

## CHAPTER III

### RESEACH METHODOLOGY

This chapter discusses research methodology applied in the research. It comprises research design, research variables, data collection which comprises three parts namely population and sample, and research instrument. Moreover, research procedure which consists of organizing teaching procedure, administering try out test, administering pre-test, conducting treatment, administering post-test, administering interview will be discussed. The last part is technique for analyzing the data.

#### 3.1 Research Design

The aim of the research is to find out whether the use of series picture as a method in teaching speaking in procedure text is more effective or not than conventional method to improve students' speaking ability. Moreover, the research has an objective to identify the students' responses toward the use of series pictures in teaching speaking in procedure text. Thus, the research method which is used in this study is quantitative and qualitative with experimental design. Sugiyono (2008: 114) states that experimental design is a study which aims at finding out the influence of particular treatment.

Quasi experimental design was applied in this study. Gay R. L. (1987) states that quasi experimental involves some basic characteristics, among others are; the control group, the experimental group, pre-test, post-test and treatment. There were two groups taken as the investigated groups. One group is for the experimental

group that has received a special treatment namely the group treated by the use of series pictures as the method in teaching speaking in procedure text in its treatment; and the other group is for the control group that received non treatment.

In this research, speaking test was employed to find out whether there were significant changes in experimental group after having been given such method or not. The formula of this design is shown in table 3.1 as follows:

**Table 3.1**  
**Pretest-Posttest Quasi Experimental Design of the Study**

Sample	Pre-test	Treatment	Post-test
Experimental Group	Se <sub>1</sub>	X <sub>1</sub> , X <sub>2</sub> , X <sub>3</sub> , X <sub>4</sub>	Se <sub>2</sub>
Control Group	Sc <sub>1</sub>	0	Sc <sub>2</sub>

Notes:

Se<sub>1</sub> : Students' speaking ability of experimental group in pre-test

Sc<sub>1</sub> : Students' speaking ability of control group in pre-test

Se<sub>2</sub> : Students' speaking ability of experimental group in post-test

Sc<sub>2</sub> : Students' speaking ability of control group in post-test

X : Treatments (teaching speaking by using series pictures)

To answer the research question, the null hypothesis was needed as the research foundation. The null hypothesis states that there is no significant difference between the pre-test and post-test scores (Coolidge, 2000). It means that the use of series pictures in teaching speaking in procedure text can develop students' speaking ability.

$$H_0: \mu_1 = \mu_2$$

In null hypothesis, it states that “there is no difference in mean adjustment level between the class using series pictures as treatment and class without using series pictures.

### **3.2 Research Variables**

Hatch and Farhady (1982: 12) define variable as “an attribute of a person or of an object which varies from person to person or from object to object”. There are two kinds of variable namely independent and dependent variable. Independent variable is a variable that evoke or influence the dependent variable. Meanwhile, dependent variable is variable which is influenced by independent variable. Referred to that definition, the independent variable of this research is the use of series pictures in the teaching of speaking in procedure text and the dependent variable is the students’ speaking ability.

### **3.3 Data Collection**

#### **3.3.1 Population**

A population is any group of individuals that have one or more characteristics in common that are interested of the researchers. The population may be all individuals of a particular type or more restricted part of that group (Best, 1983: 3)

Based on the definition above, the population of this research was the seventh grade students of SMPN 2 Cipeundeuy. It consists of seven parallel classes.

They are registered in academic year 2010/2011 each class has 37 students.

### **3.3.2 Sample**

According to Best (1983: 3), sample is a small proportion of a population selected for observation and analysis. The sample of the research was two classes, it has been chosen purposely. This technique was employed by considering certain conditions. The first class was 7E as the experimental group and class 7F as the control group. Both of classes consisted of 37 students.

### **3.3.3 Research Instruments**

This research used three instruments namely pre-test, post-test and interview in order to answer the research questions. Sugiyono (2008) states instrument is a media used to collect the data. The three instruments are described as follows:

#### **3.3.3.1 Pre-test**

Pre-test was assigned to 50 students who were chosen randomly from the two groups; 25 students of experimental group and 25 students of control group. Pretest was implemented in order to find the students' ability in speaking before giving the treatment. It was also proposed to figure out the initial differences between the groups of students who have similar level of speaking competency. The pre-test given was speaking test namely monologue in procedure text form. The selection of theme of the picture was referred to resource book used in the seventh grade students of SMPN 2 Cipeundeuy.

#### **3.3.3.2 Post-test**

Post-test was given to the fifty students who have been included in the pretest. It was employed in the end of the research. It was done after giving

treatments and exercises to the experimental group. The result of the post-test was used to compare with the data of the pre-test and analyze the effectiveness of using series pictures in teaching speaking on spoken procedure text. The procedure was the same as pre-test.

### **3.3.3.3 Interview**

Interview was done after finding the data from pre-test and post-test. The interview comprised of a set of questions concerning with students' attitude toward the use of series pictures. The result of the interview depicted students' response of the use of series pictures.

## **3.4 Research Procedure**

### **3.4.1 Preparing the Lesson Plan**

The lesson plan was designed to be implemented during treatment to the experimental group. The researcher designed the lesson plan for four meetings. The first and the last meeting were allocated to conduct the pretest and posttest, while the rest four meetings were allocated to execute the treatment (the use of series pictures in teaching speaking). The lesson plan was designed based on the National curriculum of English for seventh grade students which consists of Competence Standard, Basic Competence, Indicator, Instructional Objective, and Lesson Materials. In addition, Method/ technique, Steps of the activity, Source Lesson, and the evaluation are also involved. The lesson plan for the control group was made by the teacher.

### 3.4.2 Preparing the Material

The materials given to the experimental group were taken from several English textbooks; *Contextual Teaching and Learning Bahasa Inggris Sekolah Menengah Pertama Kelas VII*, *English in Focus for Grade VII Junior High School*, *Exploring How texts work* and *Bahasa Inggris Untuk Kelas VII SMP/ MTS Semester Genap*. The materials included some procedure texts about making something. It is in line with the competence standard of VII grade junior high school in number 10 that students must be able to expressing meaning on spoken functional text and short monologue in descriptive and procedure forms to interact with their close environment. In detail, those texts involved several terms; how to make a cup of milk tea, how to make a glass of orange juice, how to make a glass of avocado juice, how to make a cheese omelet, how to make fried rice and how to make sauted green shrimp. The material was taught to both of the experiment and the control groups as well with different methods.

### 3.4.3 Administering Try out-test

Try-out test of the instrument (the test) had been managed on May 7, 2011. Try out-test was conducted to reveal whether or not pre-test and post-test appropriate for experimental and control group to carry out. In this research, try out test was employed in terms of the same level of speaking ability as experimental and control group. Try out test sample was the students from different class namely class 7G. There were twenty students of class 7G. They were chosen randomly as the sample of the try out test.

Speaking test was the instrument for the study. There were twenty five students were asked to present a monologue orally based on the following instructions; students were given a certain topic or a title of procedure text then they presented it to the teacher by using three instructions, first one was, identified the topic or the goal which is indicated in the title, second one was, figured out the materials needed and the sequence of steps, the three and the last one was, presented a spoken procedure text (monologue) in front of the class. In addition, four criteria were assessed in this test; they are fluency, grammar, context, and vocabulary.

#### **3.4.4 Administering Pre-test**

Pre- test was administered to both experimental and control group. This test was purposed to obtain the data of the students' basic speaking skill and to ascertain that the students from both groups had the same capability and the same English proficiency before they received the treatment. The procedure of test was exactly same with try out test.

#### **3.4.5 Conducting Treatment**

This research was conducted to see the effect of the two groups namely experimental and control group with different treatment. The experimental group was offered a special treatment namely the student taught by using series pictures as a media as well as method in teaching learning speaking on spoken procedure text, while the control group was given non treatment.

The treatment was designed for four meetings to the experimental group. In contrast, the control group was treated using conventional method. Time allocation

for each meeting consists of two hours of instruction (one hour of instruction was forty minutes). Time schedule of the research can be seen in the table 3.2:

**Table 3.2**  
**Time Schedule of The Study**

No	Experimental Group		Control Group	
	Date	Material	Date	Material
1	May 9, 2011	Pretest	May 9, 2011	Pretest
2	May 23, 2011	Spoken procedure text 1 Observe series pictures and express instructions to <i>make a cup of milk tea</i> by seeing series pictures	May 12, 2011	Spoken procedure text 1 Express instructions to <i>make a cup of milk tea</i> by arranging jumbled sentences
3	May 24, 2011	Spoken procedure text 2 Observe series pictures and express instructions to express instructions to <i>make a glass of orange juice and a glass of avocado juice</i> by seeing series pictures	May 19, 2011	Spoken procedure text 2 Express instructions to <i>make a glass of orange juice and a glass of avocado juice</i> by arranging jumbled sentences
4	May 30, 2011	Spoken procedure text 3 Observe series pictures and express instructions to <i>make a cheese omelet</i> by seeing series pictures	May 24, 2011	Spoken procedure text 3 Express instructions to <i>make a cheese omelet</i> by arranging jumbled sentences
5	May 31, 2011	Spoken procedure text 4 Observe series pictures and express instructions to <i>make fried rice and sauted green shrimp</i> by seeing series pictures	May 26, 2011	Spoken procedure text 4 Express instructions to <i>make fried rice and sauted green shrimp</i> by arranging jumbled sentences
6	June 1, 2011	Post test and Interview	May 31, 2011	Post test

### 3.4.6 Administering Post-test

The study employed the post test at the end of the research. It was used to measure the students' speaking skill after the treatments. It was employed to both



experimental and control groups. This was intended and also to find out the differences between students' score of both group. The posttest was almost similar to the try out test.

### **3.4.7 Administering Interview**

Interview was conducted to reveal the students' perception toward the use of series pictures as a teaching method after conducting pre-test and post-test. Interview is 'a set of questions for obtaining statistically useful or personal information from individuals' (Meriam-Webster Online Dictionary: 2008). This instrument provides students' point of view about treatment that they had done as description of additional information concerning with the methodology of using series picture.

### **3.5 Data Analysis**

The researcher analyzed the data after collecting it by using the instruments. The process of the data analysis was done on the pretest and post-test scores. To find out the students' improvement in speaking on spoken procedure text by using series pictures after the treatments, the data from final test scores was used. There were scores and criteria which were settled to give brief explanation for every score given in assessing student's speaking ability. Criteria of assessment in conducting pretest and posttest were settled by the scoring guide based on "Communicative Language Testing" C.J. Weir (1990). They are fluency, grammar, context and vocabulary.

**Table 3.3**  
**Criteria of Speaking Assessment**

<b>No</b>	<b>Aspect</b>	<b>Score</b>	<b>Criteria</b>
1	Fluency	10	The student has the ability to talk with normal levels of continuity
		8-9	The student talks with normal levels of continuity but there are some hesitant responses
		7	Utterances may still be hesitant and there are some pauses but are gaining in normal levels of continuity
		5-6	Hesitant responses and there are many pauses in the utterance
		<5	There are many long pauses and often incomplete responses
2	Grammar	10	The student uses an appropriate and accurate words and convey the information clearly
		8-9	Almost there are no grammatical error and convey the information given
		7	There are some grammatical errors but the information has clear meaning
		5-6	There are frequent grammatical error and unclear meaning
		<5	Almost all utterances are inaccurate grammar and unclear meaning
3	Context	10	The student gives relevant and contextual responses
		8-9	The students convey the contextual responses but only in general
		6-7	There are some redundancy responses and irrelevant responses
		<6	No context of the responses and irrelevant responses
4	Vocabulary	10	The student uses an appropriate, varied, and relevant words to the context
		8-9	Almost there are no irrelevant and inappropriate words to the context
		7	There are some inappropriate and irrelevant words to the context but the information still has clear meaning
		5-6	There are less variation of words and there are lots of inappropriate words, but the information still has clear meaning
		<5	There are excessive repetition, inappropriate and unclear information

(C.J. Weir, 1990)

### 3.5.1 Data Analysis of Try-out test

Result of students' speaking test on try out was calculated using computer program named SPSS (Statistical Package for the Social Science) version 16. This program was useful in measuring in term of parametric test namely the data was homogeneity and normality.

### 3.5.2 Data Analysis on Pre-test

The pre-test scores from the students' speaking were analyzed statistically by using SPSS 16. The calculation covers normality distribution, homogeneity variance, and t-test. In detail, the data analysis is presented as follows.

Firstly, analyze the normality distribution. According to Hatch and Farhady (1982) the normal distribution has three distinct properties that allow us to make inferences about the population in general and our sample of that population in particular. The statistical calculation of normality test used Kolmogorov-Smirnov by following three steps: (1) Setting the null hypothesis,  $H_0$  = the scores between experimental and control group is normally distributed and establishing the level of significance ( $p$ ) at 0.05. (2) Computing normality using Kolmogorov-Smirnov in SPSS 16.0. (3) Comparing the asymp.sig with the level of significance ( $p$ ) to test the hypothesis. If Asymp. Sig > 0.05, the null hypothesis is not rejected which means the sample score is normally distributed. In contrast, if Asymp. Sig < 0.05, the null hypothesis is rejected which means the score is not normal (Field, 2005).

Secondly, calculate homogeneity variance. The homogeneity of variance test used an SPSS program namely Levene's test. The steps are as follows: (1) establishing the null hypotheses,  $H_0$ : the variances of the experimental and the

control group are homogenous and setting the level of significance ( $p$ ) at 0.05. (2) Measuring the homogeneity variance using Lavene's test. (3) Comparing the asymp.sig with the level of significance to test the hypothesis. If Asymp.Sig < 0.05, null hypothesis is rejected which means the two groups are not equal. In contrary, if Asymp.Sig > 0.05, the null hypothesis is not rejected which means the variance data of two groups is equal (Field, 2005).

Thirdly, determine the independent t-test. The steps in calculating independent t-test were: (1) Establishing the null hypothesis for the pre-test and post-test data analysis,  $H_0$ : there is no significant difference between the means in experimental and control group and setting the level of significance ( $p$ ) at 0.05 with two tailed of significant. (2) Calculating the independent t-test by using SPSS 16.0. (3) Comparing the  $t_{obt}$  and  $t_{crit}$  at  $p = 0.05$  and  $df = 48$  to examine the hypothesis. If the  $t_{obt} > t_{crit}$ , the null hypothesis is rejected. It clarifies that there is difference of means between experimental and control group. However, if the  $t_{obt} < t_{crit}$ , the null hypothesis is not rejected. It declares that there is no difference of means between experimental and control group.

### **3.5.3 Data Analysis on Post-test**

Data analysis on post-test used exactly the same steps as in the pre-test data analysis which is included normality test, homogeneity test, and independent t-test by using SPSS 16 for window.

### 3.6 The Calculation of Effect Size

According to Coolidge (2001: 151) effect size is the effect of the influence of independent variable upon the dependent variable. It means that effect size is a way to consider how well the treatment works. If there is a large different between the two groups' means, it states that the treatment really works, and then there is said to be a much effect size. If the difference between the two groups' means is small, then there is said to be a small effect size.

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

Notes: r = Effect size

t = t obt or t value from the calculation of independent t-test

$$df = N1 + N2 - 2$$

After gaining the effect size, then the score will be matched with the following scale to interpret the effect size.

**Table 3.4**  
Effect Size Value (Coolidge, 2001: 151)

Effect Size	r value
Small	.100
Medium	.243
Large	.371