

Hak Cipta Diindungi Undang-Undang

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CHAPTER III

METHOD OF RESEARCH

A. Research Design

The writer used experimental research. The type of the research was a quasi experimental research. According to Creswell (2012, p.309), “Quasi experiments include assignment, but not random assignment of participants to groups. In an experimental design the writer used two classes; they were experimental class and control class. The experimental group received treatment using socratic method, while the control group received direct method.

Table III.1
Research Design

Group	Pre- Test	Treatment	Post-Test
Experimental (X)	T1	Socratic method	T2
Control (Y)	T1	Direct method	T2

Where:

- X : Teaching asking and giving permission by using socratic method
- Y : Teaching asking and giving permission by Direct method
- T1 : Pre-Test
- T2 : Post-Test

There were three stages in doing procedure of research: they were pre-test, treatment and post-test.

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1. Pre-test

Both of groups, the experimental and control group were given pre-test before the treatment. The function of the pre-test was to know the mean scores of experimental and control group.

2. Treatment

The experimental and control groups were taken by using the same topics but different treatments. It means that in the experimental group was taken by using Socratic method, while in the control group was taken by using Direct Method.

Table III.2
Treatments in Experimental Group

Teacher's Activity	Students' Activity
<ul style="list-style-type: none"> • The teacher greets the students to open the class • Teacher gives Pre-test • Teacher collects the answer sheets of students • Teacher calculates the score of the pre-test. • The teacher greets the students to open the class • The teacher explains the meaning of thanking and responses. • The teacher explains how using the socratic method in writing thanking and responses. • The teacher asks the students to respond the meaning of thanking and responses. 	<ul style="list-style-type: none"> • The students greets the teacher • Answer the test • The students collects the answer sheets • The students greets the teacher • The students listen to the teachers' explanation carefully • The students pay attention and focus on the teacher • The students make dialog about thanking and responses.
<ul style="list-style-type: none"> • The teacher opens the class • The teacher recalls the last lesson and replays the thanking and response by using socratic method. 	<ul style="list-style-type: none"> • The students greets the teacher • The students focus on the teacher • The students pay the attention to the teacher

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<ul style="list-style-type: none"> • The teacher replays then makes dialogue slowly • The teacher gives the task about thanking and responses. • Finally, the teachers evaluate their oral test. 	<ul style="list-style-type: none"> • The students make a dialogue about thanking and responses. • The students do the test.
<ul style="list-style-type: none"> • Give direction related to the post-test • Give post-test 	<ul style="list-style-type: none"> • Listen direction • Answer the post-test

Table III.3
Treatments in Control Group

Teacher's Activity	Students' Activity
<ul style="list-style-type: none"> • Teacher gives pre-test, asks the students to explain the thanking and responses. • Teacher explains to the students how to make dialogue of thanking and responses. 	<ul style="list-style-type: none"> • Students do the test, students explain the thanking and responses. • Students pay attention to teachers' explanation
<ul style="list-style-type: none"> • Teacher gives post-test, teacher asks students to answer the question based on the test 	<ul style="list-style-type: none"> • Students do the test, students answer the question based on the text
<ul style="list-style-type: none"> • Teacher collects students' work 	<ul style="list-style-type: none"> • Students submit their work

3. Post-test

The post-test was given to both groups, experimental and control group after treatment. It was to find out the differences of their mean score.

B. Location and Time of the Research

This research was conducted at the eighth grade students of Junior High School Yayasan Dwi Sejahtera Pekanbaru. The Research was conducted during 2016 academic year. The researcher found the problem in this school that the students had lack of confidence in their speaking.

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C. The Subject and the object of the Research

1. The subject of the research

The subject of this research was students at the eighth grade of the Junior High School Yayasan Dwi Sejahtera Pekanbaru.

2. The object of the research

The object of this research was the effect of using Socratic method on students' achievement in speaking at the Junior High School Yayasan Dwi Sejahtera Pekanbaru.

D. Population and Sample

The population of the research was eighth grade at Junior High School Yayasan Dwi Sejahtera Pekanbaru. There were class VIII.1 that consisted of 20 students and class VIII.2 that consisted of 20 students. The total population was 40 students. The technique of sample was total sampling.

**Table III.4
Population**

No	Class	Population
1.	VIII 1	20
2.	VIII 2	20
	Total	40

**Table III.5
Sample**

No	Class	Sample
1.	VIII 1	20
2.	VIII 2	20
	Total	40

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E. Technique of Collecting Data

In collecting data, present researcher took data from pretest and posttest. Pretest was administered to the subject before applying Socratic Method in teaching Speaking. Meanwhile posttest was administered after applying Socratic Method in teaching speaking.

Pretest and posttest contained the same test items. They were just different in time allocation. These pretest and posttest were taken by giving oral test. Students were given five minutes to present or describe real objects orally. Then, the present researcher used these items as the pretest and posttest which used three steps. Those were pretest, treatment, and posttest.

1. Pretest

The pretest was administered before the present researcher used Socratic Method in teaching speaking. It aimed art knowing students' ability in speaking.

2. Treatment

The present researcher as a teacher treated the students by applying Socratic Method around School in teaching speaking

3. Posttest

Posttest was administered after applying treatment. The posttest items were the same as pretest items. Pretest and posttest also had some application when they were conducted in a classroom. The purpose of this posttest was to know students' ability in speaking.



According to Hughes (2003), there were some components that should be considered in giving students' score: they are accent, grammatical, vocabulary, fluency and comprehension.

F. Technique of Analyzing Data

In order to find out whether there is a significant effect of using Socratic Method on independent students' speaking ability, the data were analyzed statistically. In analyzing the data, the writer analyzed the data of the research from the scores of pre-test and post-test by using sample T-test.

In analyzing the data, the writer used t-test formula. According to Gay and Airasian (2000, p.512), t-test is one of the statistics tests used to determine whether two means are significantly different at a selected probability level. Therefore, the writer used independent sample t-test. The data were analyzed by using SPSS 22 in order to find out the result of the students in speaking ability who are taught and who are not taught by using Socratic Method. The writer concluded that:

1. H_a is accepted if the value in the **Sig. (2-tailed)** column is *equal or less* than .05 (e.g. 0.03, .01, .001). It means that there is a significant difference of students' achievement in speaking at the Junior High School Yayasan Dwi Sejahtera Pekanbaru.
2. H_o is accepted if the value is *above* .05 (e.g. 0.06, 0.10). It means that there is no significant difference of students' achievement in speaking at the Junior High School Yayasan Dwi Sejahtera Pekanbaru.



G. The Validity and the Reliability of the Test

1. The Validity of the Test

According to Hughes (2003, p.26), a test is said to be valid if it measures accurately what it is intended to measure. In this research, the researcher used the content validity to measure whether the test was valid or not in this research. According to Hughes (2003, p.26), a test is said to have content validity if its content constitutes a representative sample of the language skills, structures, etc, with which it is meant to be concerned.. Content validity just focuses on how well the items represent the intended area.

2. The Reliability of the Test

Reliability is the measuring of test that is consistent and dependable. It means that the test should consistently measure the person's ability. Furthermore, Brown states that there are two scoring processes in reliability. They are inter-rater reliability and intra-rater reliability. Inter-rater reliability occurs when two or more scores yield inconsistent scores of the same test. Intra-rater reliability is common occurrences for classroom teachers because of the unclear scoring criteria, bias toward particular 'good' and 'bad' students, or simple carelessness.

In this research, the researcher used inter-rater reliability. It means that the scores of the test were evaluated more than one person. The students' achievement in speaking scores were evaluated by two raters.

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The following table is the categories of reliability test used in determining the level of reliability of the test.

Table III. 6
The Level 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

In determining the reliability of the test in the reseach, the writer used inter-rater reliability formula because the writer used two raters in assessing and giving score of students' speaking ability. The scores given by rater 1 were correlated to scores given by rater 2. The higher correlation was, the higher inter-rater reliability. As explained by Henning that if rating of students' result of the test is rated by two or more judges or raters, the correlation between raters should be inter-correlated. Then, the inter-correlation of the raters was used in finding the reliability of the test.

To determine the correlation between scores given by rater 1 correlated to scores given by rater 2, the writer used *Pearson Product Moment* formula through SPSS 22 version.

The following table describes the correlation between scores given by rater 1 and rater 2 by using *Pearson Product Moment* formula through SPSS 22 version.

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Table III. 7

Correlations

		RATER1	RATER2
RATER1	Pearson Correlation	1	.582**
	Sig. (2-tailed)		.000
	N	20	20
RATER2	Pearson Correlation	.582**	1
	Sig. (2-tailed)	.000	
	N	20	20

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

From the table above, it could be seen that the coefficient of correlation product moment r_{obtained} (r_o) between scores given by rater 1 and rater2 was 0.582. Before comparing it to r_{table} (r_t), the writer obtained the degree of freedom

$$df = N - nr$$

$$df = 20 - 2 = 18$$

After the degree of freedom (df) = 18 was obtained, the coefficient of r_{obtained} product moment was compared to r_{table} , either at significance level of 5% or 1%. At significance level of 5%, r_{table} was 0.349; while at significance level of 1% r_{table} was 0.449. Based on r_{table} , it can be analyzed that (r_o) was higher than (r_t) either at level of 5% and 1%. It is clear that $0.349 < 0.582 > 0.449$. So that, the writer concluded that H_o is rejected and H_a is accepted. It means there was a significant correlation between scores given by rater 1 and rater 2. In the other words, the speaking test was reliable.

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H. The Test of Normality

Before analyzing the data, the writer should know the data normally distributed or not. In order to know whether the data has normal distribution or not, the writer used Kolmogorof-Smirnov method as the formula to analyze the data. In this research, the writer analyzed the data by using SPSS (Statistical Product and Service Solutions) 22 version program. The SPSS result for Kolmogorov-Smirnov Z test would be interpreted as follows:

$p\text{-value (Sig.)} > 0.05$ = the data is in normal distribution

$p\text{-value (Sig.)} < 0.05$ = the data is not in normal distribution

The result of normality of pretest and post test score in experiment and control class was computed by using SPSS version 22. It is presented in the following table:

Table III. 8
The Test of Normality of Pretest Score

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
EXPERIMENT	.149	20	.200 [*]	.932	20	.171
CONTROL	.123	20	.200 [*]	.952	20	.397

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the table IV.16 above, it showed that the significance level in Kolmogorov Smirnov test of pretest experimental class was 0.200; it means that $0.200 > 0.05$, and significance level of pretest control class was 0.200; it means that $0.200 > 0.05$. In conclusion, the data was in normal distribution.

Table III. 9
The Test of Normality of Posttest Score

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
EXPERIMENT	.131	20	.200 [*]	.950	20	.368
CONTROL	.168	20	.140	.944	20	.285

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the table IV.17 above, it showed that the significance level in Kolmogorov Smirnov test of posttest experimental class was 0.200; it means that $0.200 > 0.05$, and significance level of posttest control class was 0.140; it means that $0.140 > 0.05$. In conclusion, the data were in normal distribution.

I. The Test of Homogeneity

By knowing the data distributed normally, the writer did test of homogeneity. This test was used to know some variant of population homogenous or not. This test was also used as the requirement in analyzing the data before conducting independent sample t-test. The writer analyzed the homogeneity variant of population by using SPSS 22. The result computation of homogeneity test through SPSS can be seen in the following table:

Table III. 10
Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.351	6	33	0.422

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The result of the test can be seen as follows:

$p\text{-value (Sig.)} > 0.05 =$ the data is homogeneous

$p\text{-value (Sig.)} < 0.05 =$ the data is not homogeneous

According to table IV.18 above, it was found that the significance of the homogeneity was 0.422. It means the significance of the homogeneity test was $0.422 > 0.05$, so it can be concluded that the data was homogenous distributed.