

CHAPTER III

THE RESEARCH METHOD

A. The Research Design

This research was an experimental research. According to Gay, the experimental method is the only method of research that can truly test hypotheses concerning cause and effect relationships¹. The design of this research was a quasi experimental design, which used the nonequivalent control group design. According to Cresswell, quasi experimental design is an experimental situations in which the researcher assigns, but not randomly, participants to groups because the experimenter cannot artificially create groups for the experiment². This research aimed at finding out the effect of using role play towards motivation in speaking English of the eleventh grade students at SMAN 3 Pekanbaru.

This research consisted of two groups. One was an experimental group and the other one was a control group. The experimental group was treated by using Role play and control group was not treated by Role play. There were two variables involved in this research, one was an independent variable (Role play) and the other was dependent variable (students' motivation in Speaking English).

¹L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application*, Sixth Edition .(New Jersey: Pearson Education, 2000), p.367.

²John W. Cresswell, *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Education, 2008), p.645.

The nonequivalent control group design can be seen below :³

O ₁	X	O ₂ (Experimental Group)
O ₃		O ₄ (Control Group)
O ₁ and O ₃	= Pre Test	
O ₂ and O ₄	= Post Test	
X	= Treatment by using Role Play.	

B. The Location and Time of the Research

This research was conducted from August to October 2013 at Senior High School 3Pekanbaru. It was located on Yos Yudarso Street, Rumbai Pekanbaru.

C. The Subject and Object of the Research

The students of the Eleventh grade at Senior High School 3Pekanbaru was the subject of this research, while the object was using Role play and motivation in speaking English of the Eleventh grade students of SMA N 3 Pekanbaru.

D. The Population and Sample

The eleventh grade students of Senior High School 3 Pekanbaru was the population of this research. Based on the limitation of the research, the writer took only 2 classes after doing cluster random sampling. According to Gay, cluster random sampling selects not groups, not individually, all the members

³Louis Cohen, Lawrence Manion and Keith Morrison, *Research Methods in Education* (New York: Routledge, 2007). p.283, <http://library.nu.com> (accessed January, 2013).

of selected group have similar characteristic.⁴Therefore, the writer took two classes (experimental class and control class) that have the same chance as simple in this research. The XI IPA 3 was an experimental class and XI IPA 4 was a control class.

Table III.1
The Total Population of the Second Grade
Students of Senior High School 3Pekanbaru

No.	Class	Students		Total
		Male	Female	
1.	XI IPA 1	15	16	31
2.	XI IPA 2	14	17	31
3.	XI IPA 3	15	17	32
4.	XI IPA 4	15	16	31
5.	XI IPA 5	14	18	32
6.	XI IPS 1	17	16	33
7.	XI IPS 2	15	18	33
8.	XI IPS 3	15	18	33
9.	XI IPS 4	15	16	31
	Total			287

Because of several reasons, only 30 students for each class could participate in this research. The number of the sample was 60 students; 30 students for the experimental class and 30 students for the control class.

E. The Technique of Collecting Data

To determine the students' motivation in speaking English, it can be seen from their score in the questionnaire. This technique was conducted to collect the data about the students' motivation in speaking English. This questionnaire consisted of some questions for the respondents. It was twenty items that were presentative of the statement of students' motivation.

⁴Ibid. p, 422.

According to Rensis Likert, Likert scale is the most widely used scale in survey research and certainly the one that has found its way into popular culture⁵. The classic use of the Likert scale was to pose questions or items to participants and have them respond using an agreement scale by selecting a number that best represented their response. It deals with the respondents' opinion in answering the following options:⁶

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

1. Validity and Reliability of the Questionnaire

a. Validity

Before using the questionnaire as the instrument to obtain the information about the students' motivation in speaking English, the writer did a try out for testing the validity and the reliability of the questionnaire items. The validity of the items can be interpreted by using factor analysis by correlating between scores of each item and its total scores. It can be done by using product moment correlation⁷, as follows:

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

⁵ Marguirite G. Lodico, Dean T. Spaulding and Katherine H. Voegtler. *Methods in Educational Research from Theory to Practice* (San Francisco: Jossey Bass, 2006), p.107.

⁶ Bambang Setiyadi. *Metode Penelitian untuk Pengajaran Bahasa Asing Pendekatan Kuantitatif dan Kualitatif* (Yogyakarta: Graha Ilmu, 2006), p.59.

⁷Riduwan. *Belajar Mudah Penelitian untuk Guru-Karyawan dan Peneliti Pemula*. (Bandung: Alfabeta, 2004). p.98.

Each item of the instrument was counted to the correlation coefficient with its total scores, and the next step is as follows:⁸

$$t_{test} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

In try out, the writer gave students 20 items of questionnaire. These items represented 10 indicators of the students' motivation in speaking English. The try out was done to the second grade students of IPA 1 at SMA N 3 Pekanbaru. The class was not used in research process. The result of the try out can be seen as follows:

Table III.2
Recapitulation of the Research Instrument Validity

Number of Items	df	t Table	t Test	Validity	Classifications
1	28	1.701	2.887	Valid	Used
2	28	1.701	2.491	Valid	Used
3	28	1.701	2.817	Valid	Used
4	28	1.701	2.563	Valid	Used
5	28	1.701	2.968	Valid	Used
6	28	1.701	3.361	Valid	Used
7	28	1.701	2.983	Valid	Used
8	28	1.701	3.887	Valid	Used
9	28	1.701	5.291	Valid	Used
10	28	1.701	3.340	Valid	Used
11	28	1.701	5.292	Valid	Used
12	28	1.701	5.291	Valid	Used
13	28	1.701	5.275	Valid	Used
14	28	1.701	4.366	Valid	Used
15	28	1.701	2.727	Valid	Used
16	28	1.701	2.477	Valid	Used
17	28	1.701	3.737	Valid	Used
18	28	1.701	5.861	Valid	Used
19	28	1.701	4.076	Valid	Used
20	28	1.701	4.191	Valid	Used

⁸Riduwan.ibid.

Based on the result of the try out, all of items of the questionnaire were valid. And these valid items were used as the instrument to collect the data of students' motivation in speaking English.

b. Reliability

The good quality of instrument is determined by the instrument reliability. According to Douglas Brown, a reliable is consistent and dependable.⁹ It is used to measure the quality of the test scores and the consistency, dependability, or fairness of scores resulting from administration of a particular examination. If reliability is associated with accuracy measurement it follows that reliability will increase as error of measurement is made to diminish. The writer quantifies reliability so that the writer can be aware of the amount of error present in the measurement and the degree of confidence possible in score obtained from the questionnaire.

To obtain the reliability of the test given, the writer used Cronbach Alpha formula as follows:¹⁰

$$r_{11} = \left(\frac{K}{K-1} \right) \left(1 - \frac{\sum Si}{St} \right)$$

Reliability Analysis

To know the questionnaire is reliable or not, the value of r_{11} must be compared with r product moment.

⁹Brown, H. Douglas. *Language Assessment Principles and Classroom Practices* (California: Longman, 2003), p.20

¹⁰Hartono. *Op.Cit*, p.115

$$1. \quad s_i = \frac{\sum X_i^2 - \frac{(\sum X_i)^2}{N}}{N}$$

$$\sum Si = 15.684$$

$$2. \quad s_t = \frac{\sum X_t^2 - \frac{(\sum X_t)^2}{N}}{N}$$

$$= \frac{152249 - \frac{(2127)^2}{30}}{30}$$

$$= \frac{152249 - 150804.3}{30}$$

$$St = \frac{1444.7}{30} = 48.157$$

$$3. \quad r_{11} = \left(\frac{K}{K-1} \right) \left(1 - \frac{\sum Si}{st} \right)$$

$$= \left(\frac{30}{30-1} \right) \left(1 - \frac{15.689}{48.157} \right)$$

$$= \left(\frac{30}{30-1} \right) \left(1 - \frac{15.689}{48.157} \right)$$

$$= \left(\frac{30}{29} \right) (1 - 0.326)$$

$$= (1.034)(0.674)$$

$$= 0.697$$

The value of r_{11} must be higher than r table. From the calculation above the value of r_{11} is 0.697. Then the r_t at 5% level of significance is 0.361. So, it can be concluded that $0.697 > 0.361$. In other words, the

instrument is reliable because the value of r_{11} is higher than r_t . To make clear about this analysis. (see in the appendices).

F. The Technique of Analyzing Data

In this research, there are three formulations of the problem that the writer tried to find out the result of the research. The writer used some techniques to analyze the data and to find out the information about the students' motivation in speaking English towards both experimental class and control class as well as the effect of using Role Play towards students' motivation in speaking English. The writer did the following computation on the questionnaires of the students' motivation in speaking English for both classes. In analyzing the data, the writer also used SPSS v.16. The writer analyzed the data through the following procedures:

1. To find out the level of students' motivation in learning speaking, the writer used the following formula¹¹:

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

In which :

P : Percentage

F : Frequency

N : Number of students

¹¹Anas Sudjono. *Pengantar Statistik Pendidikan*. (Jakarta: PT Grafindo Persada, 2000), p.40.

The interpretation of the formula above is as follows¹²:

No.	Categories	Score
1	Very Strong	81%-100%
2	Strong	61%-80%
3	Enough	41%-60%
4	Low	21%-40%
5	Very Low	0%-20%

2. Independent Sample T-Test

It was to used to compare mean of post questionnaires between the two groups (Experimental and Control classes). The formula¹³:

$$S\bar{X}_1 - \bar{X}_2 = \sqrt{\frac{\sum x_1^2 + \sum x_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

The t_{table} was employed to see if there is a significant difference between the mean score both experimental and control groups. The $t_{obtained}$ value was consulted with the value of the t_{table} at the degree of freedom (df) = (N1+N2)-2 statically hypotheses :

$$H_a: t_o > t_{table}$$

$$H_o: t_o < t_{table}$$

H_a is accepted if $t_o > t_{table}$ or there is an effect of using role play towards students' motivation in speaking English.

H_o is accepted if $t_o < t_{table}$ or there is no effect of using Role Play towards students' motivation in speaking English.

¹²Riduwan. *Skala Pengukuran variable-variable Penelitian* (Bandung: Alfabeta, 2005), p.15.

¹³Sumanto. *Pembahasan Terpadu Statistika dan Metodologi Riset* (Yogyakarta: ANDI, 2002), p.216.