

CHAPTER III

RESEARCH METHODOLOGY

This chapter provides the application of the research, based on the methodology that was explained previously in chapter one. It includes research method, population and sample, research instrument, research procedure, and data analysis procedure.

3.1 Research Method

In investigating the effectiveness of CLT approach, two classes of second grade are randomly assigned. The first class is used as a control group and the other class as an experimental group which acquires some treatment as a part of CLT approach. In view of the fact that experimental method is employed in this research, the writer uses the score of pre test and post test of the experimental and control group to collect the data. The pre test is given in the beginning of the course with the intention of finding out the primary difference between experimental and control groups. After the treatment, post test will be given. After the scores are complete, the result from two groups was calculated statistically.

In conducting the research, some steps were utilized (Airasian et al, 2006:234). It was initiated with selecting and defining the problem. It followed with selecting and measuring partakers.

After that, a research plan was organized and the procedure was conducted. The next step was analyzing the data. Those entire steps were ended with formulating the conclusions.

3.1.1 Research Design

Quasi experimental design was employed in this research. The design of this research was represented as follow:

G1	T1	x	T2
<hr/>			
G2	T1		T2

Through this design, there were an experimental group (G1), control group (G2), pre test (T1), post test (T2), and treatment (x).

(Hatch and Farhadi 1982: 22)

3.1.2 Variables

Students' speaking ability was measured in order to investigate the effectiveness in using CLT. There were two variables in this research: independent variable which is *Communicative Language Teaching* and dependent variable which is *students' speaking ability*.

3.2 Population and Sample

Airasian et al (2006:116) state that population is the group to which a researcher would like to generalize the result of the study.

Hence, the population of this research was ten classes of the second year of SMA Kartika Siliwangi I Bandung. This level was specifically chosen because unexpected outcomes such as damage that can be caused by the failure possibility of this research were avoided.

Individuals, items, or events selected from a larger group referred to as a population formulate sample (Airasian, 2006:99). Purposive sampling was employed because there were

some assumptions before, for example the two classes taken have some common characteristics. Their mean scores were approximately same. There were two classes take place as samples. XI-1 was the experimental group and XI-2 was the control group. Both of those classes consisted of 36 students.

Samples in quantitative studies should be as large as possible. In other words, the larger the sample, the more representative it is likely to be, and the result of the study will be more generalizable (Airasian, 2006:116). However, there was a possibility of not all of the students completely attended the class during the research. Consequently, 30 students of each class as sample were taken

3.3 Research Instruments

Instrument is a tool which is used to collect data (Airasian et al, 2006:122). Speaking tests, which was served as research instruments, were employed in order to investigate the effectiveness of using CLT in developing students' speaking ability. Thus, the speaking test was in form of short talk.

3.3.1 Pre test and Post test

The same instrument for both experimental and control group as the pre test and post test was applied. The test was short talk. Short talk was chosen because it was obviously a realistic test of sustained speech since the subjects of short talk is something students are familiar with (Heaton, 1988:102). Therefore, pre test and post were administered in the form of short talk.

A number of topics were given to the students. They chose one of them and spoke about the topic chosen. The evaluation of pre test and post test were based on some criteria; accuracy,

fluency, and comprehension.

3.3.2 Instrument for the Treatment

The materials given for both control group and experimental group were adopted from English text book of second grade of senior high school entitled *Look Ahead: An English Course* by Eudia Grace and Th. M. Sudarwati.

The experimental group was instructed with CLT. In the other hand, control group persisted with the currently used method.

3.3.3 Recorder

Recording device to record students' short talk during oral test in pre test and post test was utilized. The tool was used because of its accessibility in assessing process.

3.4 Research Procedures

3.4.1 Pre test

The pre test was aimed to find out the students' initial achievement of their speaking ability before the treatment. The pre test was conducted on February 2nd 2009. Students were asked to come forward to teacher's desk and the pre test was given in the form of short talk.

3.4.2 The Treatment

Both experimental group and control group were taught with different method. While

experimental group was taught using CLT, control group was taught by practicing dialogue from the text book. The treatment was conducted from February 9th 2009 to February 27th 2009. There are two meetings per week and each meeting consists of two credit hour. The schedules of experimental group treatments were as follow:

3.4.3 Post Test

The post test is aimed to measure the improvement of students' speaking ability. It had the same procedure with pre test. It was carried out on March 3rd 2009

3.5 Data Analysis Procedures

Analyzing the students' score of the two groups in post test using t-test in order to find out whether or not there was a significance improvement in their scores was carried out after the determining of the two groups. Those data were interpreted. The data computations of those first three steps above were done using SPSS 15.0. Additionally, to answer the second research questions, the questionnaire were distributed. Describing students' responses toward CLT approach were done using descriptive analysis.

If the interpretations of data want to be valuable, the measuring instruments used to collect data must be both valid and reliable (Airasian et al, 2006:134). Hence, validity and reliability is important. Data computation will be done using SPSS 15.0

3.5.1 Validity

According to Airasian et al (2006:134), validity is the degree to which a test measures what it is intended, consequently, permits appropriate interpretation of scores. To calculate the validity of the test, *Pearson Product Moment Formula* was used as presented below:

(Priyatno, 2008:18)

Note:

r_{ix} = coefficient correlation between i and x variable

n = number of subjects

\bar{i} = the average score of i

\bar{x} = the average score of x

The criteria of validity are as follow:

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

Furthermore, the analyzing of r_{xy} with 5% level of significance ($p = 0.05$) could determine the significance of correlation. If $p < 0.05$, which signified that the correlation is

significant. Whereas, if $p > 0.05$, the correlation is not significant. The result of calculation using SPSS 15.0 was presented as follow

Table 3.1
Pearson Product Moment Correlation
Correlations

		accuracy	fluency	comprehension	Total score
Accuracy	Pearson Correlation	1	,489(**)	,643(**)	,870(**)
	Sig. (2-tailed)		,006	,000	,000
	N	30	30	30	30
Fluency	Pearson Correlation	,489(**)	1	,554(**)	,799(**)
	Sig. (2-tailed)	,006		,001	,000
	N	30	30	30	30
Comprehension	Pearson Correlation	,643(**)	,554(**)	1	,851(**)
	Sig. (2-tailed)	,000	,001		,000
	N	30	30	30	30
Total score	Pearson Correlation	,870(**)	,799(**)	,851(**)	1
	Sig. (2-tailed)	,000	,000	,000	
	N	30	30	30	30

** Correlation is significant at the 0.01 level (2-tailed).

From the table 3.1, it can be seen that each item has Pearson Correlation value (r_{xy}) within the criteria of *very high*, *high*, and *very high* correlation. Each item has the probability $p < 0.05$ which indicated that the correlation is significant. Therefore, the instrument that is used in this research is valid.

3.5.2 Reliability

Reliability is the degree to which a test consistently measures whatever it is measuring (Airasian, 2006:139). Since the scores obtained in the test using scales, Alpha Cornbach formula was used. The formula of Alpha Cornbach is listed as follow:

(Arikunto, 2002)

Note:

r_{11} = reliability of the instrument

k = number of items

σ^2_{xi} = the sum of item's variance

σ^2_x = total variance

The result of reliability was interpreted using these following criteria:

0.00 – 0.20	low
0.21 – 0.40	moderate
0.41 – 0.70	high
0.70	very high

Furthermore, the Alpha value was compared to the r table with $df = N - 2$. If the Alpha value is bigger than the r table, it follows that the instrument is reliable. The results of calculation using SPSS 15.0 are as follow:

Table 3.2
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Accuracy	6,17	,971	,637	,710
Fluency	6,20	1,269	,569	,761
comprehension	6,37	1,275	,698	,649

Table 3.3
Reliability Statistics

Cronbach's Alpha	N of Items
,783	3

From the table 3.2, it can be seen that all of the corrected item total correlation is in the criteria of *high* correlation. The Alpha value with 3 items as seen in table 3.3 is 0.783.

Sekaran as cited in Priyatno (2009) stated that less than 0.6 of reliability is low, 0.7 is acceptable, and more than 0.8 is good. The Alpha value is 0.783. The r table (with 5% level of significance and two tailed) is 0.361. The entire items in corrected item total correlation are bigger than r table. As a result, the instrument used in this research is reliable.

3.5.3 Pre test Data Analysis

The procedures of pre test data analysis begun with the calculation of normality distribution, the calculation of homogeneity of variance, and ended with the calculation of T Test. This section also presented the calculation of normality distribution and homogeneity of variance while the calculation of T Test will be presented in chapter IV.

3.5.3.1 Calculation of normality distribution test

Kolmogorov Smirnov Test was utilized to find out the normality distribution of pre test.

The results of calculation using Kolmogorov Smirnov Test are as follow:

Table 3.4
Normality Test of Pre Test in Control Group
One-Sample Kolmogorov-Smirnov Test

		control_group
N		30
Normal Parameters(a,b)	Mean	7,27
	Std. Deviation	2,243
Most Extreme Differences	Absolute	,247
	Positive	,247
	Negative	-,156
Kolmogorov-Smirnov Z		1,355
Asymp. Sig. (2-tailed)		,051

a. Test distribution is Normal.
b. Calculated from data.

Table 3.5
Normality Test of Pre Test in Experimental Group
One-Sample Kolmogorov-Smirnov Test

		Experimental group
N		30
Normal Parameters(a,b)	Mean	7,47
	Std. Deviation	2,389
Most Extreme Differences	Absolute	,230
	Positive	,230
	Negative	-,151
Kolmogorov-Smirnov Z		1,262
Asymp. Sig. (2-tailed)		,083

a. Test distribution is Normal.

b. Calculated from data.

When significance (Asymp Sig) is higher than 0.05, the distribution of pre test score is normal. In contrast, when significance is less than 0.05, the distribution of pre test score is not normal. Table 3.4 shows that the Asymptotic Significance (Asymp Sig) of control group is 0.051, whereas the Asymp Sig of experimental group is 0.083. Both of them are higher than 0.05. In other words, the distribution of pre test score is normal.

3.5.3.2 Calculation of homogeneity variance test

To investigate the homogeneity of pre test score, *Levene Test* was applied. The results of calculation using *Levene Test* are presented as follows:

Table 3.6
Homogeneity Test of Pre Test in Control and Experimental Group

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
,165	1	58	,686

The criterion of homogeneous variance is when the probability is higher than 0.05 ($p > 0.05$), while if the probability is less than 0.05 ($p < 0.05$), the variance is not homogeneous. Table 3.6 shows that the significance value (sig.) is 0.686. It follows that the probability is higher than 0.05 ($p > 0.05$). In conclusion, the sample of the population is homogeneous.

3.5.3.3 Calculation of t test

Independent sample t Test in SPSS 15.0 was used to compare means between control group and experimental group before the treatment was conducted.

3.5.4 Post test Data Analysis

The procedure of post test data analysis was similar with pre test data analysis. In calculation of t Test, paired sample t Test also used to find out the means between two groups after the treatment was conducted. This section also presented the calculation of normality distribution and homogeneity of variance while the calculation of T Test will be presented in chapter IV.

3.5.4.1 Calculation of Normality Distribution

Kolmogorov Smirnov Test was utilized to find out the normality distribution of pre test. The results of calculation using Kolmogorov Smirnov Test were as follow:

Table 3.9
Normality Test of Post Test in Control Group
One-Sample Kolmogorov-Smirnov Test

	control_group
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N		30
Normal Parameters(a,b)	Mean	9,27
	Std. Deviation	1,311
Most Extreme Differences	Absolute	,200
	Positive	,200
	Negative	-,179
Kolmogorov-Smirnov Z		1,093
Asymp. Sig. (2-tailed)		,183

a. Test distribution is Normal.

b. Calculated from data.

Table 3.10
Normality Test of Post Test in Experimental Group
One-Sample Kolmogorov-Smirnov Test

		Experimental group
N		30
Normal Parameters(a,b)	Mean	11,00
	Std. Deviation	2,197
Most Extreme Differences	Absolute	,242
	Positive	,242
	Negative	-,115
Kolmogorov-Smirnov Z		1,326
Asymp. Sig. (2-tailed)		,059

a. Test distribution is Normal.

b. Calculated from data.

When the significance (Asymp Sig) is higher than 0.05, the distribution of post test score is normal. In contrast, when significance is less than 0.05, the distribution of post test score is not normal. Table 3.9 shows that the Asymptotic Significance (Asymp Sig) of control group is 0.183, whereas the Asymp Sig of experimental group is 0.059 (table 3.10).

Both of them are higher than 0.05. Thus, the distribution of post test score is normal.

3.5.4.2 Calculation of Homogeneity of Variance

To investigate the homogeneity of pre test score, *Levene Test* was applied. The results

of calculation using *Levene Test* are presented as follows

Table 3.11
Homogeneity Test of Post Test in Control and Experimental Group
Test of Homogeneity of Variances

score			
Levene Statistic	df1	df2	Sig.
4,917	1	58	,031

The criterion of homogeneous variance is when the probability is higher than 0.05 ($p > 0.05$), while if the probability is less than 0.05 ($p < 0.05$), the variance is not homogeneous. Table 3.11 shows that the significance value (sig.) is 0.031. It follows that the probability is less than 0.05 ($p < 0.05$). Thus, the sample of the population is not homogeneous. In other words, after some treatments were given, there were numerous differences between control and experimental group.

3.5.5 Questionnaire Analysis

The formula of percentage was used in analyzing the questionnaires. The data were interpreted based on the frequency of students' answers.

The formula of percentage to calculating the questionnaire is as follow:

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

Note:

P = Percentage

Fo = frequency of students' answers

n = the number of students

To interpret the data which were derived from the questionnaire, the criteria below were used:

P (%)	Criteria
0	None
1 – 25	A few of
26 – 49	Nearly half of
50	Half of
51 – 75	More than a half of
76 – 99	Nearly all of
100	All of

Table 3.12 The criteria of Questionnaire Data Analysis

Kuntjaraningrat (In Stiawandi, 2006)

After the reliability and validity of instruments were revealed and followed by the normality and the homogeneity of both experimental and control group, the calculation using t-test and the descriptive analysis will now be presented in the following chapter.