CHAPTER III

METHOD OF THE RESEARCH

In this chapter, the writer presents the method of the research. It deals with design of the research, population and sample, research setting, variables of the research, techniques of collecting data, research instruments, analyzing the data, methods of analyzing data.

3.1 Design of the Research

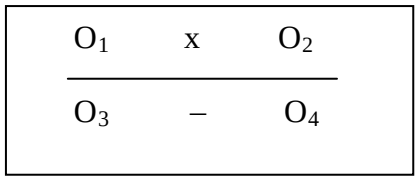
The research design for the study about teaching writing of descriptive text by using Think-Pair-Share Strategy (TPSS) was descriptive quantitative method and experimental research. This study belongs to a quantitative research focusing on quantitative data analysis. The quantitative data contain the numerical data. This research deals with experimental research. It is often associated with large-scale research, but can also serve small case, with case studies, action research, correlation research, and experiments (Cohen et. al., 2007:501).

The writer decided to use quasi - experiment design because it was in the natural setting but variables were isolated, controlled, and manipulated. The quasi experiment design used was non-equivalent of pretest and posttest design (Creswell, 1994:132). It means that in this research, the task of experimental and

control group was randomly selected. Both groups got pretest and posttest and the experimental group was treated.

Here is the diagram of this experimental model:

Figure 3.1 Diagram of Quasi - experimental method



(Cohen and Manion,1982:170)

O_1 : pretest of experimental group
O_2 : posttest of experimental group
O_3 : pretest of control group
O_4 : posttest of control group
x : Treatment
- : no treatment

Kinds of data used in this research were primary data. To collect the primary data we need to apply some methods, for example questionnaire, survey and so on. There were two data in the study. The data were quantitative and qualitative data. The quantitative data of this study were the score of the tests (pretest and posttest) in achievement of writing descriptive text. The qualitative data in this research were the result of questionnaire.

This was steps of applying Think-Pair-Share Strategy (TPSS) in writing process:

1. Reading or observing

   The teachers gave the task or material in the form of pictures to students. The students read material given or observed the pictures.

2. Individual think time

   It was time for students to think individually the task given by the teachers. Brainstorming process occurred in this time. The students tried to obtain ideas concerning the pictures given. They tried to think, guess, and get the vocabulary related to the pictures. Listing is a brainstorming technique in which students think about their topic and quickly make a list of whatever words or phrases come into their mind. Free writing is a brainstorming activity in which the students write about a topic because they are looking for a specific focus. The purpose of free writing is to generate the ideas as many as possible and to write them down without worrying about appropriateness, grammar, spelling, logic, or organization. Clustering is another prewriting technique. It is a visual way of showing how the student's ideas are circled and lined what they cluster on a diagram of the ideas.

3. Pair work

   The students in pair started discussing their ideas with their partner. This step was an opportunity to practice the collaborative skills of giving and

responding to praise. While discussing, they began to do prewriting such as listing, free writing, or clustering.

4. Planning process in writing

   The students do making sub list, writing the topic sentences and outlining.

5. Writing and revising drafts

   The students start writing descriptive paragraph based on the pictures. After finishing the rough drafts, they try to revise their writing.

6. Writing the final drafts

   The students write the final drafts in this step after revising the rough drafts.

7. Share with class or other pairs

   After finishing the final drafts, they share with other pairs. The purpose of sharing the final draft of their writing is to correct and revise to one another.

Besides applying Think-Pair-Share Strategy (TPSS), the writer also used teaching aids to help students produce ideas to start writing descriptive text. The pictures used were the picture of a busy railway station and a visit to a strange planet.

3.2 Population and Sample

Population and sampling are the components that can support the research and cannot lose. The population is the general component of the research and the sampling is the specific component of the research that is part of the population.

The population of this study is 143 students in Diploma III students in Taxation Study Program semester 2 Academic Year 2011 - 2012, the Faculty of Economics and Business, Diponegoro University. The reason to choose the students in the second semester is that they have much time in semester one and have gotten the basic English lesson.

The writer used random sampling technique because the population was homogenous. Every element of population can be selected and it has the same chance to be chosen. In this research, the samples are 28 students for experimental group and 28 students for control group.

3.3 Research Setting

This research was conducted in Diploma III Study Program in Taxation Study Program, Faculty of Economics and Business, Diponegoro University. The research started in March up to May 2012. It began in the first week of March and ended in the last May 2012. The students learnt the descriptive paragraph, which is one of materials taught for the second semester student in Diploma III in Taxation Study Program. The lesson was given once a week for both group and the duration was 150 minutes for each meeting as a part of the strategy.

There were two groups named experimental group and control group. The control group consisted of 28 students. In control group, the students were not given treatment; therefore, the lecturer taught them using direct method. The second group consisted of 28 students. This group was experimental group. The group was given treatment. Treatment means they were taught by using a certain strategy of teaching called Think-Pair-Share Strategy. In the beginning of the learning process, the writer did pretest toward the groups. In the end of learning process the students from both two groups were given post test to measure their performance their descriptive writing achievement, then the result of both two groups post test was compared using paired samples t – test.

3.4 Variables of the Research

Variables are the conditions or characteristics that the experimenter manipulates, controls, or observes (Best, 1997:93). There are two kinds of variables namely independent variable and dependent variable. The independent variable is the conditions that the experimenter manipulates in his attempt to ascertain their relationship to observed phenomena. The dependent variable is the conditions or characteristics that appear, disappear, or change as the experimenter introduces, removes, or changes independent variable. The independent variable of this research was the use of Think-Pair-Share Strategy in teaching descriptive text. The dependent variable was achievement of students' writing descriptive text.

3.5 Research Instruments

In collecting data, the writer used three kinds of research instruments. They were Observation, test and questionnaire. The elaboration of the three research instruments were described as follows:

3.4.1 Observation

The writer used this instrument in order to know and understand the situation that was being described. The observational data were beneficial for recording non-verbal behavior of the students.

3.4.2 Test

The other instrument to collect the data is test. Test is a set of questions or other practice or devise used to measure the skill, intelligence, ability, and talent of an individual or a group. The type of achievement test was used as one of the research instruments, because the goal of this test is to test the students about descriptive text and to measure what individual has learnt – his or her present level of performance.

3.4.3. Questionnaire

In this research, the aim of the questionnaire is to obtain the students' attitude concerning Think-Pair-Share Strategy applied in teaching descriptive text. The type of questionnaire is closed question because this type is quick to complete and straight forward to code and do not discriminate the respondents. There are twelve question in the questionnaire. The writer used Likert scale in this research.

3.6 Techniques of Collecting Data

The data were taken from the written test on experimental group, administrating to a study of the second semester Diploma III students in Taxation Study Program, Faculty of Economics and Business, Diponegoro University.

There are some steps used by the writer in collecting data on the experimental group. They were:

a. The researcher came into the class, which became subjects of research to observe them.
b. The researcher gave pretest to the students
c. The researcher taught writing theory and explained about descriptive text using Think-Pair-Share Strategy.
d. The researcher gave posttest to the students.
e. The researcher collected the tests.
f. The researcher spreaded out the questionnaire to the students and they answered the questions on it.

In addition, the writer also took data in the form of the written tests on the control group through the following steps;

a. The researcher got in the class and observed the students as subjects of research.
b. The researcher did pretest to the students of control group.
c. The researcher the theory of writing and described about descriptive text using direct method.

d. The researcher gave posttest to the students.

e. The researcher collected the tests.

3.7 Analyzing the Data

After collecting the data, the writer scores for each element of writing a use of generic structure as follows:

Table 3.1 Elements of writing score

Aspect	Score	Performance Description	Weighting
Content (C) 1. Topic 2. Details Total Score = 20	4 3 2 1	1. The topic is complete, clear and the details are relating to the topic. 2. The topic is complete, clear but the details are relating to the topic. 3. The topic is complete, clear but the details are not relating to the topic. 4. The topic is not clear and the details are not relating to the topic.	2x

Organization (O) 1. Identification 2. Description Total score = 20	4 3 2 1	1. Identification is complete and descriptions are arranged with proper connectives. 2. Identification is complete and descriptions are arranged with almost proper connectives. 3. Identification is not complete and descriptions are arranged with few misuses of connectives. 4. Identification is not complete and descriptions are arranged with misuse of connectives.	2x
Grammar (G) 1. Use present tense 2. Agreement Total score = 20	4 3 2 1	1. Few grammatical or agreement inaccuracies. 2. Few grammatical or agreement inaccuracies but no affect in meaning. 3. Numerous grammatical or agreement inaccuracies. 4. Frequent grammatical or agreement inaccuracies.	2x

Vocabulary (V) Total score = 20	4 3 2 1	1. Effective choice of words and word forms. 2. Few misuse of vocabularies, word form but not change the meaning. 3. Limited range confusing words and word form 4. Very poor knowledge of words, word forms and not understandable.	2x
Mechanics (M) 1. Spelling 2. Punctuation 3. Capitalization Total score = 20	4 3 2 1	1. It uses correct spelling, punctuation and capitalization. 2. It has occasional errors of spelling, punctuation and capitalization. 3. It has frequent errors of spelling, punctuation and capitalization. 4. It is dominated by errors of spelling, punctuation and capitalization.	2x

Adapted from Brown (2004: 244)

Score = C + O + G + V + M = 100

The formula was used to get the scores of the students' writing test. This formula was applied to find out the students' achievement in writing descriptive text. After getting result of the test, the writer formulates the result to gather the mean of each elements of written generic structure that researched by the writer as follow:

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

$\bar{x}$ the mean of score

$\sum x$ the sum of all score

N the total sample

(Ruseffendi,1998:77)

After finding out the mean of all the score, the result will be concluded based on the following:

Table 3.2 Scoring level

Level of Mastery	Predicate
80 - 100	Excellent
66 - 79	Good
56 - 65	Fair
40 - 55	Poor
30 - 39	Fail

(Arikunto, 2002:245)

3.8 Methods of Analyzing Data

3.8.1 Basic Assumption Test

In this part, there are three basic assumtion tests used namely normality test, test for linearity, and variance homogeinity test.

3.8.1.1 Normality Test

Normality tests are for testing whether the input data is normally distributed. The normality test is the statistics formula of chi-square for match test (Sudjana, 1996 : 293) is :

$$x^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

Where :

f_o : frequency of research result

f_e : frequency of theoretical

The criteria used to test the normality of the test is :

a. If the result significance level (x^2_{sum}) > $\propto$, it indicates that the data is normally distributed.
b. If the result significance level (x^2_{sum}) < $\propto$, it indicates that the data is not normally distributed.

Significance level ($\propto$) = 0,05

The data is normally distributed if $x^2_{sum} > x^2_{table}$.

3.8.1.2 Tests for Linearity

Tests for Linearity aim to prove whether two variables have a linear correlation. The test is usually used as pre-requirement in correlation analysis or linear regression. Testing on SPSS by using Test for Linearity

is in significance level 0,05. The two variables have a linear correlation if the significance level is less than 0,05. The rule used to know linearity relationship between the independent variables with the dependent variable is if the F-table (P)> F-Statistic (0.05), the

relationship is linear, if the F-Table (P) <F-Statistic (0.05), the relationship is not linear.

Table 3.3 the formula of the linearity test

variation source	dk	JK	KT	F
Total	N	$\sum Y^2$	$\sum Y^2$	
coefficient (a)	1	JK (a)	JK (a)	
coefficient (b)	1	JK (b/a)	$s^2_{reg} = JK(b/a)$	$\frac{s^2_{reg}}{s^2_{sisa}}$
Residual	(n-2)	JK (S)	$s^2_{sisa} = \frac{JK(S)}{n-2}$	
Linearity	k-2	JK (TC)	$s^2_{TC} = \frac{JK(TC)}{k-2}$	$\frac{s^2_{TC}}{s^2_G}$
Error (*galat*)	n-k	JK (G)	$s^2_G = \frac{JK(G)}{n-k}$	

Adapted from Sudjana (332:2005)

Description:

n = the number of data (respondents)

k = the number of data group related to variables (x)

3.8.1.3 Variance Homogeneity Test

Homogeneity of variance happens when the variance multiple samples is similar. The aim of variance homogeneity test is to find out the

variance homogeneity of experimental group and control group. The statistic formula of variance homogeneity test (Sudjana, 1996:263) is:

$$x^{2} = (1n10)\{\beta - \sum \quad (n_1 - 1) \log S_i^2$$

Where, across

n_1 = number of sample group i

$\sum X$ = variance of group i

S^2 = variance cluster

The criteria used to test the normality of the test are:

If the result of significance level is more than 0,05 or (x^2 sum) > α, it indicates that the data is homogenous but If the result of significance level is less than 0,05 or (x^2 sum) < α, it indicates that the data is not homogenous. Significance level (α) is 0,05 and the population is homogenous if x^2 sum > x^2 table.

3.8.2 The Reliability and Validity of Test Instrument

Research instrument is a device used by the researcher to collect the data. In this research, the writer used questionnaire as the instrument. According to Sugiyono (2004:267), research instrument is a device used by

the researcher to collect the data. In this research, the writer used questionnaire as the instrument.

Before the questionnaire given to the students, the questionnaire test is tested to find out the validity of the questionnaire. The questionnaire test was applied in Accounting class but in different class outside the control and experiment class. After scoring the result of the questionnaire, the writer made an analysis to find out the validity from that instrument.

3.8.2.1 Measuring Validity of the Questionnaire

Validity is a standard or criterion that shows whether the instrument is valid or not. A test is valid to the extent that it measures what is a claim to measure, to calculate the validity of each item the writer used the product moment formula (Arikunto, 2002:72).

$$r_{xy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N(\sum X^2) - (\sum X)^2\}\{N(\sum Y^2) - (\sum Y)^2\}}}$$

(Bachman, 2004:86 Tuckman, 1978:163)

Where,

r_{xy} : coefficient of correlation between variable x and y

N : the number of students/subject participating in the test

Σx : the number of test items

$\sum Y$: total score of test items

$\sum XY$: multiplication of items score and total score

$\sum X2$: Quadrate of number of test items

$\sum y2$: Quadrate of total score of test items

The questionnaire is valid if r table (r_{xy}) is more than 0,444 and if less than 0,444 it is not valid. After the instrument is tried out, it is analyzed yielding the following results below:

Table 3.4 Validity result

No.	Classification	Number of item
1	Valid	1,2,3,4,5,6,7,8,9,10,11, and 13
2	Invalid	12,14, and 15

3.8.2.2 Measuring Reliability of the Test

Reliability shows whether the instrument is reliable and can be used as a device to collect the data. Reliability means the stability of test scores when the test is used. A test reliable to the extent that is measures consistently, from one time to another. To measure the reliability of the test, the writer used the split half

Spearman-Brown. In this case, the writer split the item into add and even (Arikunto, 2002:100). The formula is:

$$r_{11} = \left(\frac{k}{k-1}\right)\left(\frac{1-\sum pq}{V_t^2}\right)$$

Where :

r_{11} : the reliability of the instrument

k : number of items

p : number of the students who answered the item correctly

q : number of the students who answered the item correctly

V_t^2 : total variance

To get the result of V_t^2, the formula used was :

$$Vt^2 = \frac{\sum Y^2 - \frac{(\sum Y)^2}{N}}{N}$$

Where :

$\sum Y^2$: sum of the square score from each student

$\sum Y$: sum of the score from each student

N : number of student

Measurement of reliability usually uses certain value. According to Sekaran (1992), reliability less than 0.6 is not good, 0.7 can be accepted and reliability more than 0.7 is good.

3.8.3 Hypothesis Test

The hypothesis tested is:

H_o : $\mu_1 = \mu_2$

H_a : $\mu_1 = \mu_2$

Where :

μ_1 = distribution of population score of control group

μ_2 = distribution of population score of experimental group

The statistic formula (t-test) if the variance is homogenous is:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{S\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$\text{with } S^2 = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1 + n_2 - 2}$$

Where :

S : standard deviation of two groups

S_i : standard deviation of group i

$\overline{X}_i$: Distribution of group i

n_i : number of sample of group i

3.8.4 Paired Sample T Test

Dependent samples (or "paired") *t-tests* typically consist of a sample of matched pairs of similar units, or one group of units that has been tested twice (a "repeated measures" *t*-test). A typical sample of the repeated measures *t*-test would be subjects tested prior to a treatment. Paired Sample t-test is used to find out whether there is difference of mean between two paired sample groups or not. It means that there is a sample, which is treated differently.

This test is used when the samples are dependent; that is, when there is only one sample that has been tested twice (repeated measures) or when there are two samples that have been matched or "paired". This is an example of a paired difference test.

$$t = \frac{\overline{X}_D - \mu_0}{s_D/\sqrt{n}}.$$

For this equation, the differences between all pairs must be calculated. The pairs are either one person's pre-test and post-test scores or between pairs of persons matched into meaningful groups (for instance drawn from the same level of class or group. The average (X_D) and standard deviation (s_D) of those differences are used in the equation. The constant μ_0 is non-zero if you want to test whether the average of the difference is significantly different from μ_0. The degree of freedom used is $n - 1$.