

CHAPTER III

RESEARCH METHOD

In this chapter, the writer presents research design, population, sampling and sample, variable, data and data source, method of collecting data, research instrument and technique of data analysis.

A. Research Design

Research design is the most important part of a research. A writer must arrange the research design first before going to the field to conduct a research. The writer also must consider several things in a research such as; the purpose of the research, nature of the problems and the circumstances around the field. Here, the researcher used quantitative approach which has purposes to study relationships, cause and effect. Quantitative approach produce a numerical data that can be analyzed in the end of data collection (Ary et all 2010:25).

Experimental research is a systematic and logic method to answer a question “ If something placed in controlled analyzed situation, what will happen?” in this situation the researcher manipulate a treatment, stimulus, or certain condition Syamsuddin (2011). experimental research involves a study of the effect of the systematic manipulation of one variable(s) on another variable. An experimental research aims to find out cause effect relationships, which use the experimental data that compared with the controlled data.

Generally an experimental research design has three important characteristics based on Ary in Syamsuddin(2011), they are;

1. Manipulate independent variable .
2. The possible variable (other variables) may affect independent variable must be controlled to be constant variable.
3. The effect of manipulate independent variable and dependent variable observed directly by the researcher.

The main characteristic of an experimental research is the manipulation. There are any designed manipulations of the variables. Manipulation here based on sukardi at syamsuddin (2011) is an action or treatment done by the researcher based on scientific consideration in responsible way to obtain different effect at the independent variable.

The writer controlled the dependent variable to find out the effect of independent variable. Control here, based on Gay in the Syamsuddin (2011) is an effort on the part of researcher to remove the influence of any variable other than the independent variable that affect performance on a dependent variable.

Fraenkel and Wallen at Syamsuddin (2011) stated that there are three main design used for experimental design;

1. One-shot case study.
2. The one group pre-test post-test.
3. The static group comparison design.

Considering the purpose of the study that was to identify the difference between students' score before and after being taught by using suggestopedia, this research conducted as a pre-experimental quantitative research design. The writer use one group pre-test and post-test. One single group was measured or observe before and after being exposed to a treatment. This research was classified as pre-experimental design because the writer chooses the sample based on some criteria not in random way.

Table 3.1 A diagram one group pre-test post-test design

Pre-test	Treatment	Post-test
Y1	X	Y2

The one group pre-test post-test design involves three steps;

1. Administering a pre-test to measure the dependent variable
2. Applying an experimental treatment X to the subject
3. Administering post-test again measuring independent variable

The procedure of experimental research that use on group pre-test post-test design applied in this study are:

1. Administering pre-test aims to measure students speaking score before being taught by using suggestopedia of eight graders of MTs Al-Huda Bandung.

2. Applying the experimental treatments by using suggestopedia as the teaching method to the eight graders of MTs Al-Huda Bandung twice on 11 January 2017 and 18 January 2017.
3. Administering post-test aims to measure students speaking score after being taught by using suggestopedia of eight graders of MTs Al-Huda Bandung.

The effectiveness of the teaching method would be known after the writer found out the significance different score of the students before and after being taught by using suggestopedia. Variable as characteristics of the subject of a research, and the characteristic tend to be different from an individual to another or from time to time. In this research, there were two variables the dependent variable and independent variable. Dependent variable was Suggestopedia as teaching method and the independent variable was students' speaking achievement.

A. Population, sample and sampling

1. Population.

Population is whole of subject in the research. According to Ary et al (2010:148) "a population is defined as all members of any well-defined class of people, events, or objects". A population is any group of individuals that have one or more characteristics in common that are interesting. In this study, the population were all of eight grades of MTs Al-Huda Bandung in the academic year 2016/2017, which consisted of seven classes and the total students are 190 students (104 boys and 86

girls). The writer took the A class as the sample of this research that consisted of 18 students with 8 boys and 10 girls. The writer chooses A class because the students of A class of MTs Al-Huda Bandung has average proficiency. The population can be seen in the table 3.2 as follows:

Table 3.2 Population

NO.	CLASS	MALE	FEMALE	TOTAL
1.	VIII A	8	10	18
2.	VIII B	12	11	23
3.	VIII C	16	13	29
4.	VIII D	18	13	31
5.	VIII E	17	14	31
6.	VIII F	17	12	29
7.	VIII G	16	13	29
	TOTAL	104	86	190

2. Sample and sampling.

In a research, there are two types of sampling; probability sampling and non-probability sampling. Non-probability sampling is also called non-random sampling. Non-random sampling is a sampling technique which is used when it cannot be ensured that each item has an

equal chance of being selected. There are three types of non-random sampling; convenience sampling, quota sampling, and purposive sampling. Based on the three types of non-random sampling, this study used purposive sampling. The writer choose the sample based on who the writer think would be appropriate for the study, a need or purpose for the research and represent the population.

In this research the writer decided the A class as the sample of this research, it is because the students' of the class fulfill the characteristics which is the writer wants to be tested. This class consisted of 18 students with 8 boys and 10 girls. The writer chooses A class because the students of A class of MTs Al-Huda Bandung has the characteristics which are suitable with the needs of this research and represent the population. The students whose are in A class of MTs Al-Huda bandungare not confidence in speaking also they are being afraid of making mistakes in speakingso that their speaking achievement were poor.

B. Variables

A Variable is a construct or a characteristic that can take on different values or score, variables and the relationships that exist among variables become the focus of the study by researchers (Ary et al 2010:37). There were two variables in this research, independent and dependent variables. The independent variable was the major variable to be investigated. This variable was selected, manipulated, and measured by the writer. Meanwhile, the

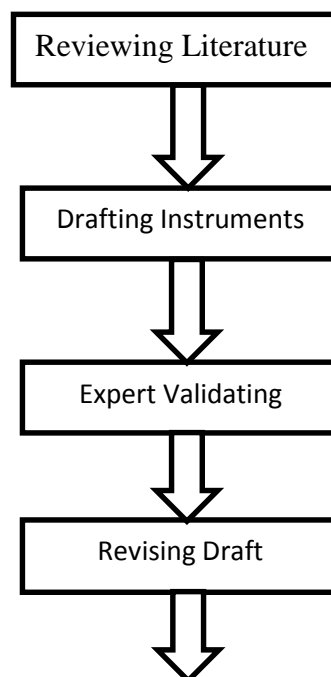
independent variable of this research was Suggestopedia method. The dependent variable was the variable that was observed and measured knowing the effect of independent variable. In this study, the dependent variable was students' speaking ability.

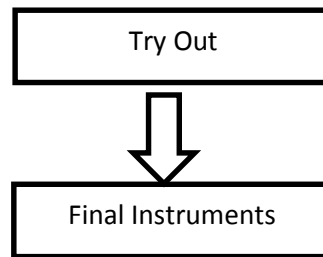
D. Research Instruments

The instrument used to get the data was test. According to Brown (2000) Test is a method of measuring person's ability or knowledge, in a given domain. Based on the statement, test can be used to measure the students' ability or students' achievement. In this research, the test used was speaking proficiency test about fables.

The writer develop the instruments through the following steps:

Table 3.3 Instrumentation





1. Test (Pre-test and Post-test)

In this research, the researcher used pre-test and post-test. Pre-test was given to the sample. It was conducted before the treatment. Meanwhile, post-test was conducted after the treatment. It was taken as measurement tool to measure students' speaking ability before and after the treatment was conducted, it is done to know if there is significant different between the scores or not.

a. Pre-test

Pre-test was administered before the treatment. Pre-test was conducted on January 11th 2017 followed by 18 test taker. The writer gave a narrative text to the students, the text was about fable entitled "The Lion and The Elephant" that was developed based on the syllabus and suited with the sample of the research through validity and reliability testing. The students then read it and retell the story in front of the class. The writer takes rule as the observer whose observed and rubric.rate students speaking ability based on the scoring guidance or scoring

b. Post-test

Post-test was administered after the treatment. Post-test was conducted on January 18th 2017 that was followed by 18 test taker. The writer used the same method which used in the pre-test. Post-test was also administered in the form of speaking test. The writer used similar way. The writer gave a narrative text for the students, the text was about fable entitled “A Wizard and A Mouse” that was developed based on the syllabus and suited with the sample of the study through validity and reliability testing. The writer then ask the students read and retell the story in front of the class. Again, here the writer takes rule as the observer whose observed and rate students speaking ability based on the scoring guidance or scoring rubric.

E. Validity and Reliability Testing

Reliability and Validity are two very important concepts used to determine whether or not the instruments were good (Ary et al 2010:224).

1. Validity Testing.

Brown (2000) states that validity is the degree to which a test actually measures what it is intended to measure. This test was used to check whether the instrument is valid or not if the instrument was applied in a subject of the research. According to Weir as cited in (Isnawati:2015) Test validity presupposes that the writer can be explicit about what is to be tested and takes steps to assured that the test reflects realistic use of particular ability to be

measured. A test should test what the writer wants to test. The blueprint of the test that the writer uses in this study can be seen in Appendix 1. To know the validity of instrument used to gather the data, the writer used content validity and construct validity. The explanation of content validity and construct validity, as follows;

a. Content validity

The test was said to have content validity if its content constitutes a representative sample of the language skills, structure etc., being tested. Beside that the content of instrument has to relevant with the purpose of the test. The writer has to be sure that the content of the test is appropriate with the students and should be suited with their level. In this research, the content of instruction in testing used instruction to read and retelling narrative story. It was suitable for the eighth grade students of MTs Al-Huda Bandung.

In this study, the writer used content validity. This kind of validity depends on careful analysis of the language being tested and the particular treatment. The content validity in this research can be showed as follows:

Table 3.4 Content Validity

Indicator	Speaking
Doing the short monologue in narrative	Retell the story based on the text given

b. Construct validity

Construct validity is capable of measuring certain specific characteristic in accordance with a theory of language behavior and learning. It's the process of determining the extent to which test performance can be interpreted in term of one or more construct. To reach construct validity a test should measure just the ability which is supposed to measure. Here, the writer used construct validity in administering speaking test. It was used to measure the students' speaking ability.

In this study the writer use IBM SPSS 20.00 to measure the construct validity of this research, based on the output result of validity test can be drawn conclusion as shows in the following table:

Table 3.5 Construct Validity

No	test	Nilai Sig	Tarafsignifikansi	Hasil	Keputusan
1	Pre-test	0,034	0,05	$0,034 < 0,05$	Valid
2	Post-test	0,037	0,05	$0,037 < 0,05$	Valid

From the table above the writer concluded that the instruments were valid, it can be seen from the result of the validity testing by using IBM SPSS 20.00 shows that the both instruments (pre-test and post-test) got result under 0,05 which means that the instruments were valid as shows on the table above.

2. Reliability Testing.

According to Ary et al (2010:224) reliability indicates how consistently a test measures whatever it does measure. Reliability also called as consistency or dependably of a test, if the students are given same test on two different times, the test should produce similar results. The word similar was used here because it was almost impossible for the test takers to get the same scores exactly when the test was repeated on the following day. Meanwhile, the more similar the scores are, the more reliable the test is. The reliability coefficient is 0-1, the ideal reliability coefficient is 1 which means that the result of the test are precisely the same, the weakest reliability coefficient is 0 which means the result of the test were unconnected (Isnawati:2015).

To measure the reliability result of the test, the writer used rater reliability or scorer reliability, this kind of reliability testing is suitable for subjective tests which is involves the rater in the process of judgment such as writing and speaking test. In this research the writer use inter-rater reliability where the two scorers did the scoring and the two sets of scores gotten from the two scorers were calculated to get the correlation coefficient. The two scorers were the writer and the English teacher.

The writer used Alpha Cronbach Reliability Coefficient in IBM SPSS 20.00 to analyze the correlation coefficient. The criteria of reliability`s degree can be seen on Table below, whereas the reliability`s result can be seen on the table

3.5. According to Sugiyono (2015:231) the value of cronbach's alpha can be interpreted as follow:

Table 3.6 cronbrach's alpha interpretation based on Sugiyono

Cronbach's	Alpha Interpretation
0,00 – 0,199	Less Reliable
0,20 – 0,399	Rather Reliable
0,40 – 0,599	Quite Realiabile
0,60 – 0,799	Reliable
0,80 - 1,00	Very Realiabile

After the score of pre-test and post-test calculated using IBM SPSS 20.00 the writer got result as follows:

Table 3.7 pre-test reliability

Reliability Statistics

Cronbach's Alpha	N of Items
,868	2

Table 3.8 post-test reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
,935	2

From those tables above we can see that the reliability coefficient from the pre-test is 0,86 and the reliability coefficient from the post-test is 0.93. Based on Cronbach's alpha interpretation as stated by Sugiyono on the table 3.5 It means that the pre-test and the post-test was very reliable, so it can be concluded that the both test were reliable.

F. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is conducted to know whether the gotten data is normal or not. The computation of normality testing in this research using *IBM SPSS Statistics 20.00* is *One-Sample Kolmogorov-Smirnov test* by the value of significance () = 0.050. Testing of data normality is conducted by the rules as follow:

- If the value of significance > 0.050 so the distribution data is normal.
- If the value of significance < 0.050 so the distribution data is not normal.
- If the distribution data is normal, so next to homogeneity testing.

2. Homogeneity Testing

Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The computation of homogeneity testing by using *IBM SPSS Statistics 20.00* is *Test of Homogeneity of Variance* by the value of significance = 0.050. Before doing homogeneity testing, the researcher decides hypothesis in this homogeneity as follow:

H₀: Both variances (before and after given the treatment) are same.

H_a: Both variances (before and after given the treatment) are different.

There is also certainty in taking decision of homogeneity testing, as follow:

The value of significance > 0.050, so H₀ is rejected, its mean that the data of the populations that have different variance.

A. Method of Collecting Data

There were several steps in collecting data that was done by the writer in order to get the data needed, they were pre-test, treatment and post-test. The further description of those steps are as follows:

The first step is conducting Try out, it is aimed to test whether the instruments that the writer going to use are reliable and valid. So that the writer can continue to use the instruments for pre-test and post-test and if the instruments not reliable and valid yet the writer should revise the instruments before use it in pre-test and post-test.

After that the writer conducting pre-test to measure the students' speaking proficiency before taught by using suggestopedia method. Here the

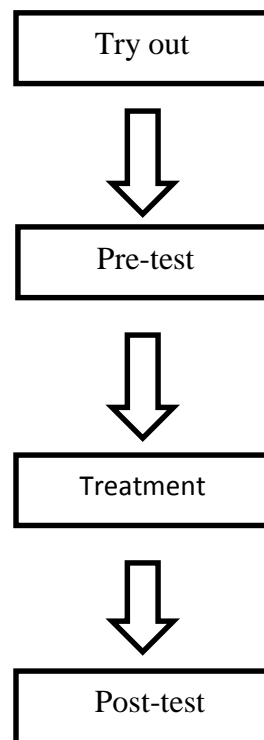
writer ask the students to retell a story about fable that have been prepared by the writer before conducting the pre-test and after get approval from the expert or expert validation which means that the test was good enough, suitable and can be applied to the students.

Next step is conducting treatment. Here the writer applying suggestopedia method to the students as an effort to improve the students' speaking proficiency, the writer implement suggestopedia based on GeorgiLozanov model as stated in the previous chapter. The treatment stressed on the use of music especially baroque and classical instrument music supported by comfortable classroom environment which believed can reduce the students' mental block so can makes the students learn in relax way, as the effect the students can absorb the material easily and effectively without any mental barriers so that they can speak up better and confidently. The writer made cheerful and fun class' atmosphere which is allows the students to limit their stress in the learning process in order to support the method, the writer also act as friendly as possible.

The last is conducting post-test. This step conducted in order to measure the students' speaking proficiency after being taught by using suggestopedia method to know the effect of the treatment, to know whether the method is effective or not, can improve students' speaking ability or not. Here the writer also ask the students to retell a story about fable that have been prepared by the writer before conducting the pre-test and after get

approval from the expert or expert validation which means that the test was good enough, suitable and can be applied to the students. Furthermore the score gotten from the pre-test and post-test will be calculated and compared to know if there is significant difference between them or not. The diagram of the steps can be seen in the following table (3.10):

Table 3.9 Method of Collecting Data



H. Technique of data analysis

The data were gotten from pre-test and post-test. Then, the writer computed the data of pre-test and post-test scores from the sample of the research (VIII A class of MTs Al-Huda Bandung) because the researcher want to know whether there was significant difference of students score in

speaking ability between the students score before and after being taught by using suggestopedia.

After that, the writer analyzed the normality of pre-test and post-test gotten from VIII A class as the sample of the research. Normality testing is conducted to know whether the gotten data is normal or not. The computation of normality testing in this research used *IBM SPSS Statistics 20.00* is *One-Sample Kolmogorov-Smirnov test* by the value of significance () = 0.050. Testing of data normality is conducted by the rules as follow:

- If the value of significance > 0.050 so the distribution data is normal.
- If the value of significance < 0.050 so the distribution data is not normal.

If the distribution data is normal, so next to homogeneity testing. Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The computation of homogeneity testing by using *IBM SPSS Statistics 20.00* is *Test of Homogeneity Variance* by the value of significance = 0.050. Before doing homogeneity testing, the researcher decided hypothesis in this homogeneity as follow:

H₀: Both variances (before and after given treatment) are same.

H_a: Both variances (before and after given treatment) are different.

There is also certainty in taking decision of homogeneity testing, as follow:

The value of significance > 0.050 , so H_0 is rejected, its mean that the data is the populations that have different variance. If the data gotten was normal and homogeneous, the next, testing hypothesis by using *IBM SPSS Statistics 20.00* is *independent sample t-test* for gained scores. The gained scores was the result of post-test minus pre-test and then it was counted by using *IBM SPSS Statistics 20.00* is *independent sample t-test* for gain scores. In this research, hypothesis testing was used to know whether there are difference between teaching speaking using suggestopedia and conventional teaching towards material of speaking ability.

Interpretation of the result of *paired sample t-test* on gained scores of the Sample are as follows:

- If the value of significance < 0.050 and $t_{count} > t_{table}$. Its mean that there is difference between use suggestopedia and do not use suggestopedia towards students' achievement in speaking.
- If the value of significance > 0.050 and $t_{count} < t_{table}$. Its mean that there is no difference between use suggestopedia and do not use suggestopedia towards students' achievement in speaking.

If the gotten data was normal and homogeneous, the testing hypothesis use parametric statistic *T-test* but if the gotten data was not normal and homogeneous, so testing hypothesis by non-parametric statistic, like *Mann-Whitney* testing. This testing was strongest test than another non-

parametric test. The test was other alternative for T-test parametric if the writer wants to avoid the opinion of T-test which the measuring in the research is weaker than interval scale. Interpretation of the result of *Mann-Whitney* testing on *gain scores* of sample are as follows:

- If the value of significance < 0.050 . Its mean that there are difference between *gained scores* of the students that are taught by using suggestopedia and whose not in speaking.
- If the value of significance > 0.050 . Its mean that there are no difference between *gained scores* of the students that are taught by using suggestopedia and whose not in speaking.