CHAPTER III

METHODOLOGY OF RESEARCH

This chapter discussed sources of data, time and setting of research, subject of research, variables and indicators of research, research design, instruments, procedures of experimentation, scoring technique, method of data analysis, and research procedures.

A. Time and Setting

This research was conducted on the first semester in the academic year of 2010/2011 for about 1 mount began from 27 September up to 26 October 2010. It was conducted in SMP H. Isriati Semarang, which was located on Jalan Abdul Rohman Saleh No. 285 Semarang.

B. The Subject of the Research

This study was conducted in SMP H. Isriati located at Jalan Abdul Rohman Saleh No. 285 Semarang. The subjects of this study were the eighth grade students of SMP H. Isriati in 2010/2011 academic year. This study was conducted in first semester. To limitation of time, the researcher did not take all students as the subjects of the study, but drew a sample.

1. Population

   Population can be defined as a group to whom the researcher would like to generalize the result of the study.[1] The population of the research was the eight grade students of SMP H. Isriati Semarang. Each class consists of twenty six or twenty seven students. The total population was 124 students.

2. Sample

   A sample is a group in research study on which information is obtain. Because the population of the study is big and in other that students

[1] Jack R. Fraenkel and Norman E, *How to Design and Evaluate Research in Education,* (Ny, McGraw Hill, 2006)

undisturbed, the researcher chooses the cluster random sampling in determining the sample of the study. This technique is similar with simple random sampling, but simple random sampling used individual selected, cluster random sampling used class selected. In it, the subjects were regarded that each of them has the equal chance to be chosen as the sample. This is the effective way of determining the sample of the study. Class VIII A was taken as the control class and VIII C was taken as experimental class.

C. Variables and Indicators of Research

According to Fred D. Kerlinger as cited by Arikunto, that all experiments have one fundamental idea behind them; to test the effect of one or more independent variables on a dependent variable (it is possible to have more than one dependent variable in experiments).[2]

This research, that used describing picture as method in teaching speaking in descriptive text, had two variables. Those variables were:

1. The independent variable

   The independent variable is the major variable which the researcher hopes to investigate. It is the variable which is selected, manipulated, and measured by the researcher.[3] The independent variable of this research was the using describing picture.

2. The dependent variable

   The dependent variable, on the other hand, is the variable which the researcher observe and measure to determine the effect of the independent variable.[4] The dependent variable of this research was improvement students' speaking skill in descriptive text.

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[2] Suharsimi Arikunto, *Prosedure Penelitian Suatu Pendekatan Praktik,* (Jakarta: PT. Rineka Cipta, 2006), p. 119.

[3] Hatch and Farhady, *Research Design and Statistic for Applied Linguistics*, London: Newbury House Publisher, INC, 1982, page: 15

[4] *Ibid*, page:15

3. Schematic of indicator variable:

Independent Variable (Describing Picture)	**Dependent Variable (Improvement Students' Speaking Skill in Descriptive Text)**
Sub-Variable a. Procedure of drawing picture technique: 1) Let the class work in pairs. 2) Give each pair two different pictures. Tell them not to look at each other's picture. 3) Ask A to describe his or her picture, and ask B to draw it. Ask B to do the same as what A does after B has finished drawing. 4) Have them to compare their picture with the original. 5) Improve students' pronunciation. 6) Improve students' grammar. 7) Improve students' vocabulary.	**Sub-Variable** a. Students can do activity in procedure of drawing picture technique. 1) Students can work in pairs. 2) Each pair delivered two different pictures. They can't look the picture of their friends. 3) A can describes his/her picture, and B draws it. A to do the same as what A does after B has finished drawing. 4) They compare their picture with the original. 5) Students can describe the picture with good pronunciation. 6) Students can describe the picture with good grammar. 7) Students can describe the picture with good

	vocabulary.
8) Improve students' fluency.	8) Students can describe the picture with good fluency.
9) Improve students' comprehension	9) Students' can describe the picture with good comprehension.

Success Indicators of using describing picture to improve students' speaking skill in descriptive text are as follows:

a. The improvement of students' speaking skill in descriptive text through the use of describing picture.
b. Students' speaking achievement with the minimum standard of score (KKM) speaking 6.7

D. Research Design

In this research, the researcher will focus on improving students speaking skill in descriptive text. Considering the purpose of the research and the nature of the problems, this research is a quantitative one. A scientific research has to use methodology the method used is an absorptive of the study and can be counted as scientific. The researcher uses experiment design to identify the effectiveness of using describing picture to improve students' speaking skill in descriptive text in SMP H. Isriati Semarang at the eighth grade in the academic year 2010/2011. Subject of this research are students of A class (24 students) and C class (24 students).

1. Experimental Research

According to Arikunto Suharsimi, experiment is the way to look for the cause of relationship "causebility" between experiment class and

control class.[5] This experiment aims at identifying increase the effectiveness of using describing picture technique to improve students' speaking skill in descriptive text.

Experimental research is one of the most powerful research methodologies that researchers can use. Many types of research that might be used, the experiment is the best way to establish cause-and-effect relationships among variables. Yet experiments are not always easy to conduct.[6]

An experimental research involved two groups: experimental group and control group. The experimental and control group are consisting of eight grade students of SMP H. Isriati. An experimental group received a new treatment while control group received a usual treatment. According to Nunan, experiment is designed to collect data in such a way that threats to the reliability and validity of the research are ministered.[7] This study used pre-test and post-test.

The design of the experiment could be described as follows:

$$\begin{array}{l} E\ 01\ X\ 02 \\ \hline C\ 03\ Y\ 04 \end{array}$$

Adopted from Arikunto.[8]

Where:

E = experimental group

C = control group

01 = pre-test for experimental group

02 = post test for experimental group

03 = pre-test for control group

04 = post test for control group

X = treatment by using describing picture

Y = treatment without using describing picture

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[5] Suharsimi Arikunto, *op. cit.*, p. 3.

[6] Jack R. Fraenkle, Norman E. Wallen, *op. cit.*, p. 267.

[7] David Nunan, *Research Method in Language Learning*, (Cambridge: Cambridge University Press, 1992), p. 47.

[8] Suharsimi Arikunto, *loc. cit.*, p. 86.

From the design above, subjects of research were grouped into an experimental group (top line) and a control group (bottom line). The quality of subjects was first checked by pre-testing them (01 and 03). Then, the experimental treatment (describing by using describing picture) was applied to the experimental group, while the control group was describing without describing picture. The results of post-test (02 and 04) were then computed statistically.

Activities should be conducted in experimental and control class as follows:

1. The Activities of Experimental Group
   a) Pre-test

      Pre-test was given before the treatments. First, the researcher came to the class. Then, he explained to the students what they had to do. Finally, she distributed the instruments and asked them to do the test.

   b) Activities in Experimental Group

      There were some activities in experimental group (Class VIII A) as follows:

No	Activities	Time Allotment
1	a) Teacher explains about descriptive text and gives example about descriptive text to the students. b) Teacher describes picture in front of class as example to the students. c) Teacher divides students to be five groups and every group consists of five students. d) Teacher asks students to discuss about the picture and make descriptive text	3x45’

	from the picture (under teacher controlled). e) Teacher asks one student from every group to describe the picture in front of class.	
2	a) Teacher divides students in pair. b) Teacher gives each pair two different pictures. Tell them not to look at each other's picture. c) Teacher asks A to describe his or her picture, and asks B to draw it. Teacher Asks B to do the same as what A does after B has finished drawing. d) Teacher asks them to compare their picture with the original.	3x45'
3	a) Teacher divides students in pair. b) Teacher gives each pair two different pictures. Tell them not to look at each other's picture. c) Teacher asks A to describe his or her picture, and asks B to draw it. Teacher Asks B to do the same as what A does after B has finished drawing. d) Teacher asks them to compare their picture with the original.	2x45'

c) Post-test

Post-test was held after all treatments were conducted. This test was used to measure students' achievement after they

were given treatments. The result of test was analyzed statistically.

2. The Activities of Control Group

a) Pre-test

Pre-test was given before the treatment. First, the researcher came to the class. Then, he explained to the students what they had to do. Finally, he distributed the instruments and asked them to do the test.

b) Activities for control group

There were some activities in control group (class VIII C) as follows:

No	Activities	Time Allotment
1	a) Teacher explains about descriptive text and gives example about descriptive text to the students. b) Teacher asks students to make descriptive text.	3x45’
2	a) Teacher divides students in pair. b) Teacher asks A to describe something to the couple (topic given by teacher). After that, teacher asks the couple to do the same what A does.	3x45’
3	a) Teacher divides students in pair. b) Teacher asks A to describe something to the couple (topic given by teacher). After that, teacher asks the couple to do the same what A does.	2x45’

c) Post-test

Post-test was held after all treatments were conducted. This test was used to measure students' ability after they were given treatments. The result of test was analyzed statistically.

E. Methods of Data Collection and Analysis

1. Source of Data

The data of this research were gathered from the oral test of students' in pre-test and post-test through using describing picture technique to improve student speaking skill in descriptive text and the documentation of students' previous summative test score.

2. Methods of Collecting Data

a. Test

Test is a set of questions and exercises used to measure the achievement or capacity of the individual or group.[9] In order to discover how students are thinking and using the target language (English). The researcher will conduct oral test in describing picture. The form of the test was direct test item of speaking because the researcher put the students in pairs and asked them to describe picture and the couple (A) of the pairs draw the picture that the couple(B) said, than asks (B) to do the same what (A) does. The pictures are picture of places (bedroom, living room, dining room, etc), person (thin man, fat man, tall man, short man, etc) and animals (tiger, cat, bird, etc). The researcher analyzed the result of the test and gave score. Harmer states that a test item is direct if it asks candidates to perform the communicative skill which is being test. The test will be conducted to both control class and experimental class which consist of 24 students of control class and 24 students of experiment class in form of descriptive text to evaluate students'

[9] Addision Wesley Longman, *Teaching by Principle : An Interactive Approach to Language Pedagogy*, (New York : A Person Education Company, 2001), 2nd Ed, p.384.

speaking before and after the treatment. The scoring system will pay attention to the five aspects of speaking scoring; grammar, vocabulary, fluency, pronunciation, and comprehension.

Test is used to measure the person's competence and to achieve the objective. The data was collected by giving speaking test. Speaking was conducted twice, there are pre-test and post-test. The form of the test is direct speaking test and the teacher gave scores on pronunciation, grammar, vocabulary, fluency, and comprehension.

b. Documentation

Another data is needed to help the researcher in this research. In addition to do that, data will be collected through documentation of the students' previous examination score from the school. It will be used to validate the sample. Documentation of students' speaking test recording is used to evaluate students' speaking skill.

F. Scoring Technique

The researcher gave speaking test to the students to analyze their scores on pronunciation, grammar, vocabulary, fluency, and comprehension.

In giving scores to the students, the researcher used analytic scale which categorized by some categories and the researcher follows these scoring criteria for each category. This analytic score has five items and each item scores five. So, the maximum score is 25. But it will be multiplied with 4, so the final maximum score will be 100.

Analytic scoring of speaking could be seen on the following figures:

Aspects	Score	Description
Pronunciation	5	Have few traces of foreign accent.
	4	Always intelligible, though one is conscious of a definite accent

	3	Pronunciation problem necessitate concentrated listening and occasionally lead to misunderstanding.
	2	Very hard to understand because of pronunciation problems, must frequently be asked to repeat.
	1	Pronunciation problems so severe as to make speech virtually unintelligible.
Grammar	5	Makes few (if any) noticeable errors of grammar and word order.
	4	Occasionally makes grammatical and/or word order errors which do not, however obscure the meaning.
	3	Make frequent errors of grammar and word order which occasionally obscure meaning.
	2	Grammar and word order errors make comprehension difficult. Must often rephrase sentences and/or restrict himself to basic patterns.
	1	Errors in grammar and word order so severe as to make speech virtually unintelligible.
Vocabulary	5	Use of vocabulary and idioms is

		virtually that of a native speaker.
	4	Sometime uses inappropriate terms and/or must rephrase the idea because of lexical inadequate
	3	Frequently uses the wrong words; conversation somewhat limited because of inadequate vocabulary.
	2	Misuse of word and very limited vocabulary make comprehension quite difficult.
	1	Vocabulary limitations so extreme as to make conversation virtually impossible.
Fluency	5	Speed as fluent and effortless as that of a native speaker.
	4	Speed of the speech seems to be slightly affected by language problem.
	3	Speed and fluency are rather strongly affected by language problems.
	2	Usually hesitant; often forced into silent by language limitations.
	1	Speech is so halting and fragmentary as to make conversation virtually

		impossible.
Comprehension	5	Appears to understand everything without difficulty.
	4	Understand nearly everything at normal speed, although occasional repetition may be necessary.
	3	Understand most of what is said at slower than normal speed with repetition.
	2	Has great difficulty following what is said. Can comprehend only "social conversation" spoken slowly with frequently repetitions.
	1	Can not be said to understand even simple conversation virtually impossible.

Based on "*Testing English as a Second Language*"[10]

G. Methods of Data Analysis

There are three kinds of test that will be held in experimental research**,** they are pre-requisite test, try-out test, item analysis, and hypothesis test. So there must be three process of analyzing the data collected from test.

1. Pre-requisite Test

Before the researcher determines the sample, the researcher should conduct a homogeneity test by choosing 2 classes with cluster

[10] David P. Haris, *Testing English as a Second Language*, (Washington DC: Georgetown University, 1969). p. 84.

random sampling. Before testing the hypothesis that is to compare the difference of students' academic achievement using t-test formula, there is a prerequisite test to know the legality of the sample. Here, the normality and homogeneity test are employed.

This test conducted to determine whether the data are homogenous or not. After conducted the test, data analysis was carried out to find out the data normality and the homogeneity of sample. It was meant to check if the research result met the requirement of good research or not. Data analysis discussed two main things:

a) Test of data normality

The first step that had to be done before doing the research was to test the data normality. It was aimed to know whether the data came from normal distribution or not. The researcher used Chi-Square formula, as follows:

$$X^2 = \sum_{i=1}^{k} \frac{(Oi - Ei)^2}{Ei}$$

Cited from Sudjana.[11]

Where:

X^2 = Chi-Square

O_i = Frequency that was obtained from data

E_i = Frequency that was hoped

k = the sum of interval class

If the obtained score was lower than t-table score by using 5% alpha of significance, Ho was accepted. It was meant that Ha was rejected.

[11] Sudjana, *Metoda Statistika*, (Bandung: Tarsito, 2002). P, 273.

b) Test of homogeneity

It was meant to get the assumption that sample of research came from a same condition or homogenous. The researcher used the formula as follows:

$$F = \frac{Biggest\ Variance}{Smallest\ Variance}$$

Cited from Sugiono.[12]

2. Try out Test

According to Mouly in Tiowati, a try out test is necessary since the result will be used to make sure that the measuring instrument has such characteristics as validity and reliability.[13] The instrument to be tried out was the composition test. The result of test was used to find out the validity and reliability.

a) Validity

Heaton states that validity is the extent to which it measure what is supposed to measure and nothing else.[14] The result was consulted to critical score for r-product moment. If the obtained coefficient of correlation was higher than the critical score for r-product moment, it meant that a paragraph was valid at 5% alpha level significance.

To calculate the validity, the researcher used the formula as follows:

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

[12] Sugiyono, *Statistika Untuk Penelitian*, (Bandung: Alfabeta, 2007), p. 140.

[13] Husni Mubarok, *The Effectiveness of Animated Film as Media in the Teaching of Narrative Writing (An Experimental Research at the Tenth Grade Students of MA Futuhiyyah 2 Demak in 2009/2010 Academic Year)*. (Semarang: IAIN WAlisongo, 2009), p. 32.

[14] J. B. Heaton, *Writing English Language Test*, (London: Longman, 1975), p. 153.

Cited from Arikunto.[15]

Where:

r_{xy} = the correlation of the scores on two halves of the test

N = the number of the students in each group

X = the score of each component of speaking scoring

Y = the sum of all dialogue's score

$\sum X$ = the sum of total X score in each group

$\sum Y$ = the sum of total score from each student

$\sum XY$ = the sum of multiple score from each student with the total score

$\sum X^2$ = the sum of the square score in each component of speaking

$\sum Y^2$ = the sum of all dialogue's score square

b) Reliability

Reliability refers to the stability or the consistency of the test scores. Heaton states that reliability is a necessary characteristic of any good test; for it to be valid at all, a test must first be reliable as a measuring instrument.[16] In this study, the reliability of the test was measured by comparing the obtained score with r-score product moment. Thus, if the obtained score was higher than the table r-score, it could be said that the test was reliable.

To calculate the reliability of the test, the researcher used the formula as follows:

$$r_{11} = \left(\frac{k}{k-1}\right)\left(1-\frac{\sum \sigma_{b^2}}{\sigma_{t^2}}\right)$$

Cited from Arikunto.[17]

[15] Suharsimi Arikunto, *op.cit*., p. 170.
[16] J. B. Heaton, *op.cit*., p.155.
[17] Suharsimi Arikunto, *loc. cit*., p. 196.

Where:

r_{11} = index reliability

k = number of items

$\sum \sigma_{b^2}$ = items variance

σ_t = total variance

To find out the variance of each item, the formula was:

$$\sigma_b^2 = \frac{\sum X^2 - \frac{(\Sigma X)^2}{N}}{N}$$

To find out the total variance, the formula was:

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

3. Item Analysis

After scoring the try-out test, item analysis was carried out to find out the effectiveness of the items. It was meant to check whether each item met the requirement of good test item or not. Item two analysis discussed main things:

a) Difficulty Level

Heaton states that "*the index of difficulty of an item simply shows how easy or difficult the particular item proved in the test*".[18] If the teacher knows deeply about item difficulty in making a test, he can make his test easy, medium, or difficult.

To know the item difficulty, the writer used the formula:

$$P = \frac{B}{JS}$$

Where:

P = index of difficulty

[18] J. B. Heaton, *op. cit*., p.172.

B = the number of students who answer an item correctly

JS = the total number of students

The index of difficulty level can be classified as follows:

$0.00 \leq P < 0.30$ is difficult

$0.30 \leq P < 0.70$ is medium

$0.70 \leq P < 1.00$ is easy

Cited from Sukestiyarno and Wardono.[19]

b) Discriminating Power

Item of discrimination power tells how well the item performs in separating the better students from the poorer students. If the good students tend to do well on an item and the poor students do badly on the same item, then the item is a good one because it distinguishes the good students from the bad students. Heaton states, "The discrimination index of an item indicated the extent to which the item discriminated between the tested, separating the more able tested from the less able. The index of discriminating power told the researcher if students who perform well on the whole test tended to do well or badly on each item in the test."[20]

To calculate the index of discriminating power, the researcher used the formula:

$$D = \frac{B_A}{J_A} - \frac{B_B}{J_B} = P_A - P_B$$

Taken from Arikunto.[21]

Where:

J_A = Number of all students in the upper group

J_B = Number of all students in the lower group

[19] Sukestiyarno and Wardono, *Statistika*, (Semarang: UNNES Press, 2009), p. 63.
[20] J. B. Heaton, *op.cit*., p.173.
[21] Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan*, (Jakarta: PT. Bumi Aksara, 2002), p. 213.

B_A = Number of students in the upper group who answered the item correctly

B_B = Number of students in the lower group who answered the item correctly

P_A = The proportion of the upper group who answered the item correctly

P_B = The proportion of the lower group who answered the item correctly

The criteria of determining the index of discriminating are below:

D = 0,00 – 0,20 : Poor

D = 0,21 – 0,40 : Satisfactory

D = 0,41 – 0,70 : Good

D = 0,71 – 1,00 : Excellent

c) Hypothesis Test

Firstly, the test was done in both groups, experimental and control group. Secondly, the result of the test was scored by using analytic scale. Thirdly, the means score of the two groups were determined. Finally, the two means were compared by applying t-test formula. T-test was used to differentiate if the students' result of students' speaking skill in descriptive text by using describing picture and without using describing picture was significant or not.

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

Where:

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

Cited from Sudjana.[22]

Where:

$\bar{x}_1$ = the mean score of the experimental group

$\bar{x}_2$ = the mean score of control group

n_1 = the number of the experimental group

n_2 = the number of the control group

s = standard deviation

s^2 = variance

If the obtained score was higher than t-table score by using 5% alpha of significance, Ho was rejected. It meant that Ha was accepted: "There was a significant difference in speaking achievement between the experimental and control group."

[22] Sudjana, *op.cit.,* p. 239.