CHAPTER III

RESEARCH METHOD

This chapter elaborates the research methodology which has been briefly introduced in chapter one. In detail, this chapter involves research method, variables, subject, research instrument, research procedure and analysis data.

3.1 Research Method

Research is defined as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalizations, principles, or theories, resulting in prediction and possibly ultimate control of events (Best and Kahn, 1989:17). This research is conducted to find out the significance of pre-reading activity in improving students' reading comprehension. To get an empirical data, the researcher employed quantitative method.

3.1.1 Research Design

The researcher employed the pretest-posttest nonequivalent-groups design which is the subset of quasi experimental design. Quasi experimental design is an experimental frequently used when it is not practicable for the researcher to use random assignment. (Best and Kahn, 1989:124).

The researcher determined to use this design because of the reason that the subjects of the research randomly selected based on the classification made by the school.

The representation of the pretest-posttest nonequivalent-groups design is below:

G1   T1   X   T2

G2   T1   T2

Where: G1 = Experimental group

G2 = Control group

T1 = Pretest

T2 = Posttest

X = Some treatments

3.1.2 Variables

According to Best and Kahn (1989: 114) variables are the manipulated, controlled, or observed conditions or characteristics done by the researcher. There are two variables in the research, independent variable and dependent variable. Best and Kahn (1989: 114) state that the independent variable is condition or characteristic that the researcher manipulates or controls with the purpose to ascertain its relationship with phenomena that the researcher observes while the dependent variable is the condition or characteristic that appear, disappear, or change because the researcher introduces, removes, or changes the independent variable.

The independent variable investigated in this research was pre-reading strategy, whereas the dependent variable was students' achievement in reading comprehension.

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3.2 Subjects

3.2.1 Population

According to Best and Kahn (1989: 11) population is any group of individuals that have one or more characteristics in common that attract the researcher. The population of this research is the second grade students of SMP NEGERI 12 Bandung which was grouped into eight classes. Each class consists of about 43 students, so the total population is about 344 students.

3.2.2 Sample

Sample is a part of a population selected observation and analysis (Best and Kahn (1989: 11). The samples of this research were two classes (VIII A and VIII C) which were selected based on the classification made by the school. Class VIII A acted as the experimental group and VIII C as the control group. Each class consists of 43 students. To anticipate the absence of some students during the research, the researcher only takes 40 students from each class as the sample. So the fix number of the sample is 80 students. During the experiment, the experimental group is given several treatments in period four meetings.

3.3 Research Instrument

Two kinds of instruments were used in collecting the data; reading comprehension test and questionnaire.

1. Reading Comprehension Test

    To investigate students' reading comprehension, reading comprehension test which consist of four texts and twenty multiple choice items related to the text

was used. The reading comprehension test was used in pretest and posttest and given to the experimental and the control group. Try out test was conducted before the test was given to the experimental and control group with the purpose to investigate the reliability and validity of the test items.

2. Questionnaire

To investigate students' perceptions toward the use of previewing as pre-reading activity, the questionnaire was used. Only the experimental group was given the questionnaire. The questionnaire was given in the end of the program. It consisted of four items of 'Yes' or 'No' questions but they could explain their answer. That was also one item of open question.

3.4 Research Procedure

3.4.1 Organizing Teaching Procedure

In this research, the writer acted as teacher and facilitator in the classroom reading process both in the experimental and control group. In preparing the teaching process, the writer undertook two steps. First, preparing appropriate materials for teaching and learning process during the treatment. Second, organizing teaching procedures in the control and the experimental group.

3.4.2 Administering Try-out Test

Before the instrument used in the research, the researcher administrated try out test to investigate the validity and reliability of the instrument. Try-out test consisted of for texts and thirty multiple choice questions related to the text. The test materials were adapted from several textbooks used by the second grade of

junior high school students. The try-out test was conducted in class VIII D of SMPN 12 on April 14, 2008 before the experimental teaching begun.

3.4.3 Experiment

The previewing procedure proposed by Chia (2001) was used for teaching reading in the experimental group, while in the control group did not use previewing. However, the materials and the teaching procedures, except the teaching technique, that were conducted in control group were the same as in the experimental group.

The experiment held from April 21 until May 12, 2008 consisting three treatments. One meeting consists of two hour of instruction (80 minutes). Table 3.1 below is the research schedule.

Table 3.1
Research Schedule

No	Date	Experimental Group (VIII C)	Control Group (VIII A)
1.	(April 9, 2008)	Pretest	
2.	(April 10, 2008)	-	Pretest
3.	(April 21. 2008)	Text 1 (1st treatment)	
4.	(April 22, 2008)	-	Text 1
5.	(April 23, 2008)	Text 2 (2nd treatment)	-
6.	(April 24, 2008)	-	Text 2
7.	(April 28, 2008)	Text 3 (3rd treatment)	-
8.	(April 29 , 2008)		Text 3
9.	(April 30, 2008)	Text 4 (4th treatment)	-
10	(May 12, 2008)		Text 4
11	(May 13, 2008)	Posttest & questionnaire	
12	(May 14, 2008)	-	Posttest

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3.4.4 Administering Pretest, Posttest and Questionnaire

To investigate the students' initial ability, the pretest was conducted. It was given to both experimental and control group. Afterward, to investigate the effectiveness of pre-reading activity strategy in teaching reading, at the end of the program posttest was given to both groups. Lastly, to investigate students' perceptions toward pre-reading activity, the questionnaire was given to the experimental group.

3.5 Data Analysis

3.5.1 Scoring Technique

The test used in this research was multiple choice items. There are two types of formulas can be used to process the multiple choice item data (Arikunto, 2003). The formulas are; the formula with punishment and the formula without punishment. In this research, the writer used the formula with punishment. The formula is as follows:

$S = R$

In which, S : score

R : right answer

3.5.2 Data Analysis on Try-out Test

The obtained data from the try-out test were analyzed to investigate the validity and reliability of the test items. Furthermore, the valid and reliable items ware used as the research instrument. According to Best and Kahn (1989: 160) to

do the effective any data gathering procedure, validity and reliability of the instrument are essential.

1. Validity

Validity is quality of data gathering instrument or procedure that enables it to measure what is supposed to measure (Best and Kahn: 1989). According to Arikunto (2002: 243) Pearson product moment correlation can be used to analyze the validity of each item. The formula is as follows:

The data was calculated by SPSS (Statistical Package for the Social Sciences) 15 for windows. The calculation result was compared to the r_{table}. If the $r_{correlation} > r_{table}$, the item is valid (Sugiyono, 275))

2. Reliability

According to Best and Kahn (1989: 160) reliability can be defined as the consistency degree of the instrument or procedure. Spearman-Brown formula (split-half) can be used to calculate the reliability of the instrument. The data was calculated by SPSS 15.0 for windows. The result was interpreted with the following criteria in table 3.2.

Table 3.2
r Coefficient Correlation

r Coefficient	Correlation
0.800 – 1.000	Very High
0.600 – 0.800	High
0.400 - 0.600	Moderate
0.200 – 0.400	Low
0.000 – 0.200	Very Low

(Arikunto, 2002: 245)

3.5.3 Data Analysis on the Pretest

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The aims of pretest are both to investigate the students' initial ability and to investigate the initial equivalence between the groups. The researcher used *t*-test formula, Case II studies or independent sample test (Hatch and Farhady, 1982: 111). Hatch & Farhady (1982: 114) states three assumptions underlying the *t*-test as follow:

1. the subject is allotted to one group in experiment

2. the variances' scores are equal and normally distributed

3. the scores on the independent variable are continuous

For that reason, the researcher took the normality distribution and variance homogeneity test before calculated the data using *t*-test formula.

3.5.3.1 Normality of Distribution Test

In this research, the researcher used the SPSS 15.0 for windows to analyze the normality distribution of the scores with the steps as follows:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test)

H_0 = the score of the experimental and the control group are normally distributed

H_1 = the score of the experimental and the control group are not normally distributed

2. Analyzing the normality distribution using Kolmogrov-Smirnov formula in SPSS 15.0 for windows.

3. Comparing the Asymp. Sig with the level of significance to test the hypothesis. If the Asymp. Sig > level of significance (0.05) the null hypothesis is accepted: the scores are normally distributed.

3.5.3.2 The Homogeneity of Variance Test

In analyzing the variance homogeneity of the scores, the researcher used the Levene Test formula in SPSS 15.0 for windows. The analyzing of variance homogeneity follows the steps below:

1. Stating the hypothesis and setting the alpha level at 0.05

   H_0 = the variance of the experimental and control group are homogenous

   H_1 = the variance of the experimental and control group are not homogenous

2. Analyzing the variance homogeneity using Levene Test formula in SPSS 15.0 for windows.

3. Comparing the probability with the level significance for testing the hypothesis. If the probability > the level of significance (0.05) the null hypothesis is accepted; variance of the experimental and control group are homogenous.

3.5.3.3 The Calculation of t-test

The steps of the t-test calculation are as follows:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test)

   H_0 = the two samples are from the same population; there is no significant difference between the two sample $\left(\overline{X}e = \overline{X}c\right)$

   H_1 = the two samples are from the same population; there is a significant difference between the two sample $\left(\overline{X}e \neq \overline{X}c\right)$

2. Finding the value

$$t_{\text{obs}} = \frac{\overline{X}_e - \overline{X}_c}{S_{(\overline{X}_e - \overline{X}_c)}}$$

$\overline{X}e$ = mean of the experimental group

$\overline{X}c$ = mean of the control group

$S_{(\overline{X}_e - \overline{X}_c)}$ = Standard error of differences between means

3. Comparing the probability with the level of significance for testing the hypothesis. If the probability is more than or equal to the level of significance, the null hypothesis is accepted; the two groups are equivalent.

   In calculating *t*-test, the researcher used SPSS 15.0 for windows.

3.5.4 Data Analysis on the Posttest

In calculating the posttest data, the researcher used the same steps as in calculating the pretest data. The researcher used *t*-test formula, Case II studies or independent sample test (Hatch and Farhady, 1982: 111).

3.5.5 Data Analysis on the Experimental and the Control Group Scores

To investigate whether or not the difference of the pretest and posttest means of each groups is significance, the researcher analyzed the pretest and posttest scores using the matched *t*-test (Hatch & Farhady, 1982: 114). The steps are as follows:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test)

H_0 = there is no significant difference between the pretest and posttest scores

$$\left(\overline{X}_1 = \overline{X}_2 \right)$$

H_1 = there is significant difference between the pretest and posttest scores

$$\left(\overline{X}_1 \neq \overline{X}_2 \right)$$

2. Finding the t value

$$t = \frac{\overline{X}_2 - \overline{X}_1}{S_{\overline{D}}}$$

$\overline{X}_1$ = mean of the posttest

$\overline{X}_2$ = mean of the pretest

$S_{\overline{D}}$ = standard error of differences between the means

3. Comparing the probability with the level of significance for testing the hypothesis. If the probability is more than or equal to the level of significance, the null hypothesis is accepted; the two scores are homogenous.

The calculation of *t*-test was done using SPSS 15.0 for windows.

3.5.6 Data Analysis on the Questionnaire

To analyze the questionnaire, the number of respondent choosing 'Yes' and 'No' were counted and changed into percentage form. The option 'Yes' was counted 1 and the option 'No" was counted 0. The formula of percentage of questionnaire is as follows:

$$P = \frac{F \times 100}{N}$$

Note:

P : percentage

F : Frequency

N : The Sum of samples

100 : Constant

The result of calculation was interpreted to the table 3.3.

Table 3.3
Percentage of respondent

Percentage	Interpretation
0%	None of the students
1% - 25%	A small number of
26% - 49%	Nearly half of
50%	Half of
51% - 75%	More than half of
76% - 99%	Most of
100%	All of

(Kuntjaraningrat in Solichatun 2007)

This chapter discusses the research design used in this study, the variables of the research, the population and sample, the research instrument, the procedure of the research and the data analysis.