# CHAPTER III

# RESEARCH METHODOLOGY

This chapter deals with the design of the research. It involves research methodology, the subject of the research, data collection technique, and data analysis.

## 3.1 Research Method

According to Sugiyono (2008: 2), research method deals with scientific ways of getting data with certain aims and benefits. Specifically, Sukmadinata (2005:52) explains that research method is the description of the implementation of research based on philosophical and ideological views. The research applies quantitative method to analyze the data in which experimental method is chosen to test the hypothesis. In the process of collecting the data, the research takes two groups in which the first group is experimental class with some treatments, and the other is control group without any treatments (Fraenkel and Wallen 1990:232).

Specifically, the research applies quasi-experimental of the pre-test-post-test non-equivalent groups design. This design is often used in classroom experiments in which experimental and control groups are such naturally assembled as intact classes which may be similar (Hatch and Farhady, 1982: 22).

The following is the formula of the pre-test-post-test non-equivalent groups design:

**Table 3.1**
**Research Design**

| Group | Pre-test | Treatment | Post-Test |
|---|---|---|---|
| Experimental | $O_1$ | X | $O_2$ |
| Control | $O_3$ | - | $O_4$ |

Note:

X          = the treatment for the true experiment

$O_1$      = the observation of pre-test in experimental class

$O_2$      = the observation of post-test in the experimental class

$O_3$      = the observation of pre-test in the control class

$O_4$      = the observation of post-test in the control class

(Campbell and Stanley, 1963, as cited in Cohen and Manion, 1994: 169)

According to Fraenkel and Wallen (1990: 40) a research question is often restated as a hypothesis. Hypothesis is defined as a formal affirmative statement predicting a single research outcome, a tentative explanation of the relationship between two or more variables. It also limits the focus of the investigation to a definite target and determines what observations are to be made (Best, 1981). The hypotheses of the research are as follows:

- H<sub>0</sub>: There is no significant difference in mean adjustment level between the experimental group who received the song as the media and control group who did not.

$$H_a: \bar{X}_1 = \bar{X}_2$$

- Ha: There is significant difference in mean adjustment level between the experimental group who received the song as the media and control group who did not.

$$H_a: \bar{X}_1 \neq \bar{X}_2$$

## 3.2 The Subject of the Research

The subject in the research includes population and sample. Sugiyono (2008) defines population as a group of people or things involving their characteristics and qualities that become research subject. The population of the research was the first grade students of Junior High School 29 Bandung.

Sugiyono (2008) also defines sample as a part of population which is provided by some processes for investigating the properties of population. The sample of the research is smaller than the population. A researcher applies samples since it is hard to have access to all members of the population. Sukmadinata (2005:252) states that a sample must be representative and large. Further, the process of selecting and determining the type and number of samples that is required for research is called sampling. In the research, purposive sampling is chosen. Fraenkel and Wallen (1990:75) state that the researcher, in purposive sampling, uses personal judgment to select a sample. In the research,

the classification is made by the school. The sample of the research was class VII-D as the experimental group consisting 30 students that were given some treatments and VII-E as the control group consisting 30 students that were given no treatment.

Therefore, the research focused on the use of songs to improve students' speaking ability of first grade in junior High School 29 Bandung.

## 3.3 Data Collection

### 3.3.1 Pre Pest and Post Test

Speaking test which aimed to measure students' speaking ability was used as the instrument of the research. This speaking test was used in pre test and post test and given to the experimental and the control class. The aim of pre test was to discover the initial students' speaking ability, where post test was conducted to find out students' speaking ability after having treatments. The speaking tests are in form of procedural text.

However, before applying the pre test and post test to the experimental and control classes, the pilot test was tested to another class.

There are some points to be considered in formulating the items of the test. First is the relevance of the items to the purpose of the study. The second is the relevance of the items to the curriculum.

### 3.3.2 Questionnaire

According to Arikunto (2006: 151), questionnaire is written questions used to gain information and responds from respondents in a one-way communication. Sugiyono (2008:142) adds that questionnaire can be an efficient instrument if the researcher knows the respondents well and understands what to be expected from the respondents.

Based on a way of responding questions, there are two kinds of questionnaires, open and closed questionnaire. An open questionnaire is a questionnaire in which the respondents are given freedom to express their opinion without being given certain limitations (Arikunto, 2006:152). In line with Arikunto, Sudjana (1990:68) explains that an open questionnaire is a questionnaire where the respondents are not provided possible answers so that they answer freely the questions given.

In the research, a closed questionnaire was chosen. The questionnaire was intended to find out the students' responses toward the use of songs in improving their speaking ability. It consisted of 9 questions covering 5 aspects: students' comprehension, students' motivation, students' participation, students' difficulty, and teacher's performance.

## 3.4 Research Procedure

In the research, there were several procedures or steps in conducting the research. The procedures were organizing the teaching procedures, organizing the

research instruments, conducting an observation, testing the instruments, administering pretest, conducting some treatments, administering posttest, giving the questionnaire, and analyzing the data.

### 3.4.1 Organizing Teaching Procedure

In the research, the researcher functioned as a teacher and facilitator in both experimental and control class. In preparing the teaching process, there were two steps that would be completed. The first was preparing appropriate materials for teaching and learning process during the treatments for the experimental class. The second was organizing teaching procedures in experimental and control classes.

In the experimental class, the teaching materials and media are highly related to the implementation of the use of songs in teaching speaking, where as in the control class, the teaching materials and media are conventional speaking media.

### 3.4.2 Conducting an Observation

Before conducting the research at the purposed school, it was necessary to administer an observation. The observation was done to get information about the background of the students and condition of the school, whether the required facilities were available at the school.

### 3.4.3 Testing the instruments

Before the instruments were used in the study, a pilot test was conducted to test the instruments. The pilot test was done in another class to investigate and

get the validity and reliability of the instruments. The try-out test consisted of one questions related to the syllabus and materials that were being taught at the school. The test materials were adapted from some textbooks and other sources. The pilot test was established in class V11-A of SMPN 29 Bandung on March 3, 2011 before the experimental teaching began.

### 3.4.4 Administering Pre-Test

Pre-test was administered before conducting treatments and given to both experimental and control class. The pre-test was done to find out whether the experimental and control class are significantly different. If both classes are not significantly different, they can be used as the sample of the research. In addition, the pre-test was done to investigate the value of normality of distribution and homogeneity of variance to determine if the study uses a parametric or non-parametric test, so that the research could be done with appropriate procedures.

### 3.4.5 Conducting Treatments

Two classes were selected as the experimental class (VII-D) and the control class (VII-E). The experimental class was given some treatments and media related to the use of songs in improving students' speaking ability, while the control class was taught by using conventional techniques and media in their speaking lesson. A schedule of treatments was arranged to make well-establish treatments. The following was the schedule of the treatments.

**Table 3.2**
**Schedule of the Treatment**

| No | Experimental group | | Control group | |
|---|---|---|---|---|
| | Date | Material/theme | Date | Material /theme |
| 1 | 07-03-11 | - Pre-test | 04-03-11 | - Pre-test |
| 2 | 08-03-11 | - How to plant potatoes | 08-03-11 | - How to plant potatoes |
| 3 | 14-03-11 | - How to make a cup of tea | 14-03-11 | - how to make a cup of tea |
| 4 | 15-03-11 | - How to make a simple kite | 18-03-11 | - how to make a simple kite |
| 5 | 21-03-11 | - How to boiling egg in simple an easy way | 21-03-11 | - How to boiling egg in simple and easy way |
| 6 | 22-03-11 | - How to make a simple meatball | 25-03-11 | - How to make a simple meatball |
| 7 | 4-04-11 | - How to make a call in cellular phone. | 4-04-11 | - How to make a call in cellular phone |
| 8 | 11-04-11 | - Post-test & Questionnaire | 11-04-11 | - Post-test & Questionnaire |

### 3.4.6 Administering Post-Test

After conducting some treatments, at the end of the experiment, post-test was administered. The post-test was given to both experimental and control class. It was done to verify the effectiveness of songs in teaching speaking procedural text; whether the posttest scores of the experimental and control class are significantly different. If both classes' scores are significantly different; the scores of experimental class are higher than the scores of the control class, the songs are effective in improving students' speaking comprehension.

### 3.4.7 Administering Questionnaire

After conducting posttest, questionnaire was given to find out the students' response toward the use of songs in learning speaking procedural text. It was

given to students of the experimental class. It consists of 5 questions covering 5 aspects: students' comprehension, students' motivation, students' participation, students' difficulty, and teacher's performance.

### 3.4.8 Data Analysis

After collecting the data from the sample, data analysis was conducted with some procedures. There were several procedures in analyzing the obtained data. They were:

### 3.4.8.1 Scoring Technique

In assessing students' speaking ability through speaking tests, there should be scores and criteria which gave brief explanation for every score given. To obtain valid score that represent students' ability in speaking, it needs clear criteria to assess their work. To fulfill this need, the research adopted from Sapani (1990:12-16). The criteria assessed in this rubric covers grammar, pronunciation, vocabulary and fluency. The point of each criterion is in range of 1 to 5; therefore, the maximum raw score is 20. Criteria of assessment in conducting the pre-test and post-test were described more details as follows:

**Table 3.3**
**Criteria of Assessment of (Generic Structure) Grammar**

| Criteria | Score point 5 | Score point 4 | Score point 3 | Score point 2 | Score point 1 |
|---|---|---|---|---|---|
| CONTEXT<br><br>• Present context (purpose & detail)<br>• Anticipate reader needs (purpose & detail) | Meets all the criteria listed in score point 4<br><br>Enables people to execute the procedure succesfully | Sets context; present enough information so that people know when the procedure is appropriate (purpose&detail)<br><br>Anticipate people's needs; e.g., provide description and list of materials to be used, or indicates conditions for use (detail) | Contextual information is thin (purpose & detail)<br><br>Provides materials that user will need but may not adequately indicate necessary conditions for use (detail) | Context may be missing (purpose & detail)<br><br>Provides materials that user will need but does not include statements about necessary conditions for use (detail) | Present no context.<br><br>May give list of materials. |
| ORGANIZATION<br>• Delineate steps in procedure<br>• Provide transitions between steps<br>• conclude | | Organize the steps of procedure clearly and logically<br><br>Provide clear transitions between steps.<br><br>Conclusion advances people understanding or appreciation of the process. (organization) | Organizes the steps of procedure clearly and logically<br><br>Uses some appropriate transitions.<br><br>Conclusion may be weak (organization) | Steps for carrying out the procedure may not be clear.<br><br>Transition may be missing<br><br>Minimal closure (organization) | Steps for carrying out the procedure are incomplete or unclear.<br><br>Transition are missing or used inappropriately<br><br>Simply stops no closure (organization) |

**Table 3.4**
**Criteria of Assessment of Pronunciation**

| Score | Criteria |
|---|---|
| 5 | Phonemically accurate clear pronunciation throughout and correct |
| 4 | Occasional phonemic errors but generally comprehensible and nearly perfect |
| 3 | There exist several errors in pronunciation but it is generally accepted |
| 2 | Many phonemic errors, very difficult to perceive meaning. |
| 1 | Incomprehensible and many words mispronounced and incorrect |

**Table 3.5**
**Criteria of Assessment of Vocabulary**

| SCORE | CRITERIA |
|---|---|
| 5 | The words used are selected and have variation, they are relevant with the situation, condition, and the listener's status so that the meaning make sense |
| 4 | The word choice generally relevant with the situation and have variation but there sometime appears inappropriate words which do not change the meaning of the sentence |
| 3 | The words have already been relevant with the topic and situation; they however do not have any variation yet. |
| 2 | There are still lots of words used inappropriately |
| 1 | Poor and irrelevant words related to the topics and the situation given. |

**Table 3.6**
**Criteria of Assessment of Fluency**

| Score | Criteria |
|---|---|
| 5 | The speaker speaks naturally and continuously |
| 4 | The speaker generally speaks naturally and continuously but there sometime pauses at the unnatural points in the utterance |
| 3 | There are some pauses but speaker manages to rephrase and continue. |
| 2 | It run less continuously, there often pauses |
| 1 | There are long pauses, utterances left unfinished or no response. |

### 3.4.8.2 Analyzing Data on the Pre-Test

The aims of the pre-test are both to investigate the students' initial ability and to investigate the initial equivalence between the groups.

### 3.4.8.2.1 Normality of Distribution

Analysis of normality of distribution on pre test was conducted to find out the scores of the experimental and control classes whether normally distributed or not. To analyze normality of distribution, Kolmogrov-Smirnov formula was used in SPSS 16 for windows. If the Asymp. Sig > level of significance (0.05), the scores on pre test was normally distributed.

### 3.4.8.2.2 Homogeneity of Variance

Analysis of homogeneity of variance on pre test was conducted to find out whether variance of the experience and control classes was homogenous. To analyze homogeneity of variance, Levene Test formula in SPSS 16 for windows was used in SPSS 16 for windows. If the probability > the level of significance (0.05), variance of the experimental and the control classes was homogenous.

### 3.4.8.2.3 The Independent T-test on Pretest

Analysis of the independent t-test on pretest was conducted to find out whether there is significant difference between the pretest means of the experimental and control classes. Independent sample test formula in SPSS 16 for windows was used. If the Asymp. Sig > level of significance (0.05), means of the experimental and control classes on pretest were significantly different.

**3.4.8.2.4 Analyzing Data on the Post-Test**

The aim of the post-test is to verify the effectiveness of the treatments. The independent *t*-test was used to analyze the posttest scores of the experimental and control class. Furthermore, Hatch and Farhady (1982:114) state three assumptions underlying the *t*-test as follows:

- The subject is allotted to one group in experiment.

- The variances' scores are equal and normally distributed.

- The scores on the independent variable are continuous.

Accordingly, the normality distribution and variance homogeneity test were done before calculating the data using *t*-test formula.

**3.4.8.2.5 Normality of Distribution**

Analysis of normality of distribution on post test was conducted to find out whether the scores of the experimental and control classes were normally distributed. To analyze normality of distribution, Kolmogrov-Smirnov formula was used in SPSS 16 for windows. If the Asymp. Sig > level of significance (0.05), the scores on post test was normally distributed.

**3.4.8.2.6   Homogeneity of Variance**

Analysis of homogeneity of variance on post test was conducted to find out whether variance of the experience and control classes was homogenous. To analyze homogeneity of variance, Levene Test formula in SPSS 16 for windows

was used in SPSS 16 for windows. If the probability > the level of significance (0.05), variance of the experimental and the control classes was homogenous.

### 3.4.8.2.7   The Independent T-test on Posttest

Analysis of the independent t-test on posttest was conducted to find out whether there is significant difference between the posttest means of the experimental and control classes. Independent sample test formula in SPSS 16 for windows was used. If the Asymp. Sig > level of significance (0.05), means of the experimental and control classes on posttest were significantly different.

### 3.4.8.2.8   Effect Size Computation

The effect size refers to the effect of the influence of independent variable upon the dependent variable (Coolidge, 2000:151). The calculation of effect size was conducted to measure how well the treatments worked. In order to determine the effect size in the independent t-test, a correlation coefficient of effect size can be derived as follows:

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

Where: $r$ = effect size

$t$ = $t_{obt}$ or t value from the calculation of independent $t$-test

$df$ = N1 + N2 – 2

To interpret the computation result, the following scale was used as guidance in determining the effect size in the dependent variable:

**Table 3.7**

**The Effect Size Scale**

| Effect Size | $r$ Value |
|---|---|
| Small | 0.100 |
| Medium | 0.243 |
| Large | 0.371 |

### 3.4.8.3 Analyzing Data on the Experimental Class Scores

To investigate whether or not the difference between the pre-test and post-test means of the experimental class was significant, the matched $t$-test in SPSS 16 for windows was used to analyze the pre-test and post-test scores. If the probability is more than or equal to the level of significance, there is no significant difference between the pre-test and post-test scores.

### 3.4.8.4 Analyzing Data on Questionnaire

The data obtained from questionnaire were analyzed and described using qualitative approach. The data were the experimental students' response toward the use of the treatments. In addition, the percentage formula is used in analyzing the questionnaire. The data are interpreted based on the frequency of students' answers.