CHAPTER III

RESEARCH METHOD

A. Research Design

This research was conducted in an experimental design using quantitative approach with One-Group Pretest-Posttest design. Experimental research is a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variable or variables for variation concomitant to the manipulation of the independent variables (Ary, 1985:26). Experimental research can be done in the laboratory, in the class and in the field.

Experimental research is unique in two very important respects, It in the only type of research that directly attempts to influence a particular variable, and when properly applied, it one or more dependent variables. An experimental usually involves two groups of subjects, an experimental group and a comparison group, although it is possible to conduct an experiment with one group (by providing all treatments to the same subjects) or with three or more groups (Frankle and Wallen, 1996:264).

This research used pre-experimental with One-Group Pretest-Posttest design. This research was classified as pre-experimental design because it was little or no control of extraneous variables. In the One-Group pretest-posttest design, a single group was measured or observed not only after being exposed to a treatment of some sort, but also before.

According to Ary *et al. Introduction to Research in Education* (2010, 2006: 303-304) the design of One Group Pretest-Posttest is as follows:

Table 3.1 One Group Pretest-Posttest Design

Pretest	Independent	Posttest
Y_1	X	Y_2

B. Population and Sample

1. Population

According to Sugiyono (2011: 80) population is not only people, but also all of the quantity of object or subject that will be learnt, but also involve the whole of characteristics of the subject or object.

The population of the research was the seventh grade students of SMPN 3 Kedungwaru Tulungagung in academic year 2014/2015. Each class consists of 28 students. The total population was 224 students.

2. Sample

According to Sugiyono (2009: 118) the sample is some part of the total and characteristic that is has of the population. In this study, the researcher took one class as a sample. They were class VII A consisting of 28 students as the experiment.

C. Variable of the Research

According to Kerlinger as cited by Arikunto (2006: 119), 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). In this research used two variables: independent variables and dependent variables.

Independent variable represented the output or effect, or was tested to see if it is the effect. Dependent variable represents the input or causes, or were tested to see if they are the causes. In this research the independent variable was the experiment of using small group interaction in the first grade in junior high school, while the dependent variable was speaking ability.

D. Research Plan

1. Treatment

The researcher gave treatment to the experimental group and he used small group interaction as the treatment of teaching speaking. The purpose of using small group interaction was to give new inspiration that can be applied in teaching speaking.

The first, the researcher chose the teaching material and composed the lesson plan for teaching learning activity. In this case, the researcher chose descriptive text to teach. The researcher distributed the sequential pictures about animal (cat) in the first meeting and about persons (Michael Douglas), and things (Computer Gaming) in the second meetings And also give the copy of the descriptive text to the student then divided the student into several groups, each group consists of four until five students and each group received the same picture to be discussed together.

Next, the researcher gave the students several times to describe based on the picture given and discuss to interact with their friend in group. In this time, the

role of the researcher was guiding the students to find appropriate meaning of the difficult words they found in the text.

The next activity was the researcher asked the students to describe picture by using their own words based on the picture seen.

The last, the researcher called the student's group to perform based on the picture. They performed it in group to describe the picture.

E. Research Instrument

An instrument is needed to collect the data collection. Instrument of the research played an important role in research project. The instruments were used to achieve the accuracy of the data and can indicate that researcher was successful in his research. The researcher used an oral test as instrument to get the data. To collect the data, The researcher gave students twice tests, those are pre-test and post-test. The pre-test was aimed at measuring the students' preliminary their speaking knowledge and achievement before they entered the experimental circle. The post-test was aimed at finding out the data needed to evaluate after got the experiment.

The form of speaking test was to express of students' performance. The student discussed in group and describe picture given with their own word. Then, the researcher got the score from Grammar, Vocabulary, Comprehension, Fluency, and Pronunciation.

The researcher gave two minutes to student's group to describe a picture with their own word in front of the class. In giving the score, the researcher used oral proficiency scoring categories from Brown (2004: 172-173). The scoring

consists of five items: Grammar, Vocabulary, Comprehension, Fluency, and

Pronunciation. Score are reported in the range from 1-5. It is shown as follows:

Table 3.2 The Criterion of Scoring Speaking

Grammar:

Score	Criteria
5	Grammar is clear and correct.
4	A few unclear or error grammar but still can understood easily.
3	Some grammar is error but still can be understood.
2	Grammar frequently unintelligible.
1	Errors in grammar are frequent.

Vocabulary:

Score	Criteria
5	Used varied vocabularies which are appropriate with the context.
4	A few vocabularies used are inappropriate with the context.
3	Able to speak language with sufficient vocabulary.
2	Has speaking vocabulary sufficient to express himself simply.
1	Speaking vocabulary inadequate.

Comprehension:

Score	Criteria
5	Can describe a picture without any mistakes.
4	Can describe a picture but still little mistakes.
3	Can describe a picture but sill there are some mistakes.

2	Can describe a picture but there are many mistakes.
1	Can't describe a picture.

Fluency:

Score	Criteria
5	Speak fluently with only slight hesitations that do not interfere with communication.
4	Speak fluently with occasional hesitation.
3	Speak hesitantly because of recalling and searching for words.
2	Speak in single words utterance, very slow and short pattern.
1	No specific fluency description.

Pronunciation:

Score	Criteria
5	Pronunciation is clear and correct.
4	A few unclear or error pronunciation but still can be understood easily.
3	Some Pronunciation is unclear or error but still can be understood.
2	Pronunciation frequently unintelligible.
1	Errors in pronunciation are frequent.

F. Validity and Reliability Testing

1. Validity

According to Gay (1983) in Sukardi, *Metodologi Penelitian Pendidikan Kompetensi dan Praktiknya,* (2007:121), the instrument can be called valid that the instrument can be used to measure what will be measured. The validity in the instrument of research is no other the degree

that indicates where a test to measure what will be measured. To know the validity of the instrument, the researcher used content validity and construct validity. The explanation of the content validity and construct validity, as follows;

a. Content Validity

Lodico et al., *Method in Educational Research,* (2006:93), the content validity is composed of two items of validity: sampling validity and item validity. Both sampling validity and item validity involve having experts examine items that make up the instrument.

The test was said have content validity if its contents constitute a representative sample of language skills, structures, etc., being tested. Beside that the content of instrument has to relevant with the purpose of the test. In this case, the content validity should refer to the "Kurikulum Tingkat Satuan Pendidikan (KTSP)". Based on the standard competence in syllabus of KTSP, it was mentioned that the seventh grade of Junior High School are expected able to comprehend the meaning in the simple short essay in the form of descriptive text to interact with the society around them. Based on the standard competence above, the students were expected to be able to describe a picture in the form of descriptive text.

Table 3.3 Content Validity

Standard Competence	**Speaking** 10. Expressing the meaning of short functional text and monolog in the form of descriptive and procedure in daily life context.
Basic Competence	10.2 expressing the meaning of short monolog using kinds of spoken language accurately, fluently, being acceptable in daily life context in the form of descriptive and procedure.
Indicator	a. Identifying the communicative purpose of the text given in group (correctly). b. Identifying the generic structure of the text given in group (correctly). c. Identifying the tenses used in descriptive text (correctly). d. Describing picture given (confidently and creatively).
Material	Descriptive text
Technique	Speaking Test
Instrument Test	Pre-test Post-test

In this research, the content of items in testing used descriptive text. It was suitable for the seventh grade students of SMPN 3 Kedungwaru.

b. Construct Validity

A test said to have construct validity if it can be demonstrated that it measures just the ability which is supposed to measure. The word construct refers to any underlying ability which is hypothesized in a theory of language learning. Brown (2004:25) mentioned that a construct is any theory, hypothesis or model that attempts to explain observed phenomena in our universe or perception.

According to Brown (2004: 172-173), the aspects of speaking consist of five items: Grammar, Vocabulary, Comprehension, Fluency, and Pronunciation. Those 5 aspects should be used as the criteria of good speaking. In this research, the speaking test also used the 5 criteria above as the aspects of good speaking. The researcher asked the students to speak for 2 minutes based on the picture. Therefore, the test used in this research to fulfill the construct validity of speaking.

2. Reliability

Lodico et al. (2006:87), reliability refers to the consistency of score, that is, an instrument's ability to produce "approximately" the same score for individual over repeated testing or across different raters.

The computation of this reliability used IBM SPSS Statistics 16 with reliability analysis. The criteria of reliability's degree can be seen on Table 3.3.

According to Triton in Sujianto (2009:97) the value of cronbach's alpha can be interpreted as follow:

Table 3.4 Cronbach's Alpha Interpretation Based on Triton

Cronbach's Alpha	Interpretation
0,00-0,20	Less reliable
0,21-0,40	Rather reliable
0,41-0,60	Quite reliable
0,61-0,80	Reliable
0,81-1.00	Very reliable

In this research, the reseacher tried to check the emprirical reliability by using SPSS 16.0. It showed that the Cronbach's Alpha score in pretest was 0.749 with df = 28. It can be seen on table 3.4 and table 3.5.

Table 3.5 Case Processing Summary

		N	%
Cases	Valid	28	100.0
	Excluded[a]	0	.0
	Total	28	100.0

a. Listwise deletion based on all variables in the procedure.

Table 3.6 Reliability Statistics

Cronbach's Alpha	N of Items
.749	5

Related with the categories of reliability testing stated by Sujianto, the result of computation was categorized into reliable test. It can be concluded that the instrument of this test was reliable.

G. Data Collecting Method

The writer used test to collect the data. The data were collected from the pre-test and post-test. The pre-test was administered before the treatments and post-test was administered after the treatments. In pretest and posttest the student chosen one of pictures then they described the picture for $\pm$ 2 minutes.

1. Test

Test is an instrument or procedure designed to measure the student's ability. As stated on the research design, the researcher would give two kind tests: pre-test and post test. The result of those tests would be compared to know whether the use of small group interaction more effective in teaching speaking.

In collecting data, the researcher used the test for collecting data, the researcher used an oral test to measure the students' ability in speaking skill. The writer gave the student two tests.

Those were pre-test and post-test:

a. Pre-test

Pre-test was aimed at measuring the students' ability in speaking and their achievement before they entered the experimental circle.

In pre-test, the researcher did the following steps:

1. The researcher gave three pictures and asked the student to choose one of the pictures.

2. The researcher asked the student to describe with their own word for $\pm$ 2 minutes.

3. The researcher recorded them.

4. The researcher scored them.

b. Post- test

Post test was used to measure the effect of certain treatment on this case was teaching speaking using small group interaction. The activities of this test were as follows:

1. The researcher gave three pictures and asked to the student to choose one of them.

2. The researcher asked to the student to express the picture based on they have seen, they should describe based on the picture for $\pm$ 2 minutes.

3. Then the researcher recorded the students' voice while they are performing.

4. The researcher also took note from each student's performance

5. The researcher scored them.

H. Data Analysis

The researcher analyzed the result of the test after collecting the data by using an oral test. The result of the test was processed by comparing the data before and after treatment.

After the researcher got the result of pre-test and post-test, the researcher used t-test to analyze the data. According to Cohen, Louis, et al (2007: 543), the t-test assumes that one variable is categorical (e.g., males and females) and one is a continuous variable (e.g., marks on a test).

To analyze the data, the researcher did some steps. They are as follows:

1. The researcher scored the students' performance

   The scoring consists of five elements items: as the researcher explained in treatment.

   Table 3.7 Scoring in Speaking

No	Aspect	Score
1	Grammar	1-5
2	Vocabulary	1-5
3	Comprehension	1-5
4	Fluency	1-5
5	Pronunciation	1-5

   The score of the scale and the response of the option were credited 5, 4, 3, 2, and 1 of the favorable to the unfavorable statements. Conversely the responses of the option were credited 1, 2, 3, 4, and 5 from unfavorable statements.

2. Researcher calculated the mean of pretest and posttest.

$$M_1: \Sigma \frac{Y_1}{N}$$

Where:

M_1 : Mean of pre-test

ΣY_1 : the sum of pre-test

N : Number of cases

$$M_2: \Sigma \frac{Y_2}{N}$$

Where:

M_2 : Mean of pretest

ΣY_2 : the sum of post-test

N   : Number of cases

3. The researcher calculated deviation and squared deviation.

4. The last step, the researcher found t-value by using t-test (Ary, 2010: 175-177)

$$t_{count} = \frac{\overline{D}}{\sqrt{\dfrac{\Sigma_D 2 - \dfrac{(\Sigma_D)^2}{n}}{N(N-1)}}}$$

Where:

t_{count} = the value of t-test

$\overline{D}$ = mean of differences pre-test and post-test

ΣD^2 = total of quadrate deviation

ΣD = the sum of deviation

N   = number of cases

Then, the result of $\mathbf{T}_{count}$ must be compared with calculation of $\mathbf{T}_{table}$ of 5% alpha level. If $\mathbf{T}_{count}$ higher than $\mathbf{T}_{table}$, it means that the difference students' speaking skill before and after taught by using small group interaction was significant. So H_1 is accepted and H_0 is rejected. On the other hand, if $\mathbf{T}_{count}$ lower than $\mathbf{T}_{table}$, so Hi is rejected and Ho is accepted. (Anas Sudiyono, 2008: 324-325).

I. Hypothesis Testing

> If the score has significance difference of students speaking ability before using small group interaction, so H_0 is rejected and H_1 is accepted.

> If the score has no significance difference of students speaking ability after using small group interaction, so H_1 is rejected and H_0 is accepted.