

## CHAPTER III

### RESEARCH METHODOLOGY

This chapter presents the research methodology which deals with research design, research subject, data collection, and research procedures and data analysis.

#### **A. Research Method**

##### **1. Research Design**

The important role of research design is to answer research problems and examine the research hypothesis (Anggoro et.al., 2002, p. 3.17). Thus, a proper design is essentially required to answer the research problems and to know whether the hypothesis is accepted or rejected.

The design of the research is quasi-experimental design with the pre-test and post-test nonequivalent groups design. Hatch and Farhady (1982, p.22) state that the pre-test and post-test nonequivalent groups design is often used in classroom experiments when experimental and control group design are such naturally assembled groups as intact classes which may be similar. Moreover, Ruseffendi (2004) cited in Furi (2007) asserts that in the quasi-experimental with nonequivalent groups design, there are pretest, different treatments, posttest conducted toward the sample, which is divided into two groups: experimental group and control group. The used formula of research design in is represented as follows:

EG	T1	X	T2
CG	T1	0	T2

- EG : Experimental Group  
 CG : Control Group  
 T1 : Pretest  
 T2 : Posttest  
 X : Treatment, i.e. the dictogloss technique  
 0 : The conventional method

Based on formula above, experimental group is the sample which is accepted the treatments, while control group is the sample which is taught by the conventional method. Pretest is given before the treatments, and posttest is given after the treatment to both groups. The result of pretest and posttest will be analyzed by t-test to know whether or not the listening ability of both groups is significantly different after the treatment.

## 2. Variables

One of the most important concepts in the research is the concept of variable (Fraenkel and Wallen, 1990, p. 36). Further, variables are the conditions or characteristics which the researcher can manipulate, control, and observe. In this research, there are two variables: independent variable and dependent variable. Moreover, Anggoro et.al. (2000, p. 1.32) assume that the most important thing that relates to research design is independent variable and dependent variable. According to Hatch and Farhady (1982, p. 15), define independent variable as the major variable which the researcher hopes to

investigate. On other hand, dependent variable is the variable which the researcher observe and measure to determine the effect of the independent variable. Concisely, the nature of dependent variable depends on what the independent variable does to it, how it affects it (Fraenkel and Wallen, 1990, p. 39). In this research, the dictogloss as the teaching technique is independent variable and becomes the major variable to be investigated while the variable that is influenced by the independent variable in this research is the listening ability as dependent variable.

### **B. Hypothesis**

According to Fraenkel and Wallen (1990, p. 40), “Hypothesis is a prediction of some sort regarding the possible outcomes of a study”. The hypothesis was applied in this research is *null-hypothesis* ( $H_0$ ). It means that there is no significant difference of means between control and experimental groups.

Yudha (2008) states, “By using null hypothesis, every possibility of the research can be shown”. There are two probabilities. If the null-hypothesis is rejected, it means that the experiment works. However, if the null-hypothesis is accepted, it means that the experiment does not work. Concisely, the hypothesis of the research is the dictogloss technique is not effective to improve students’ listening ability.

## C. Research Subject

### 1. Population and Sample

Population is the whole subject that will be investigated in a research (Furi, 2007). Factors such as expense, time, and accessibility frequently prevent to gain information the whole population. Therefore, Cohen et.al. (2005, p. 92) state that the research requires to be able to obtain data from smaller group or subset of the total population under study. This smaller group or subset called sample.

Based on that statement, the population of the research is all students at the eleventh grade at SMK Negeri 14 Bandung. From the ten existing skill programs, the research involves only one skill program namely MM which stands for Multimedia. The samples of the research are XI MM - 3 as experimental group and MM - 2 as control group. Each class consists of only 25 students, thus total number of both classes are 50 students. To anticipate the absence some students during the research, the researcher only takes 21 students from each class, it means the fix number of the sample is 42 students. During the research, the experimental is given the treatments in period of six meeting.

Moreover, Cohen et.al. (2005, p. 92) quote, “The quality of a piece of research stands or falls not only by the appropriateness of methodology and instrumentation but also by also the suitability of the sampling strategy that has been adopted”. Sampling is the process of selecting and determining the type

and number of sample that are required for a research. According to Fraenkel and Wallen (1990, p. 233) declare that the random assignment of population to sample is an important aspect of many researches. Whereas the limitation of researcher, it is not possible to choose the sample in pure random.

As Kerlinger (1970) cited in Cohen et.al. (2005, p. 214) utters, "Quasi-experimental situations as 'compromise designs', an apt description when applied to much educational research where the random selection or random assignment of schools or classroom is quite impracticable". Hence, this research applies the purposive sampling which is based on the classification made by the researcher. Still, according to Cohen et.al. (2005, p. 103) in the purposive sampling, the researcher take the cases to be included in the sample on the basis of their judgment of their typicality. The prerequisite of the sample in this research are (a) The students are at the same skill program, and the same grade of class (b) The students have never been taught listening skill with using dictogloss technique.

## **D. Data Collection**

### **1. Research Instruments**

Research instrument is a tool for collecting data and information desired (Anggoro, et. al., 2002, p. 5.2). Moreover, Fraenkel and Wallen (1990, p. 88) state that "The collection of data is an extremely important part of research endeavors, for the conclusions of a study are based on what the data reveal". The research utilizes the listening comprehension test, questionnaire and

interview as research instruments. Both of instruments are used to show the effectiveness of the dictogloss technique in the teaching of listening and to what extend the dictogloss technique is effective to improve students' listening ability.

#### **a. Test**

This research employs the listening test which acts as pretest and posttest. The listening test consists of 30 multiple choices which are tested to experimental and control classes. The pretest is given to find out the previous students' listening ability before the treatment, while the posttest was conducted to assess students' listening ability after having the treatments. The questions of pretest and posttest are taken from TOEIC (The Test Of English as International Communication) which entitled Barron's How to prepare for The TOEIC Bridge Test by Lin Lougheed (2005).

As mention in chapter one, the short texts involved in this research are monolog (e.g. announcement, advertisement, procedural texts, etc) which are found in SKKD used, thus the suitable listening questions are about short talks of listening comprehension.

#### **b. Questionnaire**

The questionnaire is a widely use and useful instrument for collecting data survey information, providing structured, often numerical data, being able to be administered without the presence of the researcher

and often being comparatively straight forward to analyze (Wilson and McLean, 1994 cited in Cohen et.al, 2005: p. 245). Moreover, Yudha (2008) states that questionnaire is basically a tool to gain information and answers directly from the respondent. In other word, the advantages of using questionnaire is that respondent can communicate directly with the respondent and gain the information from large numbers of people at the same time. Nevertheless, Fraenkel and Wallen (1990, p. 100) asserts that the disadvantages of using questionnaire are unclear and apparently ambiguous questions cannot be clarified and the respondent has no chance to expand on, or react verbally to, a question of particular interest and importance.

The research applies the close-ended questionnaire in which the respondents mark an answer sheet to answer the questions. According to Anggoro, et. al. (2002, p. 5.6), a close questionnaire is designed to obtain the answer which is provided the choices by researcher.

The questionnaire which consists of 23 questions is used for investigating to what extent the dictogloss is effective in teaching listening. Moreover, the questionnaire has function to collect the data concerned with the implementation of dictogloss technique in listening class.

### **c. Interview**

The interview consists of four questions. The interview is conducted to gain the additional information related to second research question. The interview is given to representatives of experimental class after accepting the treatments.

Further, Fraenkel and Wallen (1990, p. 126) claim that the quality of the instrument used in a research is very important, thus the data or information collected by using research instrument must be valid. The validity and reliability of instruments will be explained in the following section.

## **E. Research Procedures**

### **1. Organizing Teaching Procedures**

The researcher organizes the teaching procedures before she conducts the experiment in both experimental and control groups. The researcher acts as teacher and facilitator in the class. The researcher passes through two steps in organizing teaching procedure: first, the researcher prepares the materials for teaching and learning process during the treatments. Second, the researcher organizes teaching procedure for experimental and control groups.

In the control group, the technique of conventional teaching and teaching procedures are applied. While in the experimental group, the teaching materials and teaching procedures are related to the implementation of dictogloss technique in teaching listening. The materials for both groups are based on standard competence and competence standard in the syllabus. Further, the



syllabus is elaborated into RPP (Rencana Pelaksanaan Pembelajaran) or Lesson Plan.

## 2. Trying Out The Research Instruments

Anggoro et.al (2000, p. 5.29 and 5.32) state that validity and reliability of instrument are necessary for a research whereas validity also reflects the quality and significance of a research and reliability reflects the accuracy of a research. To get the validity and reliability of instruments, the researcher has to try out the research instruments (Faisal, 1981). The instruments are tried out to the sample from the same population but not included in the research sample.

Nevertheless, the listening test in the research is not tried out to find the validity and reliability, since the test is categorized as standard test. As Arikunto states (1993) cited in Furi (2007), "Jika peneliti menggunakan test standar seperti ini, maka mereka tidak terlalu dituntut untuk mengadakan uji coba." Further, Brown (2004, p. 68) also states that the TOEIC test is a standardized test, which is "... a ready made previously validated product that frees the teacher from having to spend hours creating a test." Concisely, TOEIC test has been proven to be such reliable measure of test taker's English language ability.

On other hand, the questionnaire requires to try out because it was adapted from existing questionnaire and developed by the researcher herself. The questionnaire try-out was conducted toward 28 students of MM-1 class as the respondents. The questionnaire try-out was implemented on Nov, 9 2009.

### 3. The Validity and Reliability of Instruments

For measuring validity and reliability for the questionnaire with Likert Scale, the result of questionnaire try-out is calculated by Alpha-formula (Nugroho, 2005 cited in Furi, 2007). The calculation of questionnaire is technically done by Alpha Formula through SPSS 16 for Windows program. The total items of questionnaire tried out are 32 questions. The score of validity for each item is  $r_{count}$ , which can be seen from the corrected item-total correlation table from SPSS data output (see appendix). Each item is valid if its  $r_{count} > r_{table}$ . The try-out of questionnaire is conducted toward 28 respondents with the level of significant 5 % and the degree of freedom (df)  $n-2$  or  $(28-2=26)$ , so  $r_{table}$  is 0.374. The result of computation of validity for each item can be seen on appendix. From the result computation, there are 12 questions which are not valid, since  $r_{count} < r_{table}$ . Thus, there are only 23 questions used.

Moreover, the calculation of Alpha Cronbach can also used to analyze the reliability of instrument. Table 3.1 show the computation result of reliability for questionnaire.

**Table 3.1**  
**Reliability Statistics**

	Cronbach's Alpha Based on Standardized Items	N of Items
Cronbach's Alpha	.891	32

As Nugroho (2005) cited in Furi (2007) says that a research instrument is stated having high reliability if the coefficient of Alpha Cronbach  $\geq$  0.6. From table 3.1 above, it can be seen that the coefficient of Alpha Cronbach is 0.897, which is higher than 0.60 ( $0.897 \geq 0.60$ ). Concisely, the construction of questionnaire is reliable.

## **2. Implementation Of The Treatments**

### **a. Teaching listening with dictogloss technique for Experimental class**

As mention above, dictogloss technique consists of four stages in teaching procedure (Wajnryb, 2005: p. 7-9).

#### **1) Preparation**

- Students are given the brainstorming which relates to the topics which will be discussed. Brainstorming acts as warming up this prepares students for the subject matter and makes them more receptive the listening in the next stage.
- Students are given the difficult vocabulary of the text as pre-taught.
- Students are given the clear instruction of what students should do in learning with dictogloss technique
- Students are organized into group of four

#### **2) Dictation**

- Students listen to the teacher who is reading the text at normal speed
- Students are taking a note while they are listening to the text

- Students are listening to the text which is read by native speaker (from audio)

### 3) Reconstruction

- Students work in group and reconstruct the text by using their notes.

### 4) Correction and Analysis

- Students compare and discuss their own text with other texts before comparing with the original text.
- Students compare their text with the original and correct their grammar error.
- Each group reads aloud their reconstructions.
- Students discuss the topic of the text.

### **b. Teaching listening without dictogloss technique for control group**

The teaching of listening without dictogloss technique which is implemented in control group covers several stages:

- 1) Teacher tells the topics that will be discussed.
- 2) Students are given the vocabularies which are difficult.
- 3) Students listen to the text from audio for two or three times.
- 4) Students answer the question based on the text they listen to.
- 5) Students discuss the correct answer of each question
- 6) Teacher gives the assessment for the exercise listening done by students.

Both classes are given the teaching materials for listening which based on SKKD used and Syllabus from SMKN 14 Bandung which involve the listening competence: (1) determining the correct answer for the questions based on short conversations, and (2) making conclusion of short talks, such as advertisement or announcement. The syllabus is then elaborated into Rencana Pelaksanaan Pembelajaran or Lesson Plans. Different from control class which uses RPP from SMKN 14 Bandung, the experimental class uses RPP or Lesson Plans who are designed by the researcher. The material is taken from *Barron's How to prepare for The TOEIC Bridge Test by Lin Lougheed* (2005).

Further, the treatments of the research are conducted, after arranging the instrument and teaching material. The schedule of treatments for the research is presented below:

**Table 3.2**  
**The schedule of The Treatments**

No.	EXPERIMENTAL GROUP		CONTROL GROUP	
	Date	Material/ Theme	Date	Material/ Theme
1	Nov, 2 2009	PRETEST	Nov, 2 2009	POSTTEST
2	Nov, 2 2009	Short talks: Telephone message	Nov, 2 2009	Short talks: Telephone message
3	Nov, 3 2009	Short talks : Announcement,	Nov, 4 2009	Short talks : Announcement
4	Nov, 3 2009	Short talks: Advertisement	Nov, 4 2009	Short talks : Advertisement
5	Nov, 9 2009	Short talks: Weather forecast and news report	Nov, 9 2009	Short talks: Weather forecast and news report
6	Nov, 10 2009	Short talks: How to install printer	Nov, 11 2009	Short talks: How to install printer
7	Nov, 16 2009	Short talks: How to install the cartridge printer	Nov, 16 2009	Short talks: How to install the cartridge printer
8	Nov, 17 2009	POSTTEST	Nov, 18 2009	POSTTEST

### 3. Giving the questionnaire to the Experimental Group

The questionnaire is given to the experimental group only after having conducted the treatment. The data from the questionnaire is required to know to what extent the dictogloss technique is effective in improving students' listening ability. The questionnaire was assigned on Nov, 17 2009.

### 4. Interviewing The Representatives Of The Experimental Group

The interview was carried out on Dec, 5 2009. The researcher interviewed ten students as respondents from experimental group to add the information related to what extend dictogloss technique is effective in teaching listening.

## F. Data Analysis

### 1. Scoring the Data

#### a. Test

The multiple choices are used as the listening test in this research.

Arikunto (2007, p. 223-226) states that two types formula can be used to process the multiple choice of item data; the formula with punishment and without punishment. The research applies the formula with punishment which has the following formula:

$$S = R$$

In which, S : score; R : right.

## b. Questionnaire

As mentioned above, the questionnaire consists of 23 statements. Each statement is measured with Likert scale and the respondents give a check (O) on the number of each statement according to respondents' opinion. Each column of statement has the score which is presented on the table 3.2 below:

**Table 3.3**  
**Scoring for each statement of questionnaire**

Sangat tidak setuju (Strongly disagree)	1
Tidak Setuju (Disagree)	2
Setuju (Agree)	3
Sangat setuju (Strongly agree)	4

## 2. Analyzing The Data Collected

### a. Test

The data from pretest and posttest are analyzed with t-test statistics.

The process of analysis consists of several steps.

- a. testing the normality of distribution test
- b. computing the homogeneity of the variances test
- c. calculating the t-test by comparing the  $t_{obt}$  and  $t_{crit}$
- d. testing the null hypothesis ( $H_0$ )

The t-test is computed by using the Statistical Package for the Social Science (SPSS) 16 for windows program. The result of computation will be discussed in the next chapter and the results of computation are attached on the appendix page.

### b. The effect Size

To find out how well the treatments worked, in term of the posttest scores for both groups, thus the calculation of effect size is carried out by the researcher. The calculation of effect size is showed by formula below:

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

In which,

$r$  : Value of effect size

$t$  :  $t$  obtained from the  $t$ -test

$df$  : degree of freedom.

### c. Questionnaires

According to Furi (2007), the questionnaires can be analysed through several steps: a. Evaluating the questionnaires, b. Classifying the answer of questionnaires, and c. Describing and interpreting the data. Moreover, the data from questionnaires will be analyzed through numeral percentage as follow:

$$P = \frac{Fo}{n} \times 100\%$$

Description:

$P$  : percentage

$Fo$  : frequency observed

$n$  : Number of sample



**d. Interview**

The data collected from interview is transcribed to obtain the additional information concerned with the dictogloss technique in teaching listening.

