

CHAPTER III

RESEARCH METHOD

In this chapter, the writer presents the method of the study. The research methods consist of research design, research variables, research subject, data collection technique and instrument, research procedure, data analysis procedures, research of hypothesis.

A. Research Design

In this research, the writer uses experimental method. David Nunan states that in an experimental study, there are pre-experimental design, quasi-experimental design and true-experimental design.¹ Based on the title, this research uses Quasi Experimental Design. The research design of pretest and posttest control and experimental group is as follow:

Table 3.1

The Research Design

Class	Group	Pre test	Treatments	Post test
VIIIG	A	C₁	X	P₁
VIIIH	B	C₂	-	P₂

¹ David Nunan. *Research Method in Language Learning*. (Cambridge: University Press.1992), 41.

Where:

A and B : A is Experimental group

B is Control group

C₁ and C₂ : they are the pre test given before treatment in both the experimental and control group.

X : the treatment where the technique is implemented in the experimental group.

P₁ and P₂ : P₁ is the post-test given treatment (using Silent Way) in experimental group.

P₂ is the post test given treatment (without Silent Way) in control group.

This study employs two groups, they are experimental group and control group. The experimental group is given some treatments while the control group is not given some treatments. These two groups are given the same materials and the same test to measure the difference of mean score of these two groups in speaking class. The experimental group is taught by implementing Silent Way while the control group is taught by using traditional technique as usual technique from the teacher. The subject receive pre-test and post-test control and experimental in the form of oral production.

Based on the diagram above, there are two classes, they are VIII-G and VIII-H. VIII-G is as the experimental group which using Silent Way in teaching while VIII-H is as the control group which using traditional

technique in teaching. Both of them do pretest (C_1 and C_2). Pretest is given to know the students' speaking ability before the treatment. Then, the treatment Silent Way as independent variable (X) would be applied to the experimental group. Next posttest (P_1 and P_2) is given to both groups. Posttest is applied to know the students' ability in speaking of the two groups after the treatment is used in teaching. After that, the score of both groups are compared with the improvement.

B. Research variable

A variable is any entity which is determined by the researcher to be studied in order to gain the information, then will be concluded. Kerlinger states that variable is a construct or characteristic which the researcher will learn.² There are two variables examined in this research. Those are independent and dependent variables.

1. Independent variable

Independent variable is the single variable that is not influenced by other variables. In this study the independent variable is Silent Way.

² Prof. Dr. Sugiyono, *Statistika untuk Penelitian Bandung*, (Jakarta: Penerbit Alfabeta, 2000), 3.

2. Dependent variable

Dependent variables is a kind of variable that is affected by others variables. In this study dependent variable is the improvement students' speaking ability at the 8th grade of SMPN 2 Surabaya.

C. Research Subject

This study is conducted in SMPN 2 Surabaya. The researcher chooses second grade students of SMPN 2 Surabaya as the population of this study. The amount of the population is 304 students. Clustering technique is used to take the sample of this study. Clustering technique is a technique to get the sample through the sameness. And the sample is taken from groups of individuals (cluster) in one place.³ According to Donald Ary, cluster sampling is not choosing in individual, but a group of individuals who are naturally together.⁴ Thus, two classes of second grader are taken as the sample of the study. They are VIII-G as the experimental class and VIII-H as the control class. Total amount of the sample is 76 students, 38 students are in control group and 38 students are in experimental group.

³M. M. Djunaidi Ghony – Fauzan Almansyur, *Metodologi Penelitian Pendidikan: Pendekatan Kuantitatif*, (Malang: UIN Malang Press, 2009), 154

⁴ Donald Ary, *Introduction to Research in Education*, (Wadsworth: USA, 2002), 168

D. Data Collection Technique and Instrument

1. Data collection technique

The data collection techniques are observation and test which includes try-out; pretest and posttest. The researcher is helped by the teacher to observe during the process of teaching and learning at experimental group while the researcher is implementing Silent Way in teaching speaking. Observation is aimed to gather accurate information about how a strategy actually operates, particularly about processes. In this section, the researcher observes the students in speaking learning process. Before giving pretest and posttest, the researcher conducts try-out to know the reliability of the test which will be used in pretest and posttest. After the researcher finds the reliability of the test, then pretest and posttest are given. Pretest is given for both of experimental group and control group before getting the treatment. The posttest is given after getting the treatment and conduct to know students' achievement progress after getting treatment.

2. Instrument

To get the empirical data and draw the conclusion or the result of research, the writer uses some instruments. The instrument is the

measurement tool in the test⁵, which potentially makes the researcher easier in collecting data and analysis. The instrument is test:

1. Test

The test (pretest and posttest) is identifying the quality of students' speaking skill before and after treatment. It is intended to administer in order to gain the needed data. It is addressed to both experimental group and control group. The criteria of speaking score include some component such accent, grammar, vocabulary, fluency, comprehension. There are some steps to conduct the test:

a. Try-out

Try-out is held before the speaking task applied. The purpose of this activity is to find out reliability of the instrument that will be applied. The participation of the try-out are the students of VIII-A. The amount of VIII-A the students who participate in this try-out are 38 students.

b. Pretest

Pretest is to measure on some attribute or characteristic that you asses from participants in an experiment before they receive a treatment. The researcher administers pretest to find

⁵ Sugiono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (Bandung: Alfabeta, 2008) p.148

out the baseline of students' skill before they get different treatment.

c. Posttest

Posttest is to measure on some attribute or characteristic that you assess from participants in experiment after they receive treatment. The posttest conducted after the applying Silent Way in English teaching. It is aimed to quantify the efficiency of Silent Way applies in experimental group and conventional teaching to the control group.

To measure the students' speaking skill, the researcher uses rubric analytical scoring adapted from Arthur Hughes to give score to the students. The students' score are given in the form of number to enable the researcher calculates and finds the result from the test.

2. Observation

Observation is aim to gather accurate information about how a strategy actually operates, particularly about processes. In this section, the researcher observes the students in speaking learning process.

3. Validity

Validity means the extent to which an instrument measures what should be measured.⁶ Validity is the level to which score on a test enable on to make meaningful interpretation.⁷ Meanwhile according to Donal Ary validity is “the extent to which an instrument measured what it claimed to measure. The focus of recent views of validity is not on the instrument itself but on the interpretation and meaning of the score derived from the instrument”.⁸

4. Reliability

Reliability indicates how consistently a test measure whatever it does measure.⁹ To find the reliability of the test, the researcher uses the correlation of Product Moment.¹⁰

$$r_i = \frac{n \sum X_i Y_i - (\sum X_i)(\sum Y_i)}{\sqrt{[n \sum X_i^2 - (\sum X_i)^2][n \sum Y_i^2 - (\sum Y_i)^2]}}$$

n = The number of the students

X_i = Pretest score of try-out

Y_i = Posttest score of try-out

⁶ Donald Ary, et. al, *Introduction to Research in Education*(Wadsworth: Cengage Learning, 2010), 316

⁷ Ary, et. al, p.242

⁸ Ary, *Introduction to Research in Education*, p.225

⁹ Ary, et. at, p.242

¹⁰ Sugiono, *Statistika Untuk Penelitian* (Bandung: Alfabeta, 2007), p.357

The scale to measure the reliability of the test according to Brown:¹¹

Table 3.2
Reliability of the Test

SCALE	LEVEL OF RELIABILITY
0.00 – 0.20	Not reliable
0.20 – 0.40	Less reliable
0.40 – 0.60	Reliable enough
0.60 – 0.80	Reliable
0.80 – 1.00	Very Reliable

Below is the result of the try-out:

Table 3.3
Try-out scores

Students	X_i	Y_i	X_i^2	Y_i^2	$X_i \cdot Y_i$
1.	56	60	3136	3600	3360
2.	60	80	3600	6400	4800
3.	62	80	3844	6400	4960
4.	52	80	2704	6400	4160
5.	56	80	3136	6400	4480
6.	66	70	4356	4900	4620
7.	60	75	3600	5625	4500
8.	63	70	3969	4900	4410
9.	56	75	3136	5625	4200
10.	58	75	3364	5625	4350

¹¹Dwi Wahyu Sugiarti, *The Effectiveness of Clustering Technique in Teaching Writing at The Eighth Grade of MTs Raudlatul Ulum*, (Surabaya: IAIN, 2010), 26

11.	72	80	5184	6400	5760
12.	66	80	4356	6400	5280
13.	68	80	4624	6400	5440
14.	60	70	3600	4900	4200
15.	58	60	3364	3600	3480
16.	60	80	3600	6400	4800
17.	68	80	4624	6400	5440
18.	60	75	3600	5625	4500
19.	64	80	4096	6400	5120
20.	58	70	3364	4900	4060
21.	60	85	3600	7225	5100
22.	66	75	4356	5625	4950
23.	62	80	3844	6400	4960
24.	70	80	4900	6400	5600
25.	64	75	4096	5625	4800
26.	54	60	2916	3600	3240
27.	72	85	5184	7225	6120
28.	70	75	4900	5625	5250
29.	60	65	3600	4225	3900
30.	60	70	3600	4900	4200
31.	75	80	5625	6400	6000
32.	58	60	3364	3600	3480
33.	78	80	6084	6400	6240
34.	62	70	3844	4900	4340
35.	81	85	6561	7225	6885
36.	64	70	4096	4900	4480
37.	58	60	3364	3600	3480
38.	70	75	4900	5625	5250
Σ	2407	2830	154091	212800	180195

$$r_i = \frac{n\sum X_i Y_i - (\sum X_i)(\sum Y_i)}{\sqrt{[n\sum X_i^2 - (\sum X_i)^2][n\sum Y_i^2 - (\sum Y_i)^2]}}$$

$$r_i = \frac{38 \cdot 180195 - (2407)(2830)}{\sqrt{[38 \cdot 154091 - (2407)^2][38 \cdot 212800 - (2830)^2]}}$$

$$r_i = 0,514$$

The result of the try-out shows that the value of the reliability of the test is 0,514. Based on the table of criteria of the reliability of the test, 0,514 is reliable enough. Thus, it could be used for the instrument of this research.

E. Research Procedure

The research procedure is divided into 5 steps. There are try-out, pretest, treatment and observation. Try-out is used to find the reliability of the test which is given in pretest and posttest. Then, the researcher collects the data taken from the students' pretest and posttest score. The pretest and posttest scores are collected from experimental and control group. The research schedule can be seen on the table below:

Table 3.4
Research schedule

No.	Day / Date	Activity	Class / Group
1	Monday, June 17 th 2013	Try-out (to find out the reliability of the test)	VIII-A
2	Tuesday, June 18 th 2013	Pretest	VIII-G (Experimental Group) VIII-H (Control Group)
3	Wednesday, June 19 th 2013	1 st Treatment Introduction of Silent Way Observe the teaching process 1 st Meeting Introduce and explain the topic based on the syllabus on speaking skill	VIII-G (Experimental Group) VIII-H (Control Group)
4	Thursday, June 20 th 2013	2 nd Treatment Practice speaking by using Silent Way and give some examples 2 nd Meeting Teaching speaking using conventional teaching	VIII-G (Experimental Group) VIII-H (Control Group)
5	Friday, June 21 st 2013	Posttest	VIII-G (Experimental Group) VIII-H (Control Group)

1. Experimental group

The students of VIII-G are the member of experimental group. In the experimental group, the researcher is administrated in four meetings. The meeting covers pretest, 1st treatment 2nd treatment, and posttest. The students are taught using Silent Way as the treatment for the experimental group.

a. Pretest

The pretest is held on Monday, June 17th 2013. The aim of conducting pretest is to know the students' speaking skill before they receive the treatment.

b. 1st Treatment

The following step is the implementation of the treatment for experimental group by applying Silent Way. The first treatment is held on Wednesday, June 19th 2013. The topic is "describing people". The researcher set up situation that focus students attention on the structure of the language. The researcher works with the students she gives some examples to the students by gestures on Silent Way technique. After that, the researcher asks the students to describe their reaction to the lesson or what they have learned.

c. 2nd Treatment

The second treatment is held on Thursday, June 20th 2013. The topic is the same as in the first treatment. In experimental group, the

researcher elaborates how to describe people by finger. The researcher indicates that each of his fingers represented a word in a sentence and uses to locate the trouble spot for the students. After that, the students try that activity with the other students.

d. Posttest

The posttest is conducted on Friday, June 21st 2013. The aim is to know the students' enhancement progress after getting treatments. The researcher conducts posttest for 90 minutes.

2. Control Group

The members of control group are the students of VIII-H. There are also four meetings in control group. The four meetings include pretest, 1st meeting, 2nd meeting, and posttest. The students are not taught using the Silent Way but conventional teaching.

a. Pretest

The pretest is held on Tuesday, June 18th 2013. The researcher conducts pretest for 90 minutes. It is also for measuring the students' achievement before getting treatment.

b. 1st Meeting

The 1st meeting is held on Wednesday, June 19th 2013. The researcher uses English Students' workbook based on the syllabus for the control group.

c. 2nd Meeting

The 2nd meeting is held on Thursday, June 20th 2013. In the second meeting, the researcher elicits the students about what they have learned in the previous meeting. They discuss the topic on the workbook and presented it in front of the class to practice speaking.

d. Posttest

The posttest is conducted on Friday, June 21st 2013. It is aimed to get the result of the students' improvement after they are taught using the conventional teaching. The researcher conducts the posttest for 90 minutes.

F. Data Analysis Procedures

In this research, the researcher collects the data from observation and test. The observation is used to find out the result of the first statement of the problem. The researcher uses observation checklist, helped by the teacher. The observation is conducted in every meeting of the treatment at experimental group. The answers are got by giving tick on yes or no column on the table of observation checklist. And for more detail description, it's noted and explained on the note column. It shows how each component is implemented. It is supported by the observation checklist and documentation. *(See appendix)*

Meanwhile, the tests are used to find out how Silent Way improves students' speaking skill and whether students who are taught through Silent Way have better speaking skill than those who are not taught through Silent Way. The researcher uses rubric speaking skill adapted from David P. Haris (*See appendix*) to score the students' speaking skill. The tests consist of pretest and posttest. The students' posttest score from both experimental and control group is analyzed through T-test. T-test is used to test the comparative hypothesis of two samples if the data is in interval or ratio. Afterward, the result of the T-test, t-value, is compared with t-table to find out which hypothesis is accepted or rejected.

The analysis procedures are as follows:

1. Observation

The data of the observation is collected from the observation checklist. The observation is done during teaching and learning process (treatments) at the experimental group. The teacher helps the researcher to observe the students by filling the observation checklist while the researcher teaches the students using Silent Way. The result of the observation is checked to the lesson plan. It's aimed to know how Silent Way is used and whether there are some changes from the lesson plan compared with the real situation that has been observed and written on the observation checklist.

2. T-test

T-test is used for comparative hypothesis of two samples if the data is in interval or ratio¹². It is aimed to compare if the students' score of the test from both experimental and control group are significantly different. By using t-test formula, the researcher calculates the students' posttest score from experimental and control group as follows:

- a. The first step is the researcher put the scores of the pre-test and post-test of experimental and control groups.
- b. Second, the researcher would analyze the data through t- test to find out whether the difference of the scores between them is significant or not. Through the following formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} \right) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where:

\bar{X}_1 = mean score sample 1

\bar{X}_2 = mean score sample 2

n_1 = many of sample data 1

n_2 = many of sample data 2

¹² Sugiono, *Statistika Untuk Penelitian*, p. 121

S_1^2 = sample variants 1

S_2^2 = sample variants 2

- c. After calculating all of the scores, the researcher calculates the number of degree of freedom by adding the individual of each group, then subtract of two. The formula as follows:

$$df = N1 + N2 - 2$$

Where:

df = degree of freedom

N1 = number of subject in experimental class

N2 = number of subject in control class

Standard of significance¹³ = 0.05

- d. After doing those steps, the researcher concludes the result of the research by test the hypothesis.

G. Research Hypothesis

The researcher needs to check and compare the result of t-test (t-value) to the t-table.

1. If the t-value is more than the value in the t-table ($t_{\text{value}} > t_{\text{table}}$), it means that H_a is accepted and H_0 is rejected. So, students who are taught through

¹³ Sugiono, *Statistika Untuk Penelitian*, p. 138

Silent Way have better speaking skill than those who are not taught through Silent Way.

2. On the other hand, if the t-value is less than the value in the t-table ($t_{\text{value}} < t_{\text{table}}$), it means that H_0 is accepted and H_a is rejected. Thus, students who are not taught through Silent Way have better speaking skill than those who are taught through Silent Way.