

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter elaborates the methodology of the research, which has been briefly introduced in Chapter I. The discussion of this chapter covers statement of the problem, research method, variables, subjects of the research, instruments, data collection procedure, and data analysis. Furthermore, this chapter also provides the preparation, tabulation, and implementation stages in analyzing the data.

#### **3.1 Statement of the Problem**

This research tried to investigate two problems. Those problems are formulated in the following research questions.

- 1) Is there a significant difference between the group that used collaborative writing method and the group that did not use this method?
- 2) What are the students' perceptions towards the use of collaborative writing method in the writing class?

#### **3.2 Research Method**

This research was conducted through a quantitative research, which is a systematic scientific investigation involving analysis of data collection in the form of numbers and statistics. According to Neill (2007), the aims of the quantitative research are to classify and count features, also to construct the statistical models in an attempt to explain what is observed in a research.

Since the research designs of the quantitative research are varied (such as: *pre-experimental*, *true experimental*, *quasi-experimental*, *ex post facto*, and *factorial designs*), a careful choice of design will help the writer. Moreover, based on Mason and Bramble (1978: 107), the quasi-experiment is different from the true-experiment because in the former case, the researcher does not control over the experimental variables completely, or the subjects will not be assigned to treatments randomly. Therefore, in this research, the writer chose to construct a *quasi-experimental design: nonequivalent-control-group design* (Mason and Bramble, 1978: 100) represented in the following figure.

Figure 3.1 The Nonequivalent-control-group Design



From Figure 3.1,  $O$  symbol refers to process observation or measurement, and  $X$  symbol represents the exposure of a group to an experimental variable (the treatment). In order to examine whether or not the treatment has an effect on the performance of experimental group, the differences between  $O_1$  and  $O_2$  in the two groups are further compared. Besides, the dashed line separating the parallel rows in the figure indicates that the experimental and control groups have not been equated by randomization; that is why this design uses the term 'nonequivalent'.

Like a *control group pretest-posttest design*, this research also engaged control group and experimental group, in which those groups were given a pre-test and a post-test. Here, the pre-test was given to capture students' initial ability from the experimental and control groups before the treatment was delivered to

the experimental group, while the post-test was given after the treatment in order to find out the significant improvement in the experimental group.

Based on the above Figure 3.1, further, the research design can be simplified into the following table.

Table 3.1 Research Design

Group Category	Pre-test	Treatment	Post-test
Experimental Class	$T_1$	X	$T_2$
Control Class	$T_1$	-	$T_2$

According to Table 3.1,  $T_1$  refers to the pre-test given to both experimental and control groups. Further, X refers to the treatment of collaborative writing method given to the experimental group, while  $T_2$  refers to the post-test given to both experimental and control groups. Finally, the result can be recognized by compared the differences between  $T_1$  and  $T_2$ .

### 3.3 Research Variables

Sutrisno Hadi (cited in Arikunto, 2006: 116) defined a variable as an object of the research that varies. Besides, based on Hatch and Farhady (1982: 12), a variable is defined as “an attribute of a person or of an object which varies from person to person or from object to object”. Furthermore, in general, variables are divided into quantitative and qualitative variables.

However, in order to assess the influence of a treatment in research, variables can be defined as independent and dependent variables. According to Hatch and Farhady (1982: 15), the independent variable is the major variable that a researcher hopes to investigate, and the dependent variable is the variable that

the researcher observes and measures to determine the effect of the independent variable. Also, in this research, the independent variable was known as the treatment variable. Thus, the independent variable of this research was the effectiveness of using collaborative writing method, and the dependent variable was the students' writing ability.

### **3.4 Subjects of the Research**

Based on Arikunto (2006: 129), subject where data are gained is called as the source of data in a research. Further, based on the subject where the data are placed, Arikunto (2006: 129) identified the sources of data into three levels of *p*, which are *person*, *place*, and *paper*. Besides, Arikunto (2006: 130) also classified the sources of data based on the areas made as the subject of the research. In this case, those sources that many researchers usually use are *population* and *sample*.

#### **3.4.1 Population**

In the *Encyclopedia of Educational Evaluation* (cited in Arikunto, 2006: 130), *population* is defined as "a set (or collection) of all elements possessing one or more attributes of interests". Moreover, Coolidge (2000: 24) stated that population is "most often a theoretical group of all possible scores with the same trait or traits". Simply, a population is the whole subjects of a research.

Referred to the above definitions, the population of this research was the second grade of SMPN 7 Bandung enrolled in academic year 2008/2009 spreading into ten classes from VIII.A to VIII.J. The writer conducted the research to the second grade students due to the following reasons: the writer thought that

the second grade students of SMPN 7 Bandung were appropriate to be engaged in this research; there were limitations of time, energy, and fees; and the previous research conducted by Hadriyansyah (2006) had already chosen the UPI's students as the subjects. Besides, based on the writer's experience when she conducted teacher training in SMPN 7 Bandung, the second grade students still had difficulties and made some mistakes in writing.

### **3.4.2 Sample**

Based on Arikunto (2006: 131), sample is a half or the representative of the examined population. In addition, Coolidge (2000: 24) stated that sample is "a smaller group of scores selected from the population of scores". Further, sample should be chosen with a certain technique in order to get a sample that describes the real population.

Since a research needs a technique to get the sample, Setiyadi (2006) exposed two models of sampling procedure, which are probability sampling and non-probability sampling, in a quantitative research. Further, Setiyadi (2006) stated that a kind of probability sampling is cluster sample, which is defined as a procedure of taking sample in a population involving some different groups that are in the same stratum. Therefore, by considering the above definition and that the second grade of SMPN 7 Bandung consists of ten classes relatively having same characteristics, the writer chose two classes (VIII.A and VIII.B) as the samples based on cluster sampling.

After the samples were selected, those two classes were determined to be the experimental group and the control group. Hereafter, class VIII.A became the experimental group, while class VIII.B became the control group. Further, both experimental and control groups would fill out the pre- and post- tests. In this case, the experimental group would get a treatment using collaborative writing method, yet the control group learned in the conventional way.

Table 3.2 Subjects of the Research

Group Category	Class	Number of Students
Control Class	VIII.B	37 students
Experimental Class	VIII.A	37 students
Total		74 students

### 3.5 Research Instruments

The next step in this chapter is aimed at choosing and organizing the instruments. According to Arikunto (2006: 149), instrument is a medium of collecting data used when the research is delivered by using a certain method. In other words, this research must gain some information and data about the topic of this research before the data were analyzed. Furthermore, Arikunto (2006) noted that instruments can be in the form of *test, questionnaire, check-list, interview guide, documentation guide, and check-list.*

For the purpose of collecting data, the instruments of this research were “test” and “questionnaire”. In this case, the test was specifically categorized as an achievement test. Additionally, Arikunto (2006: 151) stated that *achievement test* is a test used to measure the students’ achievement after those students learn something. Since this research aimed at finding out the effectiveness of using

collaborative writing method to increase students' writing ability, the tests used as instrument in this research were in the form of "writing tests", which were divided into "pre-test" and "post-test".

Firstly, the *pre-test* was designed to measure the initial ability of the students from both groups before the experimental group received the treatment of collaborative writing method. Secondly, the *post-test* was further managed after the treatment had been completed. The test used for both tests was in the form of free composition. Here, the writer created the worksheet by herself and chose descriptive text as the appropriate genre for the second grade students. At last, this research used "questionnaire" as the instrument to get more information from the respondents in terms of their individual report (Arikunto, 2006: 151).

### **3.6 Data Collection Procedure**

Collecting data is one important work in a research. Therefore, in collecting the data, this research applied some procedures. Firstly, the writer prepared the research by observing on the spot and preparing the teaching material for the instruments. Secondly, the writer searched many literature related to the research from the library and network in order to gather the theoretical foundation supporting this research. Thirdly, the writer delivered a try-out test to the class of VIII.C. Next, the subjects of this research (classes of VIII.A and VIII.B) took the pre-test. Furthermore, the experimental group received a treatment that was collaborative writing method, yet the control group learned in the conventional way or did not get the treatment. After receiving the treatment, the experimental

and control groups were given the post-test. Finally, the experimental group would also fill out the questionnaire relating to the treatment of using collaborative writing method. Briefly, the writer will explain those procedures in the following details.

### **3.6.1 Research Preparation**

In preparing the research, the writer observed the spot of the research. After that, the preparation was focused on the teaching material and instruments. Besides, the writer needed to arrange the time allocation of the research.

Firstly, the term “material” or often “lesson” is defined as “a unified set of activities that cover a period of classroom time” (Brown, 2001: 149). Since this research engaged the second grade students of junior high school, the classroom time ranged from forty to eighty minutes. Moreover, for the materials, the writer adapted with *School Based Curriculum Development*, English syllabus, textbooks, and certain topics learned by the second grade students of SMPN 7 Bandung. Here, the books used by the students were *Effective English 2* by Soegeng H. S. and *BKS PILA Bahasa Inggris* by Emed Hidayat *et al.* Besides, the writer also searched and added the materials from network or other sources, and the writer focused the materials on writing skill by still relating to one or two of other skills.

Secondly, to accomplish every event of this research, this research needed to be planned in a well-organized time schedule. In this case, this research was held for about one month from October to November 2008. Thus, the treatments’ schedule of the research is presented below.



Table 3.3 Schedule of Teaching

No.	Date	Material	
		Experimental Group	Control Group
1.	October 27 <sup>th</sup>	Pre-test	Pre-test
2.	October 31 <sup>st</sup>	Lesson 1: Descriptive Text	Lesson 1: Descriptive Text
3.	November 3 <sup>rd</sup>	Lesson 2: Short Functional Text "Invitation"	Lesson 2: Short Functional Text "Invitation"
4.	November 7 <sup>th</sup>	Lesson 3: Recount Text	Lesson 3: Recount Text
5.	November 10 <sup>th</sup>	Lesson 4: Daily Activity	Lesson 4: Daily Activity
6.	November 14 <sup>th</sup>	Post-test and Questionnaire	Post-test

### 3.6.2 Research Implementation

#### 3.6.2.1 Library Research

Library research is one of procedures in collecting data to gather the theoretical foundation that supports the research. For the purpose of completing the theories relating to writing skill, teaching writing, and collaborative writing in the theoretical foundation, the writer read research papers, books, journals, articles, and other literature related to the research. To find those literature, the writer mostly searched in the library and network.

#### 3.6.2.2 Try-out Test

Based on Heaton (1995), a good test must be valid, reliable, and practicable. Besides, Arikunto (2006: 168) stated that a good instrument must achieve at least two important requirements, which are valid and reliable. For that purpose, in this research, the writer first tried out the instrument to another class in the same grade (VIII.C) before the pre-test was administered.

Moreover, the writer first consulted the instrument to the supervisors of this research before the instrument was tested to the students. This try-out test was

conducted in one meeting consisting of two hours instruction (2 x 40 minutes), and this test only involved 31 students because some students were absent at that time. In this research, the students were asked to compose a descriptive text consisting at least two paragraphs (identification and description).

### **3.6.2.3 Pre-Test**

According to the teaching schedule, the pre-test was the first writing test administered to both experimental and control groups at the beginning of the research. The pre-test was aimed for gaining the data of the students' initial writing ability. Besides, this test was administered to ensure that the students of both groups had the same English background and proficiency before the experimental group received the treatment. In addition, this pre-test was carried out to find out the equivalent of experimental and control groups.

### **3.6.2.4 Treatment**

In this research, collaborative writing was used for implementing the treatment in teaching writing to the experimental group, yet the control group was treated using the conventional method. The writer conducted the treatment for four times to the experimental group (class of VIII.A) after the writer consulted this matter to the supervisors. Here, the experimental group was asked to write a composition based on the certain genre and adapted to the English syllabus of the second grade of junior high school (see Section 3.6.1).

The procedures of the treatment were preceded firstly by asking the students to compose a certain text based on those students' ideas. The second step

was changing each work to other students in each group in order to revise the work collaboratively and to give comments on the work. The next step was editing the revised work by each student. Finally, those students had to collect the works in the form of portfolio to be further assessed by the writer.

### **3.6.2.5 Post-Test**

Similar to the procedures of doing pre-test, post-test was the second writing test delivered to both experimental and control groups. At the end of the research, the writer administered post-test in order to find out the result of the treatment. The aim of this test was for finding whether or not there are any significant differences between students' scores of the experimental and control groups after the treatment was conducted to the experimental group. In other words, the post-test was carried out in order to investigate the effectiveness of collaborative writing method in teaching writing to the second grade students of SMPN 7 Bandung.

### **3.6.2.6 Questionnaire**

In this research, questionnaire was applied as the additional instrument to find out the students' responses towards the treatment of using collaborative writing method and factors contributing to the success of this method in teaching writing. This questionnaire was only distributed to the experimental group because this group received the treatment. Here, the questionnaire was created by using Indonesian language after the writer considered the English level of the second grade students of junior high school. Besides, this questionnaire was delivered in the form of close-ended questionnaire.

### 3.7 Data Analysis

The data gained from the first test to the questionnaire had to be calculated and analyzed in order to find out the result of the research. Since this research was basically intended to investigate the effectiveness of using collaborative writing method to increase students' writing ability in SMPN 7 Bandung, the data obtained from the research would be analyzed using *Microsoft Office Excel 2007*, *SPSS 15.0 for Windows Evaluation Version*, and the certain statistical formula by following some certain procedures.

As Arikunto (2006: 235) stated, analyzing the data generally includes three stages that are *preparation*, *tabulation*, and *implementation*. Briefly, the writer will explain those procedures in the following details.

#### 3.7.1 Data Preparation

In this preparation stage, the writer made some analyses in order to check and arrange the data for the next stage. Firstly, after the writer delivered all instruments to the students, the writer checked the completeness of the students' identity, the completeness of data, and the students' answers in each instrument.

Further, since the main data were gained in the form of written achievement tests, the writer needed to assess and score those writing tests before the writer analyzed the result of those tests in the next stage. Therefore, in this research, the scoring system of the students' written works was based on *ESL Composition Profile* created by Jacobs *et al.* (1981 cited in Weigle, 2007: 116), and the scoring standard of *ESL Composition Profile* is described in Table 3.4.

Table 3.4 ESL Composition Profile

Aspects of Writing	Score	Level	Criteria
Content	30-27	Excellent to very good	knowledgeable • substantive • thorough development of thesis • relevant to assigned topic
	26-22	Good to average	some knowledge of subject • adequate range • limited development of thesis • mostly relevant to topic, but lacks detail
	21-17	Fair to poor	limited knowledge of subject • little substance • inadequate development of topic
	16-13	Very poor	does not show knowledge of subject • non-substantive • not pertinent • OR not enough to evaluate
Organization	20-18	Excellent to very good	fluent expression • ideas clearly stated/supported • succinct • well-organized • logical sequencing • cohesive
	17-14	Good to average	somewhat choppy • loosely organized but main ideas stand out • limited support • logical but incomplete sequencing
	13-10	Fair to poor	non-fluent • ideas confused or disconnected • lacks logical sequencing and development
	9-7	Very poor	does not communicate • no organization • OR not enough to evaluate
Vocabulary	20-18	Excellent to very good	sophisticated range • effective word/idiom choice and usage • word form mastery • appropriate register
	17-14	Good to average	adequate range • occasional errors of word/idiom form, choice, usage <i>but meaning not obscured</i>
	13-10	Fair to poor	limited range • frequent errors of word/idiom form, choice, usage • <i>meaning confused or obscured</i>
	9-7	Very poor	essentially translation • little knowledge of English vocabulary, idioms, word form • OR not enough to evaluate
Language Use	25-22	Excellent to very good	effective complex constructions • few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions
	21-18	Good to average	effective but simple constructions • minor problems in complex constructions • several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions <i>but meaning seldom obscured</i>
	17-11	Fair to poor	major problems in simple/complex constructions • frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions • <i>meaning confused or obscured</i>
	10-5	Very poor	virtually no mastery of sentence construction rules • dominated by errors • does not communicate • OR not enough to evaluate
Mechanics	5	Excellent to very good	effectively demonstrates mastery of conventions • few errors of spelling, punctuation, capitalization, paragraphing
	4	Good to average	occasional errors of spelling, punctuation, capitalization, paragraphing <i>but meaning seldom obscured</i>
	3	Fair to poor	frequent errors of spelling, punctuation, capitalization, paragraphing • poor handwriting • <i>meaning confused or obscured</i>
	2	Very poor	no mastery of conventions • dominated by errors of spelling, punctuation, capitalization, paragraphing • handwriting illegible • OR not enough to evaluate

### 3.7.2 Data Tabulation

In this second stage, after the writer described and classified the scoring standard of the writing test based on the ESL Composition Profile (Jacob *et al.*, 1981 cited in Weigle, 2007: 116), the writer firstly scored the students' writing tests. Furthermore, the scoring standard involves *content*, *organization*, *vocabulary*, *language use*, and *mechanics* as applied in Appendix 5.

### 3.7.3 Data Implementation

#### 3.7.3.1 Test Instrument Analysis

As Hatch and Farhady (1982: 243) stated, three basic characteristics of tests involve reliability, validity, and practicality. Thus, in this research, the writer first tried out the instrument to another class in the same grade (class of VIII.C) before the pre-test was administered. This try-out test was carried out in order to measure reliability, validity, and practicality of the instrument. To gain the result of the try-out test, those three characteristics will be analyzed in the following details by using the certain statistical formula.

##### 1) Reliability Analysis

Reliability is a crucial characteristic of a good test, for a test must first be reliable as a measuring instrument before the test is administered in a research. Based on Hatch and Farhady (1982: 244), reliability is “the extent to which a test produces consistent results when administered under similar conditions”. For that purpose, in administering the try-out test, the students should do the test within specified time period, and they were not allowed to take the test at home.

Since the main instrument of this research was in the form of essay test, firstly, the writer assessed students' composition by using the analytic scales in ESL (Jacobs *et al.*, 1981 cited in Weigle, 2007: 116). Furthermore, the writer analyzed the instrument reliability by using *Alpha Cronbach* formula (Arikunto, 2006: 196; Sugiyono, 1999 cited in Sintiani, 2006: 30-31), and the procedures are:

- a. determining the variance of item ( $s_i^2$ );

$$s_i^2 = \frac{JK_i}{n} - \frac{JK_s}{n^2}$$

where

$JK_i$  = sum of square of item,       $JK_s$  = sum of square of subject,

$n$  = number of sample.

- b. determining the variance of total score ( $s_t^2$ );

$$s_t^2 = \frac{\sum x_t^2}{n} - \frac{(\sum x_t)^2}{n^2}$$

- c. determining the instrument reliability ( $r$ ) with the *Alpha* formula;

$$r = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum s_i^2}{s_t^2} \right)$$

where

$k$  = number of item

- d. checking the finding with the criteria of reliability.

Table 3.5 Criteria of Reliability

Criteria	Category
0.00-0.199	Very Low
0.20-0.399	Low
0.40-0.599	Moderate
0.60-0.799	High
0.80-1.000	Very High

(Riduwan, 2005 cited in Sintiani, 2006: 31)

## 2) Validity Analysis

Validity is also one of crucial characteristics that a good test must have. Based on Heaton (1995: 159), the validity of a test is “the extent to which it measures what

it is supposed to measure”. Therefore, in this research, the instruments would be valid if those instruments were able to measure the students’ writing ability.

Furthermore, Hatch and Farhady (1982) classified three basic types of validity: content validity, criterion-related validity, and construct validity. Since the main instrument of this research was in the form of written achievement test, the content validity was used for analyzing the instrument validity. Based on Hatch and Farhady (1982: 251), a content validity is defined as “the extent to which the test measures a representative sample of the subject matter content”.

In order to analyze the content validity of this instrument, the writer used the formula of determining the discrimination power proposed by Sugiyono (2008) and was helped by using *Microsoft Office Excel 2007*, and the procedures are as follows:

- a. determining the high and the low scores;
- b. taking 27% of the highest score and the lowest score;
- c. preparing the table in order to calculate easily;

Table 3.6 Calculation Form of the Lowest and Highest Scores

Highest Scores	Lowest Scores
...	...
$\bar{x}_1 = \dots$	$\bar{x}_2 = \dots$
$s_1 = \dots$	$s_2 = \dots$
$s_1^2 = \dots$	$s_2^2 = \dots$

- d. calculating the discrimination power by using the *t* test formula;

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s_{total} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where

$$s_{total} = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{(n_1 + n_2) - 2}}$$

- e. determining the degree of freedom (*df*);



$$df = n_1 + n_2 - 2 \text{ at the level of significance} = 5\%$$

- f. comparing the derived  $t$  ( $t_{observe}$ ) to the critical  $t$  ( $t_{table}$ );
- g. reporting the findings: if the  $t_{observe} > t_{table}$  meaning that the discrimination is significant, the instrument is considered as a valid instrument.

### 3) Practicality Analysis

After the reliability and validity of the instrument were investigated, the practicality of the instrument should also be analyzed. As Heaton (1995: 167) stated, a test must be practicable. In addition, Hatch and Farhady (1982: 254) stated some practical consideration as follows: the test should be easy to administer, the test should be as inexpensive as possible, the test should be easily to be scored, and the scores should be easy to interpret. For the purpose of practicality, the writer conducted the try-out test by considering those rules.

#### 3.7.3.2 Pre-test Data Analysis

Pre-test was the first writing test delivered to the experimental and control groups in order to find out the data of the students' initial writing ability. Since this research engaged two groups of participants, the experimental design and procedure were statistically analyzed by using *SPSS 15.0 for Windows Evaluation Version*, in which the formula of *Independent-Samples t Test* was used for calculating the data.

Based on Coolidge (2000: 143), to use the  $t$  test appropriately, there are several specific assumptions that must be met as follows: the participants must be

different in each group (independent groups), the dependent variable values come from a population of values that is normally distributed, and the variances of the two groups about the respective means will be equal or approximately equal (homogenous). For that purpose, the writer will analyze those assumptions in the following details.

1) Testing the Normality of Distribution

The aim of testing the normality of distribution is for finding out whether or not the samples are from a population of values that is normally distributed. In this research, *Kolmogorov-Smirnov* formula in *SPSS 15.0 for Windows Evaluation Version* was applied in testing the normality of distribution, and the procedures are as follows:

- a. stating the hypotheses in sentence and setting the level of significance at 0.05 (two-tailed test of significance);  
 $H_o$  : The scores of the experimental and control groups are normally distributed.  
 $H_a$  : The scores of the experimental and control groups are not normally distributed.
- b. calculating the normality of distribution by using *Kolmogorov-Smirnov* formula in *SPSS 15.0 for Windows Evaluation Version*;
- c. comparing the significant value (*Asymp. Sig.*) to the level of significance for testing the hypothesis and reporting the findings: “ $H_o$  is accepted if significant value exceeds level of significance at 0.05, meanwhile,  $H_o$  is rejected if significant value does not exceed level of significance at 0.05”.

## 2) Testing the Homogeneity of Variance

After the result of testing normality of distribution was found, the writer must also test the homogeneity of variance in this research by using *Levene Test* formula in *SPSS 15.0 for Windows Evaluation Version*. The procedures are as follows:

- a. stating the hypotheses in sentence and setting the level of significance at 0.05 (two-tailed test of significance);

$H_o$  : The variances of the experimental and control groups are homogeneous.

$H_a$  : The variances of the experimental and control groups are not homogeneous.

- b. calculating the homogeneous of variance by using *Levene Test* formula in *SPSS 15.0 for Windows Evaluation Version*;
- c. comparing the significant value (*Sig.*) to the level of significance for testing the hypothesis and reporting the findings: “ $H_o$  is accepted if the significant value (*Sig.*) exceeds the level of significance at 0.05, meanwhile,  $H_o$  is rejected if significant value (*Sig.*) does not exceed the level of significance at 0.05”.

## 3) Testing the *Independent-Samples t Test*

If the data of this research were proved as normal and homogeneous data, the next step was to test the hypothesis of the research. For that purpose, the writer decided to use the *Independent-Samples t Test* presented in *SPSS 15.0 for Windows Evaluation Version*.

- a. stating the hypotheses in sentence and setting the level of significance at 0.05 (two-tailed test of significance);

$H_o$  : There is no significant difference between the pre-test means for experimental group and control group.

$H_a$  : There is significant difference between the pre-test means for experimental group and control group.

- b. calculating the *Independent-Samples t Test* by using *SPSS 15.0 for Windows Evaluation Version*;

- c. comparing the significant value (*Sig.*) to the level of significance for testing the hypothesis and reporting the findings: “ $H_o$  is accepted if the significant value (*Sig.*) exceeds the level of significance at 0.05, meanwhile,  $H_o$  is rejected if significant value (*Sig.*) does not exceed the level of significance at 0.05”.

### 3.7.3.3 Post-test Data Analysis

Post-test was delivered in order to find out whether or not there is significant difference between students' scores of the experimental and control groups after the treatment was conducted to the experimental group. Since this test was similar to pre-test, the procedures of analyzing data of the post-test were also similar to the procedures of analyzing data of the pre-test.

### 3.7.3.4 Questionnaire Data Analysis

The questionnaire was analyzed to get a clearer evidence of the effectiveness of using collaborative writing method in increasing the second grade students'

writing ability in SMPN 7 Bandung and to investigate the students' perceptions towards the use of collaborative writing method in writing class. After the students took the post-test, those students were given list of simple questions to be answered based on the students' opinions. In this research, the questionnaire was in the form of close-ended questionnaire including 15 questions.

For that purpose, the questionnaire consisted of these three aspects:

- 1) Do the students think that collaborative writing method is helpful to them?
- 2) If collaborative writing method is helpful, why do the students think this method is helpful to them (in term of the advantages of this method)?
- 3) What are significant factors contributing to the success of writing that uses collaborative writing method?

In term of the second aspect, the advantages used in this research were based on the research of Hadriyansyah (2006) due to the suggestions from the supervisors. Finally, based on Ningrat (2000 cited in Sofianti, 2007), the data were analyzed quantitatively by using the formula of percentage and considering the criteria of percentage as follows:

$$P = \frac{F \times 100}{N}$$

where

$P$  = percentage,                       $N$  = response,  
 $F$  = frequency,                      100 = constant.

Table 3.7 Criteria of Percentage Categories

No.	Percentage of Respondent	Criteria
1.	1 – 25%	Small number of the students
2.	26 – 49%	Nearly half of the students
3.	50%	Half of the students
4.	51 – 75%	More than half of the students
5.	76 – 99%	Almost all of the students
6.	100%	All of the students