; $n_2 - 1$

Estimated standard error of the difference

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