CHAPTER III

METHODOLOGY

This chapter describes the procedure of the study in order to find the answers of the two questions previously stated in chapter one. The chapter covers the research design, the instrument, population and sample and data analysis.

3.1 Research Methods

This research primarily used a quantitive method to analyze the data with a quasi-experimental method chosen to test the hypothesis because the study focused on only one aspect of investigating, namely, oral communication skill without controlling all variables (Gall et.al., 2003:402). For that reason, this research used two classes: the first class was structured as a control class and the second class functioned as an experimental class.

3.1.1 Research Design

This study used a quantitative method that deals with data in the form of scores and numbers. The study also used the quasi experimental design. The quasi experimental design is applied when it is not feasible to use random selection and random assignment (Gall et al., 2003)

Furthermore, the research used the *t*-test with the primary purpose of which to figure out whether the means of two group scores differ to a statistically significant degree (Kranzler & Moursund, 1998)

The specific quasi design of the study was a nonequivalent control group design, the pretest – posttest nonequivalent groups design. Gall et al (2003:402) says that the pretest-posttest nonequivalent groups design is often used in class experiments when experimental and control groups are such naturally assembled groups as intact classes which may be similar.

The formula is expressed as follows:

G1 T1 X T2

G2 T1 T2

From the design above two classes were selected for the experiment. One class was as an experimental group (G1) which was given a treatment (X) and the other class was a control group (G2) which was not given a treatment.

A Pretest (T1) was administered before the implementation of the educational debating method as the treatment, and then at the end of the treatment periode, a posttest was held to asses the students' speaking ability.

3.1.2 Variables

Variables are the conditions or characteristics which the experimenter can manipulate, control, or observe. There were two variables in this study. The first was an independent variable and the second was a dependent variable.

Hatch and Farhady (1982) says that an independent variable is the major variable which is investigated. In this study, the educational debating method as the teaching method was the independent variable and was the major variable to be investigated. Still, according to Hatch and Farhady (1982) the dependent variable is the variable which is observed and measured to determine the effect of the independent variable. The variable that was influenced by the independent variable in this study was the students' oral communication ability.

3.2 Hypothesis

This study begun with Null Hypothesis (Ho) where both classes conducted; experimental and control classes are similar.

Ho: $\mu_{experimental} = \mu_{control}$

It means that there was no difference between experimental class and control class in the *mean* adjustment level (Gerald Kranzler and Janet Moursund; 1999). By using null hypothesis, every possibility of the research

could be shown. If the Hypothesis was rejected, it can be concluded that experiment worked. While if the hypothesis was accepted, the experiment did not worked.

So the null hypothesis of this study was the educational debating method was not effective in improving students' oral communication skills.

3.3 Subjects

3.3.1 Population

According to Arikunto (2006), population is any group of individuals that have one or more characteristics in common that attract the researcher. The population of this research was the second grade of students of SMA and SMK Pelita Bangsa Bandung which was grouped into three classes.

3.3.2 Sample

The samples of this research were two classes (XI SMK AND XI IPS SMA) which were selected based on the classification made by the school. Class XI SMK acted as the experimental group and XI IPS SMA as the control group. Each class consisted of 20 students. Thus the fixed number of sample was 40 students. During the experiment, the experimental group was given several treatments in a period of four meetings.

3.4 Research Instruments

The TOEIC Test of Spoken English which aimed to measure students' speaking ability was used as the instrument of this research. Barron (2004) says that TSE is a test that used to measure students' oral communication skills ability. During this test, students are asked to give responds and opinions to a series of tasks provided. This test was chosen because it is a standardized test that commonly used in Senior High School and Vocational High School students and it has similarity with debate method in terms of giving respond. This test is considered relevance with the method of treatment, since the educational debating method used in this research mainly concern to the mastery of elements of speaking, and not to hand down true or false argument.

This oral communication tests was tested to the experimental and control classes. The oral communication test was used in the pre-test and post-test and given to the experimental and control group. The aim of the pre-test was to discover the students' previous ability in speaking and then the post-test was conducted to assess the students' oral communication ability after the treatments.

However, before applying the instrument to the control and the experimental groups, the value of its validity and reliability was computed. Thus that the instrument was tested to another class in order to obtain validity and reliability.

In formulating the items of the test, there are some points to be considered: first, the relevance of the items to the purpose of the study, second appropraiteness of the arguments, and third the relevance of the items to the curriculum.

The following is the syllabus of the Senior High School in speaking aspects that were taken as consideration in developing the test items :

Table 3.1

Syllabus of Eleventh Grade in Senior High School

Aspect	StandardCompetence	Basic Competence
Speaking	Explain meaning in oral functional text and a simple short monolog in the form of *report*, *narrative* dan *analytical exposition in daily life context*	Explain meaning in monolog text by using spoken language accurately, fluently, and appropriately in daily life context in the form of descriptive and procedure text.

(Source: KTSP 2005)

3.5 Research Procedure

3.5.1 Organizing Teaching Procedure

The researcher performed as teacher and facilitator in both the experimental and control groups. In preparing the teaching process, the writer conducted two steps: first, preparing appropriate materials for teaching and learning process during the treatment and second, organizing teaching procedures in the control and experimental group.

In the experimental group, the teaching materials and procedures were highly related with the implementation of educational debate method in speaking. While in the control group, conventional speaking materials and teaching procedures were applied.

3.5.2 Administering the Try-out test

Before the instrument was used in the research, the researcher administered the test to investigate the validity and reliability of the instrument. The test consisted of debating performance. The test was conducted in class XI SMA IPA on August 12, 2010 before the experimental teaching begun.

3.5.3 Treatment

Two second grade classes in SMK and SMA , which were XI SMK as the experimental group were exposed to the educational debating method while XI IPS SMA as the control group was taught by using the

conventional technique in teaching. The conventional technique was by memorizing dialogue.

3.5.3.1 Implementation of Experiment

Arranging the general schedule of experiment was intended to make a well-established experiment. The table below is the schedule of the experiment.

Table 3.2

Schedule of the Study

NO	Experiment Group		Control Group	
	Date	Material/ Theme	Date	Material/Theme
1	29 September 2010	Pre Test: Giving Opinions based on task	1 October 2010	Pre Test: Giving Opinions based on task
2	8 October 2010	Analytical exposition in daily life context:	6 October 2010	Analytical exposition in daily life context:

		Celebrities and Politics		Celebrities and politics
3	15 October 2010	Analytical exposition in daily life context: Foods and Health	13 October 2010	Analytical exposition in daily life context: Foods and Health
4	22 October 2010	Pre Test: Giving Opinions based on task	25 October 2010	Pre Test: Giving Opinions based on task

3.5.3.2 Classroom Activities of Experimental Group

The following are the experimental group activities:

1. Teacher presentation

   Before beginning the lesson, the teacher described and explained about different kinds of oral communication skills and how many of those various English oral communication skills appeared in most exams. Then the teacher proposed a certain technique in speaking, namely the educational debating method, as one of the solutions to overcome and improve their oral communication skills. The teacher

explained the theories, usages and implementation of the educational debating method. Hence, the motion and handouts were distributed to students.

2. Team discussion or casebuilding

   After receiving the handouts and the explanation of the educational debate method, the students discussed the topics and decided on the definition of the motion, built their cases and arguments, searched supporting facts and ideas from handouts and prepared their speeches.

3. Debate performance

   After finishing the casebuilding, the students were asked to perform the debate as a positive team or a negative team.

3.5.3.3 Classroom Activities of Control Group

1. Teacher explanation

   The teacher explained the topic and material to the students. The teacher gave the handouts to students to summarize and memorize the handouts

2. Individual Work

   The students memorized the handouts and then were asked to retell the content of the text.

3.5.4 Administering the Pre-test and Post-test

To investigate the students' initial ability, a pretest was conducted. It was given to both experimental and control groups. Afterward, to investigate the effectiveness of the educational debating method in teaching oral communication skill, at the end of the program a post-test was given to both groups.

3.6 Data Analysis

3.6.1 Scoring Technique

The tests used in this research were standardized essay items from TOEIC. The test results of this research were used to analyze oral communication skill through debating. According to IELTS (International English Language Testing System) the criteria of speaking test are fluency and coherence, lexical resource, grammatical range and accuracy, and pronounciation.

Fluency

10 = the students have the ability to talk with normal levels or continuity

8-9 = the students talk 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 a normal level of continuity

5-6 = hesitant responses and there are many pauses in utterance

<5 = there are many long pauses and often incomplete responses

Grammar

10 = the students use appropriate and accurate words and convey the information clearly

8– 9 = almost there are no grammatical error and convey the information clearly

7 = there are some grammatical errors but the information has clear meanings

5-6 = there are frequent grammatical errors and unclear meanings

<5 = no context are innacurate grammar and unclear meaning

Context

10 = the students give relevant and contextual responses

8-9 = the students convey the contextual responses and irrelevant responses

6-7 = there are some redundancy responses and irrelevant responses

<5 = no context of the responses and irrelevant responses

Vocabulary

10 = the students use an appropriate, varied and relevant words to the context

8-9 = almost there are no irrelevant and innapropriate words to the context

7 = there are some inapropriate and irrelevant words to the context but the information still has clear meaning

5-6 = there are less variation of words and there are many inappropriate words but the informaton still has clear meaning

<5 = there are excessive repetition, inappropriate words and unclear information

The criteria above are used in analyzing the students' performance toward the TOEIC spoken test, but to see the students' scores improvement, this study used the Harris probable class performance. The scores in Harris probable class performance are gained from the students' average scores from all aspect of speaking that has been examined based on IELTS criteria speaking test. Based on Haris (1969: 134), the scores of the probable class performance are as follows:

Table 3.3

Classification of the Range Scores

Test Scores	Probable Class Performance
80 – 100	Good to excellent
60 – 79	Average to good
50 – 59	Poor to average
0 – 49	Poor

The criteria of classification above are as follows:

- Poor means that the student cannot communicate effectively in spoken English or the student tried to answer the tasks but were unable to express him/her clearly;
- Poor to average means that the student can be understood, but with difficulty;
- Average to good means that the student's spoken English is understandable, but he/she makes some errors;
- Good to excellent means that the student can communicate effectively in spoken English.

3.6.2 Data Analysis on the Try-out Test

The obtained data from the try out test were analyzed to investigate the validity and reliability of the test items. The valid and reliable items were used as the research instrument. According to Hatch and Farhady (1982) to conduct data gathering procedure, validity and reliability of the instruments are essential.

3.6.2.1 Instrument Validity and Reliability

Validity and reliability are qualities that are essential for the effectiveness of any data gathering procedures, Hatch and

Farhady (1982). Hatch and Farhady (1982) defines validity as the quality of data gathering instruments or procedure while reliability is the quality of consistency of instruments over a period of time.

3.6.2.2 Instrument Validity

The data of validity were calculated by Anates V4 program.

According to Arikunto (2009), the criteria to measure the validity test results are as follows:

$0{,}80 < r_{xy} \leq 1{,}00$	= very high
$0{,}60 < r_{xy} \leq 0{,}80$	= high
$0{,}40 < r_{xy} \leq 0{,}60$	= moderate
$0{,}20 < r_{xy} \leq 0{,}40$	= low
$0{,}00 < r_{xy} \leq 0{,}20$	= very low

(Arikunto, 2006)

The data obtained from the try-out test were analyzed using Anates V4. The purpose was to investigate the validity of the test items.

The results of the statistical computation of the try-out test can be seen in the following table.

Table 3.4

Computation of the Try-out Test

New Items	Original items	Level of difficulties	Correlation	Sign. Of Correlation
1	1	Moderate	0.299	-
2	2	Moderate	0.725	Very significant
3	3	Moderate	0.761	Very significant
4	4	Moderate	0.625	Significant
5	5	Moderate	0.673	Significant
6	6	Moderate	0.761	Very significant
7	7	Moderate	0.310	-
8	8	Moderate	0.602	Significant
9	9	Moderate	0.724	Very significant
10	10	Moderate	0.725	Very significant

Based on table 3.4, it can be seen that there are three categories of validity of try out items. There are 5 items which are categorized as very significant items, 3 items which are categorized as significant

items and 2 items categorized as insignificant. The items which are categorized as insignificant were not used in this research because they are invalid. In conclusion, the total number which can be used as the instruments in collecting data in the pre-test and the post-test is eight items.

3.6.2.3 Instrument Reliability

According to Hatch and Farhady (1982), reliability can be defined as the consistency degree of the instrument or procedure. The data were calculated by Anates V4 program.

According to Arikunto (2006), the criteria to measure the reliability test are shown in table 3.5.

Table 3.5

r Coefficient Reliability

R Coefficient	Reliability
0.00 - 0.20	Almost none
0.21 – 0.40	Low
0.41 – 0.60	Moderate

0.61 – 0.80	High
0.81 – 1.00	Very High

(Arikunto, 2005)

The result of the computation using Anates V4 is presented in table 3.6

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Table 3.6

Reliability Statistics

Anates V4 program Reliability	N of items
0.95	10

Table 3.5 shows that the reliability of the instrument is 0.95. It means that the test has very high reliability. As a result, it can be used as a research instrument (Arikunto, 2006).

3.6.3 Data Analysis on the Pre-test

The aims of a pretest are both to investigate the students' initial ability and to investigate the initial equivalence between the groups. The researcher used a *t-test* formula. The researcher conducted

the normality distribution and variance homogenity test before calculating the data using the *t-test* formula.

3.6.3.1 Normality of Distribution Test

In this study, the researcher used the SPSS 15 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)

   Ho = the scores of the experimental and the control group are normally distributed
2. Analyzing the normality distribution using the Kolmogrov – Smirnov formula in SPSS for windows
3. Comparing the assymp.Sig with the level of significance to test the hypothesis. If the Asymp. Sig is higher than level of significance (0.05), the null hypothesis is accepted and the scores are normally distributed.

3.6.3.2 The Homogeneity of Variance Test

In analyzing the variance of homogeneity of the scores, the researcher used the Levene Test Formula in SPSS 15 for window. The analysis of variance homogeneity follows the steps below:

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

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

2. Analyzing the variance homogeneity using the Levene Test formula in SPSS for windows.
3. Comparing the probability with the level significance for testing the hypothesis. If the probability is greater than the level of significance (0.05), the null hypothesis is accepted and the variance of the experimental and control group are homogenous.

3.6.3.3 The calculation of the 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)

   Ho = the two samples are from the same population; there is no significant difference between the two samples (Xe = Xc)

2. Finding the t value
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 (The calculation were performed in SPSS 15 for window).

3.6.4 Data Analysis on the Post-test

In calculating the posttest data, the researcher used the same steps as in calculating the pretest data. The researcher used a *t*-test formula.

3.6.5 Data Analysis on the Experimental and the Control Group Scores

To investigate whether or not the difference of the pre-test and post-test means of each group is significant, the researcher analyzed the pre-test and posttest scores using the matched *t*-test (Hatch and Farhady, 1982). The steps are as follows:

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

   Ho = there is no significant difference between the pre-test and post-test scores.

2. Finding the t-value
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 were performed in SPSS 15 for window).

The scores of pre and post test for the experimental group are also being computed to find the level of students' oral communication skills before and after treatment. To investigate the mastery of oral communication skills, computing the average of each test are necessary. By doing so, the average scores of each test will be found, so the mastery of each test will be known. The formula to compute average will look as follows:

$$Mx = \frac{\sum x}{N}$$

Where:

Mx = average x (before treatment)

$\sum x$ = the sum of x scores (pre test)

N = the number subjects

And

$$My = \frac{\sum y}{N}$$

Where:

My = average y (after treatment)

$\sum y$ = the sum of y scores (post test)

N = the number subjects

After finding the average of each test, it is necessary to interpret what it means. The interpretation will lead us to knowing the extent of the mastery of oral communication skills before and after a treatment is given.