

## CHAPTER III

### RESEARCH METHODOLOGY

#### A. The Research Design

This research was experimental research and used quasi experimental design. Creswell states that experiment is testing an idea (practice) to determine whether it influences an outcome or dependent variables.<sup>1</sup> Sukardi also states that quasi experiment research is the research design that mostly used in education, language research and the other research since the subject of research are human.<sup>2</sup> A quasi-experimental study might compare outcomes for individuals receiving program activities with outcomes for a similar group of individuals not receiving program activities. This type of research also might compare outcomes for one group of individuals before and after the group's involvement in a program (known as "pre-test/post-test design").

There were two variables used in this research. The first is using describe and identify game which is symbolized as (X) and the second is students' speaking ability which is symbolized as (Y). In conducting this research, the writer involved the second grade students of SMPN 6 Pekanbaru, the classes were divided into an experimental class and a control class. Both of the classes were given a pre-test to know the

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<sup>1</sup>John.W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (New Jersey: Pearson Education, 2008), p 299

<sup>2</sup>Sukardi, *Metodologi Penelitian: Kompetensi dan Praktiknya*, (Jakarta: Bumi Aksara, 2005), p. 149

students' ability in speaking. After that, the experimental class was given the treatment by using describe and identify game for 6 meetings while the control class was given conventional teaching strategy. At the end, both of the classes were tested again to find out the students' result in a post-test. According to Louis, the type of this research can be illustrated as follows:<sup>3</sup>

**Table III.1**  
**Research Design**

<b>Class</b>	<b>Pre-test</b>	<b>Treatment</b>	<b>Post-test</b>
Experimental	O1	X	O2
Control	O3	-	O4

Where:

X : Treatment

O1 : Pre-test of Experimental Class

O2 : Post-test of Experimental Class

O3 : Pre-test of Control Class

O4 : Post-test of Control Class

Thus, the writer adapted the design above in which the subject of the research was the second grade students of SMPN 6 Pekanbaru. Then, the treatment was done for six meetings.

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<sup>3</sup>Louis Cohen et al, *Research Methods in Education Sixth Edition*, (London and New York: Routledge, 2007) , p. 283

## **B. The Subject and Object of the Research**

The subject of this research was the second grade students of SMPN 6 Pekanbaru in the academic year of 2013/2014. The object of this research was describe and identify game and speaking ability.

## **C. The Time and Location of the Research**

This research was conducted at SMPN 6 Pekanbaru and located on Yos Sudarso street Pekanbaru. This research was done 8 meetings, started from September 2<sup>nd</sup> until September 25<sup>th</sup> 2013.

## **D. Population and Sample**

### **1. Population**

The population of this research was the second grade students of SMPN 6 Pekanbaru in 2013/2014 academic years. There were 10 classes all together, each class consisted of 28 students. So the total number of students was 280 persons. The detail number of students includes this following table:

**Table III.2**  
**Population of the Second Grade at SMPN 6 Pekanbaru**

No.	Class	Number of Students
1	VIII.1	28
2	VIII.2	28
3	VIII.3	28
4	VIII.4	28
5	VIII.5	28
6	VIII.6	28
7	VIII.7	28
8	VIII.8	28
9	VIII.9	28
10	VIII.10	28
Total		280

## 2. Sample

Based on the design of the research above, the population above was large enough to be taken all as sample of the research. Because they were homogenous or because all samples had the same characteristic, the writer used cluster sampling to choose the classes to be the sample. So the writer selected two groups of the students to be taken as sample in which VIII. 8 as an experimental class, and class VIII.9 as a control class. The

experimental class consisted of 28 students, while the control class consisted of 28 students.

**Table III. 3**  
**Sample of this Research**

No	Class	Male	Female	Total Number of Students
1	VIII.8	14	14	28
2	VIII.9	14	14	28
Total		28	28	56

#### **E. The Technique of Collecting Data**

In this research, to collect the data of speaking ability, the researcher used oral test technique which was done twice in pre-test and post-test. The students' voice was recorded in a recorder. Then, in collecting the data of Describe and Identify game as variable x, the researcher used observation list.

The students' speaking ability was measured by using oral language scoring rubric which was adopted from Adam and Frith in Hughes as follows:<sup>4</sup>

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<sup>4</sup>Arthur Hughes, *Testing for Language Teachers*, (Cambridge: Cambridge University, 1989), p.111-113

**Table III.4**  
**The Category Level of Speaking Ability**

Aspects	Level6	Level5	Level4	Level3	Level2	Level1
Accent	6	5	4	3	2	1
Grammar	6	5	4	3	2	1
Vocabulary	6	5	4	3	2	1
Fluency	6	5	4	3	2	1
Comprehension	6	5	4	3	2	1

**Table III.5**  
**Aspect Description for Accent**

<b>Accent</b>	
6	Native Pronunciation, with no trace of “foreign accent”
5	No conspicuous mispronunciation, but would not be taken for a native speaker
4	Marked “foreign accent” and occasional mispronunciation which do not interfere with understanding
3	“Foreign accent” requires concentrated listening, and mispronunciation lead to occasional misunderstanding and apparent errors in grammar or vocabulary
2	Frequent gross error and very heavy accent make understanding difficult, require frequent repetition
1	Pronunciation frequently unintelligible

**Table III.6**  
**Aspect Description for Grammar**

<b>Grammar</b>	
6	No more than two errors during the interview
5	Few errors, with no patterns of failure
4	Occasional errors showing imperfect control of some pattern but no weakness that causes misunderstanding
3	Frequent errors showing some major patterns uncontrolled and causing occasional irritation and misunderstanding
2	Constant errors showing control of very few major patterns and frequently preventing communication
1	Grammar almost entirely inaccurate except in stock phrases

**Table III.7**  
**Aspect Description for Vocabulary**

<b>Vocabulary</b>	
6	Vocabulary apparently as accurate and extensive as that of an educated native speaker
5	Professional vocabulary broad and precise, general vocabulary adequate to cope with complex practical problems and varied social situations
4	Professional vocabulary adequate to discuss special interest, general vocabulary permits discussion of any non-technical subject with some circumlocution
3	Choice of words sometimes inaccurate, limitations of vocabulary prevent discussion of some common professional and social topics
2	Vocabulary limited to basic personal and survival areas (time, food, transportation, family, etc)
1	Vocabulary in adequate for even the simplest conversation

**Table III.8**  
**Aspect Description for Fluency**

<b>Fluency</b>	
6	Speech on all professional and general topics as effortless and smooth as a native speaker
5	Speech is effortless and smooth, but perceptively non-native in speed and evenness
4	Speech is occasionally hesitant, with some unevenness caused by rephrasing and grouping for words
3	Speech is frequently hesitant and jerky, sentence may be left uncompleted
2	Speech is very slow and uneven except for short or routine sentence
1	Speech is so halting and fragmentary that conversation is virtually impossible

**Table III. 9**  
**Aspect Description for Comprehension**

<b>Comprehension</b>	
6	Understand everything in both formal and colloquial speech to be expected of an educated native speaker
5	Understand everything in normal educated conversation except for very colloquial or low-frequency items, or exceptionally rapid or slurred speech
4	Understands quite well normal educated speech when engaged in a dialogue, but requires occasional repetition or rephrasing
3	Understand careful, somewhat simplified speech when engaged in a dialogue, but may require considerable repetition and rephrasing
2	Understands only slow, very simple speech on common social and touristic topic; requires constant repetition and rephrasing
1	Understand to little for the simplest type of conversation

The score levels given to the students are about from level 1 to level 5.

To collect the data, the speaking result was evaluated by using five components and each component had score or level. Each component had 20 as the highest score and the total of the components are 100. In this research, the writer took 80 as the highest score. Then the score was interpreted into the following category:<sup>5</sup>

1. 80 – 100 = A (Very good)
2. 66 – 79 = B (Good)
3. 56 – 65 = C (Enough)
4. 40 – 55 = D (Less)

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<sup>5</sup>Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan: Edisi Revisi*, (Jakarta: Bumi Aksara, 2009), p. 245

5. 30 – 39 = E (Bad)

## F. The Technique of Data Analysis

In this research, the data of the research were picked from students' pre-test and post-test scores of the experimental and the control classes. In order to answer this research questions, writer analyzed the data by using 't' test formula through SPSS 16 version.

In the first step, writer obtained the mean scores of experimental class and control class. The formula is:

$$Mx = \frac{X}{N}$$

Where:

Mx : Mean scores of Experimental class

X : Total scores of experimental class

N : Numbers of students

Then, to find the mean scores of control class the writer used the same formula in which the scores of students in experimental class change to scores of students in control class.

After finding each mean score, the finding of Standard deviation was necessary. The formula is:

$$SD_x = \sqrt{\frac{\sum x^2}{N}}$$

Where:

SDx : Standard Deviation of Experiment Group

$\sum x^2$  : Total Square

$N$  : Number of students of experiment group

Standard Deviation of control class used the same formula as experiment class; it was only change the score of experiment class to control class.

Then, to find whether the result was significant or not, the data were analyzed by using the formula as follows:<sup>6</sup>

$$t_0 = \frac{Mx - My}{\sqrt{\left(\frac{SD_x}{\sqrt{N-1}}\right)^2 + \left(\frac{SD_y}{\sqrt{N-1}}\right)^2}}$$

Where:

$t_0$  : the t-observation

$Mx$  : the mean score of experimental class

$My$  : the mean score of control class

$SDx$ : standard deviation of experimental class

$SDy$ : standard deviation of control class

$N$  : the number of cases

After calculating the t-test, to know whether the score was significant or not, the writer should know the distinction between  $t_0$  and  $t_{table}$ . It was necessary to obtain the degree of freedom (df) in order to get the  $t_{table}$ . The formula of degree of freedom is:

$$df = (N_E + N_C) - nr$$

where:

df : the degree of freedom

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<sup>6</sup>Hartono, *Statistik untuk Penelitian*, (Yogyakarta: Pustaka Pelajar, 2010), p. 207-208

$N_E$  : number of students from experiment class

$N_C$  : number of students from control class

$nr$  : number of variable

Finally, when the writer knew the result, the writer concluded that if  $t_o < t_{table}$ ,  $H_o$  is accepted. It means that there is no significant effect of using describe and identify game toward speaking ability at the second grade students at SMPN 6 Pekanbaru. If  $t_o \geq t_{table}$ ,  $H_a$  is accepted. It means that there is significant effect of using describe and identify game toward speaking ability of the second grade students at SMPN 6 Pekanbaru.

### **G. The Validity and the Reliability of the Test**

In order to know the validity of speaking ability test, the writer used content validity. Content validity is partly a matter of determining if the content that the instruments contains is an adequate sample of the domain of content it is supposed to represent.<sup>7</sup> Thus, the test was given based on the material studied by the students. The material of the test was taken from the textbook used by the second grade students of SMPN 6 Pekanbaru.

Reliability is the degree to which a test consistently measure whatever it is measuring.<sup>8</sup> The testing of students' speaking ability had to have reliability in order to get the same scores obtained when the tests

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<sup>7</sup> Jack R. Fraenkel, Norman E. Wallen, *How to Design and Evaluate a Research in Education*, (New York: McGraw-Hill Companies Inc, 2006), p. 153

<sup>8</sup> L.R. Gay and Peter Airisian, *Educational Research Competencies for Analysis and Application*, (New Jersey: Pearson Education, 2000), p.169

done were more than once. There are five types of reliability: stability, equivalence, equivalence and stability, internal consistency, and rater agreement. In this research, the writer used the rater agreement type of reliability concerned with interrater reliability as the scores were given by two raters.

The writer used *Pearson Product Moment* formula by using SPSS 16 version to obtain the correlation between scores from rater 1 and rater 2. Then, to know the level of the correlation, the  $r_o$  is process through *Spearman-Brown Prophecy formula* as follows:<sup>9</sup>

$$r_{tt} = \frac{n r_{A.B}}{1 + (n-1) r_{A.B}}$$

Where,

$r_{tt}$  = inter-rater reliability

$n$  = the number of raters whose combined estimates the final mark for the examines

$r_{A.B}$  = the correlation between raters, or the average correlation among all raters if there are more than two.

The writer used the categories of reliability can be seen from the following table.

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<sup>9</sup> Grant Henning, *A Guide to Language Testing: Development, Evaluation, and Research*, (Boston: Heinle&Heinle, 1987), p.85

**Table III. 10**  
**The Categories of Reliability**

No	Reliability	Level of Reliability
1	0.0 – 0.20	Low
2	0.21 – 0.40	Sufficient
3	0.41 – 0.70	High
4	0.71 – 1.0	Very high

(Taken from Tinambunan in Meltiawati in Zelly)<sup>10</sup>

**Table III. 11**  
**Correlations**

	RATER1	RATER2
RATER1 Pearson Correlation	1	.668**
Sig. (2-tailed)		.000
N	28	28
RATER2 Pearson Correlation	.668**	1
Sig. (2-tailed)	.000	
N	28	28

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

From the output above, it can be seen that  $r_o$  ( $r_{\text{obtained}}$ ) is 0.668 will be correlated to  $r_t$  ( $r_{\text{table}}$ ). It is necessary to find the df (degree of freedom).

$$df = N - nr$$

<sup>10</sup> Zelly Putriani, *The Correlation between Reported Speech Mastery and Speaking Ability of the Second Year Students of SMKN 1 Pekanbaru*, (Pekanbaru: Unpublished, 2011), p. 35

df : degree of freedom

N : number of cases

nr : number of correlated variable

$$df = 28 - 2 = 26$$

The writer took  $df = 26$  to be correlated either at level 5% or 1%. At level 5%,  $r_{table}$  is 0.374; while at level 1%  $r_{table}$  is 0.478. Thus, the  $r_{obtained}$  is obtained higher than  $r_{table}$ , either at level 5% or 1%. So the researcher concluded that there was a significant correlation between score given by rater 1 and score given by rater 2. In the other words, the speaking test was reliable.

Then, it was calculated by using Spearman-Brown Prophecy Formula as follows:

$$r_{tt} = \frac{n r_{A,B}}{1 + (n-1) r_{A,B}}$$

$$r_{tt} = \frac{2(0.668)}{1 + (2-1)0.668}$$

$$r_{tt} = \frac{1.336}{1.668}$$

$$r_{tt} = 0.8$$

Based on the data obtained above, the writer concluded that the inter-rater reliability in this research was 0.8 categorized into very high level.