CHAPTER III

METHODOLOGY

3.1 Research Design

The research design of this study is experimental research design. It is done to find out whether there is significant effect in students' speaking ability by using monopoly game. The kind of this research method is quasi experimental. Which it is non-randomized sample for pre-test and post-test. The design chart can be seen in figure below:

Group	Pre-test	Treatment	Post-test
Experiment	Y1	X	Y2
Control	Y1	-	Y2

Table 1. Non-Randomized Subjects, pre-test and post-test Quasi Experiment Design.

Where :

Y1   : The pre-test which is administered before the treatment

X   : The treatment

Y2   : The post-test which is administered after the treatment

In this case, the researcher will conduct two groups from two classes. They are experimental group and control group. The researcher will give the same pre-test and post-test for the two groups. The experimental group will be given treatment by using monopoly game to promote students' speaking ability but for control group is without giving treatment. Before applying the research, the researcher will give the same pre-test for both to know or to measure the students' speaking ability before the treatment is given. Then the researcher gives treatment

to the experimental group for four times. After the treatment is given to the experimental group, post-test will be given to the experimental group and control group then the result of pre-test and post-test will be analyzed to compare both the experimental group with treatment and the control group without treatment by using t-test formula.

3.2 Population and Sample

The population of the study is the first semester of eighth grade at SMP Muhammadiyah 1 Gresik in the academic year of 2014-2015. In the eighth grade, there are four classes, they are VIII A, B, C and D. In this study the researcher will conduct two classes as the sample, one class for the experimental group and one class for the control group where VIII A will be control group and VIII B will be experimental group. Those two classess are representative of four classess from the population. The total number of the sample both classes are 54 students. VIII A consists of 26 students and VIII B consists of 28 students.

3.3 Data Collection

In this study, the data is collected from the test, the test are pre-test and post-test. The researcher will give post-test to the experimental group and control group to know the speaking ability before the treatment is given to the experimental group. Meanwhile, the post-test will be given for two groups after the treatment is given to the experimental group. After that, the researcher will analyze the result of pre-test and post-test of two groups by using SPSS 17.0 program to know the outcome of using monopoly game on students' speaking ability.

3.3.1 Research Instrument

Instrument is an important part in research, because the instrument is used to get a data. The instrument in this study is test. The test is used in order to measure students' speaking ability and get information about the effect of monopoly game on students' speaking ability.

While doing the test, giving score is needed. The criterion that the researcher used is quoted from Harris (1969) guide theory. Harris presented the sample of an oral English rating scale that used 1-5 points. It can be seen in the following table.

No	Aspect	Rating Score	Criterion
1	Pronunciation	5	How fast traces of foreign language
		4	Always intelligible, thought one is conscious of a definite accent
		3	Pronunciation problem necessities concentrated listening and occasionally lead to misunderstanding
		2	Very hard to understand because of pronunciation problem, most frequently be asked to repeat
		1	Pronunciation problem to serve as to make speech virtually unintelligible
2	Grammar	5	Make few (if any) noticeable errors of grammar and word order occasionally makes grammatical
		4	And or word orders errors that do not, however obscure 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 rephrases sentence and or rest rich himself to basic pattern
		1	Errors in grammar and word order, so, serve as to make speech virtually unintelligible
3	Vocabulary	5	Use of vocabulary and idioms is virtually that of native speaker
		4	Sometimes uses the wrong word

			conversation somewhat limited because of inadequate vocabulary
		3	Frequently uses the wrong words conversation somewhat limited because of inadequate vocabulary
		2	Misuse of words and very limited vocabulary makes comprehension quite difficult
		1	Vocabulary limitation so extreme as to make conversation virtually impossible
4	Fluency	5	Speech as fluent and efforts less as that of native speaker
		4	Speed of speech seems to be slightly affected by language problem
		3	Speed and fluency are rather strongly affected by language problem
		2	Usually hesitant, often forced into silence by language limitation
		1	Speech is so halting and fragmentary as to make conversation virtually impossible
5	Comprehension	5	Appears to understand everything without difficulty
		4	Understand nearly everything at normal speed although occasionally repetition may be necessary
		3	Understand most of what is said at slower than normal speed without repetition
		2	Has great difficulty following what is said can comprehend only social conversation, spoken slowly and with frequent repetition
		1	Cannot be said to understand even simple conversational English

Table 2 : The sample of an oral English rating scale

3.3.1.1 Test

There are two tests that will be given to students, pre-test and post-test. Both experimental group and control group will be given the same test. The test conducted pre-test and post-test because the researcher wants to know whether there is significant different toward students score of speaking ability.

Pre-test is given to find out the initial different between experimental group and control group as they have similar level in speaking ability. The test is given before the treatment is applied. The test that is used is speaking test or oral spoken. The speaking test based on the material of standard competition of the eighth grade of junior high school. The test is given to know the ability before giving the treatment.

Meanwhile, post-test is given after the treatment is applied in experimental group. It is in order to find out whether the students made progress or not in speaking ability. The procedure of post-test is same with pre-test but post-test is the test result after the treatment done. By knowing the result of post-test both two groups, the researcher will know the progress at the experimental group with treatment and the control group without treatment.

3.3.1.2 Validity

Validity is the extent to which an instrument measures what it is supposed to measure (Carmines and Zeller, 1979). Validity is needed before pre-test and post-test are conducted because the item of the test must be valid. It is used to measure to indicate the level of instrument validity. There are three types of validity, they are content validity, predictive validity and cunstruct validity, but in this study the researcher will measure it by checking the content validity. Among the types of validity , it can be classified as either nonempirical or empirical validity. The researcher only uses content validity to check the instrument validity because the skill is speaking skill and the content is subjective where in content validity is a subjective measure. As Carmines and Zeller, 1979 stated that content

validity is assessed only by the opinions of the community of scholars. There is no empirical assessment of content validity. So that is why in this study, it is enough to know that the instrumen is valid by using one validity that is content validity.

To determine the content validity, the researcher checks the instrument validity based on English curriculum and the syllabus. Based on Djiwandono (2011:165) content validity can be done by arranging the outline of the tasks requirement in taking the tests which compare with the items in the test or the content of the curriculum. Moreover Hurts (2003) stated that content validity refers to the extent to which an assessment represents all facets of tasks within the domain being assessed. To check the content validity, it can be seen if the content matches with English Curiculum and the syllabus. In this study the content of the test matches with the English Curiculum and the syllabus which the topics that are used are describing person, animal and thing. As Ary (1990:258) said that content validity is not usually expressed in numerical form but it can be determined wether the items in the test represent the course and objectives as stated in curriculum guides, syllabi, and text. Here the analysis of the items based on the syllabus:

Basic Competence	Sub Basic Competence	Focus Item	Question Numbers	
			Pre-test	Post-test
4.4. Arranging short and simple spoken and written descriptive text about person, animal and thing by observing the purpose, generic structure, language use correctly and based on the content	4.4.1 Arranging short and simple spoken and written descriptive text about person by observing the purpose, generic structure, language use correctly and based on the content	Describing Person	1 item	1 item
	4.4.2 Arranging short and simple spoken and written descriptive text about animal by	Describing Animal	1 item	1 item

	observing the purpose, generic structure, language use correctly and based on the content			
	4.4.3 Arranging short and simple spoken and written descriptive text about thing by observing the purpose, generic structure, language use correctly and based on the content	Describing Thing	1 item	1 item

Table 3: The analysis of the items based on the syllabus

3.3.2 The Procedure of Data Collection

The procedure of collecting the data is needed to make the researcher is easy to get the data. The procedures are as follows:

The first thing that the researcher does is asks permission to the school, after getting permission, and the proposal is accepted, the researcher makes English test for pre-test and post-test. Both pre-test and post-test consist of describing certain object. The second, the researcher takes two subjects which consist of control group and experimental group, they are VIII A and VIII B, then both of them are given pre-test to get the first data before the treatment. After getting the first data from pre-test, the researcher gives treatment for four times to the experimental group by using monopoly game, on the other hand, control group is without giving treatment. Then, the researcher gives post-test for two groups after the treatment is given to the experimental group. The post-test is given to determine the outcomes of the use of monopoly game whether it has significant effect on students' speaking ability or not. Finally, the researcher collects the result of pre-test and post-test then analyze them by using independent sample t-test in SPSS version 17.0 program.

3.4 Data Analysis

The next step after getting the data, the researcher will analyze the data. It is conducted to be able to interpret the data which is obtained from the test. Data analysis is aimed to answer the research problem which the data presented from pre-test and post-test. Then the researcher analyzes the data by using independent sample t-test because the samples are small and the groups were independent. The t-test for independent samples are carried out to determine whether there is significant effect of monopoly game on students' speaking ability which applied in the experimental group. SPSS version 17.0 will be used by the researcher to compute descriptive statistic.

Assumptions for the independent t-test were: (1) independence: Observations within each sample must be independent (they do not influence each other). (2) normal distribution: The scores in each population must be normally distributed. (3) homogeneity of variance: The two populations must have equal variances (the degree to which the distributions are spread out is approximately equal).

In this study the researcher does not need normality distribution because the sample of this study is not from rendom population, so this study just need homogeneity to know the samples are homogeneous or not.

3.4.1 Homogeneity Test of Variance

For homogeneity test, the researcher uses one Levene's test of homogeneity test in SPSS version 17.0. The purpose of this test is to find out whether the variance of pre-test and post-test of experimental group and control grpoup are homogenous. The test of Levene's test (P) is defined as follows:

$$W = \frac{(N-k)}{(k-1)} \frac{\sum_{i=1}^{k} N_i (Z_{i.} - Z..)^2}{\sum_{i=1}^{k} \sum_{j=1}^{N_i} (Z_{ij} - Z_{i.})^2},$$

Where :

- W is the result of the test,

- k iss the number of different groups to which the sampled cases belong,

- N is the total number of cases in all groups,

- N_i is the number of cases in the ith group,

- Y_{ij} is the value of the measured variable for the jth case from the ith group,

- $Z_{ij} = \begin{cases} |Y_{ij} - \bar{Y}_{i.}|, & \bar{Y}_{i.} \text{ is a mean of i– th group} \\ |Y_{ij} - \tilde{Y}_{i.}|, & \tilde{Y}_{i.} \text{ is a median of i– th group} \end{cases}$

The significance of W is tested against $F(\alpha, k-1, N-k)$ where F is a quantile of the F-test distribution, with $k-1$ and $N-k$ its degrees of freedom, and α is the chosen level of significance (usually 0.05 or 0.01).

3.4.2 Hypothesis Testing

Independent t-test is used to find out the significant differences between experimental group and control group. The steps of t-test calculation are:

1. Test the hypothesis of the research and setting the α (alpha) level at 0.05 (two tailed test). The hypothesis can be formulated as follows:

    H_0: there is no significant difference on the effect of monopoly game on students' speaking ability between experimental group and control group.

    H_1: there is significant difference on the effect of monopoly game on students' speaking ability between experimental group and control group.

2. Finding t-value using Independent-Sample T Test and comparing the probability with the level of significance for testing the hypothesis. After the scores are computed in SPSS, then see the out put of Independent-Sample T Test and interpret the out put that if sig. (2-tailed) > α (0,05), the researcher should accept the H_0, but if sig. (2-tailed) < α (0,05) so the researcher can reject H_0, it means H_1 is accepted.

T-test is calculated to find out the comparison of two means between experimental group and control group pre-test and post-test. In analyzing the data, the researcher uses independent t-test formula. In calculating t-test, the formula is follows:

$$t = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{S_{x_1 - x_2}}$$

Where:

t is t value

x_1 is average group 1

x_2 is average group 2

S is standard error of the two groups

$\mu_1 - \mu_2$ is always defaults to 0

Where:

$$S_{x_1 - x_2} = \sqrt{\frac{S^2 pooled}{n_1} + \frac{S^2 pooled}{n_2}}$$

$S_{x_1 - x_2}$ is standard error of two groups

$S^2 pooled$ is variants of the two groups

n_1 is Number of sample group 1

n_2 is Number of sample group 2

Pooled variance: the average of the two sample variances, allowing the larger sample to weight more heavily.

Formula:

$$S^2_{pooled} = \frac{(df_1)s^2 1 + (df_2)s^2 2}{df_1 + df_2} \quad or \quad S^2_{pooled} = \frac{SS_1 + SS_2}{df_1 + df_2}$$

$df_1 = df$ for 1st sample; $n_1 + 1$

$df_2 = df$ for 2nd sample; $n_2 + 1$

Estimated standard error of the difference:

$$S_{x_1-x_2} = \sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

In calculating t-test, the researcher uses SPSS version 17.0 program. The steps in analyzing the data of post-test of both experimental and control group are as follow: first, input the data of post-test in SPSS program between experimental and control group, then click Analyze → Compare Means → Independent Sample T Test, after that in Independent Sample T Test, input the score variable into Test Variable, and for group variable into Grouping Variable, then click Define Group, choose group 1 (for experimental) and group 2 (for control), then click OK.