CHAPTER III

RESEARCH METHOD

This chapter presents the review of some theories about research design. It consists of research design, population and sample, research variable, research instrument, validity and reliability testing, normality testing, data collection method and data analysis.

A. Research Design

In this research, pre-experimental research design is used by the researcher. There are many kinds of experimental research design. The one called as *one group pre-test post-test* (Moorhead, 2014: 1). In this case, the researcher chose *pre- experimental design* with *one group pre-test post-test*. It means that the researcher only used single class in conducting this research.

The researcher used pre-experimental design because of many reasons. First, there are many independent variables that cannot be manipulated by the researcher, either theoretically or practicality. Theoretically, there is no theory can support the researcher to manipulated the variable of the research, while practicality means that the researcher cannot use another variable to practice the strategy. Second one, the researcher wants to investigate the conditions that naturally occur or that have already occurred in the field study. Third, the researcher intends to study how the variables are related (Moorhead, 2014: 1).

In addition, this research only takes one class or group to do pre-test, treatment, and post-test to know how far the effect of using dictogloss strategy on students' listening comprehension.

In one group pre-test and post-test design, the researcher observes and analyzes a single group both before and after implementing the treatment. Pre-experimental research concerned administering pre-test for dependent variable, implementing the treatment to the subjects, and administering post-test in the last meeting. The result of the treatment can be detected from comparing pre-test and post-test. The design of this research can be seen as follow:

Table 3.1 Design of one group pre-test and post-test

Pre-test	Independent variable	Post-test
X1	Y	X2

Note: X1 = Pre-test

X2 = Post-test

Y = Treatment

B. Population, Sample, and Sampling of the Research

1. Population

   According to Ary (1979: 129) a population *is* defined as all members of any well-defined class of people, events or objects. Then, the researcher

study and sum up the result of research. The population in this research is all of the students from eleventh grader in MAN 1 Tulungagung academic year 2015- 2016 which consist of 300 students.

2. Sample

Sample is a part of population in this research. Jack R. Fraenkel & Norman E. Wallen says that sample is any group on which information was obtained. Besides, According to Ary (1979: 129) a sample is a portion of a population. If the population is large and the researcher cannot study it completely, it means that the researcher may use sample taken from the population. The sample of this research is students in eleventh class of excellent religion (XI IIK/ Excellent Religion) which consists of 30 students; 6 male and 24 female.

3. Sampling

Sampling is the process of selecting a subset of units from the population. We use sampling formulas to determine how many to select because it is based on the characteristics of this sample that we make inferences about the population (Ary, 1979: 130). In short, sampling is the process used by the researcher to choose the individual or sample of population based on the information need. The chosen individual or sample have to represent the entire population for completing data.

In this research, the researcher used purposive sampling technique to find the individual or sample. Purposive sampling is technique of taking sample by definite consideration from the researcher. Purposive

sampling belongs to non-probability sampling. Purposive sampling is used because of reasons. First, because the researcher who selecting the sample is who tries to make the sample representative for the population of the study. Second, because the researcher points to her/ his opinion or purpose to choose the current sample. Thus, the sample is being the representation subjective of the study (Paula Lagares Barreiro and Justo Puerto Albandoz, 2001: 4).

Practically, there are some of reasons why the researcher chooses the class. First, the class has low comprehension on listening based on the English teacher there. Second, the English teacher gives an official instruction to the researcher due to choose the class as a sample of this research among another class. Based on the English teacher in MAN Tulungagung 1, especially teacher of XI MIA (1, 2, 3, excellent 1 and 2), XI Excellent language and XI Excellent religion, the researcher already choose one class that is XI Excellent Religion (XI IIK U) as the sample of thus research.

C. Research Variable

Variable is one key terms in any research. Linguistically, variable is derived from the words *vary* and *able*. Thus, seen from the linguistic perspective, variable is something that might be different from each other. According to Simon Kwan and Peter Wolf (2002: 5) that a variable is a symbol to which numerals or values are assigned. In addition, a variable is

any condition than can vary or change in quantity or quality. In conclusion, variable are characteristics of subjects of a research, and the characteristics tending to be different from one to another and from time to time. Variable should be clearly stated and measurable in a research. In this research, there are two kinds of variable such as independent variable and dependent variable.

1. Independent variable

    Independent variable is the one affecting another variable. According to Parina Patel (2009: 2), independent variable is variable that help explain the change in the dependent variable. The treatment of this research belongs to independent variable and the output is the dependent variable. In this research, the independent variable is teaching listening using dictogloss as interactive method.

2. Dependent variable

    Dependent variable is the one affected by independent variable. Parina Patel (2009: 2) that dependent variable whose change the researcher wishes to explain. Dependent variable often called as output, criteria, consequence in a research. In this research, the dependent variable is listening comprehension.

D. Research Instrument

According to Fraenkel (2012: 111) instrument is the devise such as: pencil-and-paper test, a questionnaire or rating a scale that the researcher

uses to collect the data. Instrument defines as tools for gaining the data needed. Essentially, the researcher must ensure that the research instrument they chosen were valid and reliable. In this research, test is used as the instrument to collect the data.

1) **Test**

Test is a systematic procedure for observing persons and describing them with either a numerical scale or a category system. Thus test may give either qualitative or quantitative information (Anthony J. Nitko). Test commonly refers to a set of items or questions under specific conditions. There are two types of test; essay and objective test. Essay type test is an item format that requires the student to structure a rather short or long written response up to several paragraphs. On the contrary, objective test having clear and unambiguous scoring criteria and that can be objectively scored (William and Stephan). In this research the essay type test used by the researcher in collecting data, especially in gaining the students' listening score. The essay test is used by the researcher because the form of test expected to have short answer.

2) **Listening Test**

Listening test is a test purposed to diagnose the strengths and weakness in students' listening comprehension (Mewald, pg. 1). In this research, there are two kinds of test used by the researcher; pre-test and post-test. The pre-test and post-test administered in the different time

for the similar sample of study. Both of the tests have the similar topics; it is about biography text but different title of monologue. In the pre-test, the researcher takes a monologue entitled "Biography: Ki Hadjar Dewantara" and takes "Biography: B.J Habibie" as the post-test. The pre-test and post-test have same type and quantity. The test consist of three section; section 1, 2 and 3. The first section has 10 fill in the blank questions. The second section has 5 short answer questions. And the last section has 5 true false questions. Thus, total of the question are 20 numbers.

Furthermore, the researcher uses this test to measure the students' comprehension in listening before and after they are taught by using dictogloss strategy. The pre-test was given to the student before the researcher applied the treatment. The treatment is about listening monologue using dictogloss technique. The researcher administered the pre-test to the students during 50 minutes on March 8, 2016. And then, on March 10, 2016 the researcher applied the first treatment. The second treatment was applied on March 15, 2016. Two days later on March 17, 2016 the researcher conducted the third treatment about dictogloss technique. Finally, on March 22, 2016 the researcher was administered the pos-test to know how far the students' comprehension in listening monologue of biography using dictogloss technique.

E. Validity and Reliability Testing

1. Validity

A basic definition of validity is the degree to which a test measures what is supposed to measure. A better definition of validity is the degree to which evidence and theory support the interpretations of test scores entailed by the proposed uses of a test (AERA, APA & NCME, 1999, p. 9). Carole L. Another opinion explained by Kimberlin and Almut G. Winterstein (2008: 2278) that validity is often defined as the extent to which an instrument measures what it purports to measure. Validity refers to a logical process we follow in testing where what we measure is defined, measures are created, and evidence is sought and evaluated pertaining to the validity of interpreting a test score and its subsequent use (Haladyna, 2004: 3). Validity requires that instrument is reliable, but an instrument can be reliable without being valid. It means that the researcher have to conduct validity test for the instrument which being used in this research. Based on this research, the researcher would use construct validity, content validity and face validity to know the validity of the test.

a. Content validity

The validation of instrument in the form of test can be carried out by comparing between its content and the material which is studied before. A test have content validity if its contents of constitutes a representative sample of the language skills,

structures, etc being tasted (Hughes, 1989: 20). The test has content validity if it includes a suitable sample of the structure or content that is related to the purpose of the test. It means that the researcher needs a specification of the skills or structure being tested to ensure whether the instrument have content validity or not. The instrument of this research had a content validity because the researcher used design from syllabus of students in MAN Tulungagung 1 in academic year 2015- 2016.

The content validity in this research can be shown as bellow:

Table 3.2 The Blue print of pre-test and post-test

Material	Task form	Competence	Sub- competence	Indicator
Biography text (famous person)	Listening test	1. Understanding the social function and the structure of short and simple biography text about famous person based on the context.	1. Understanding the short and simple biography text about famous person. 2. Recognizing the social function of short and simple biography text about famous person. 3. Understanding the structure of short and simple biography text about famous person.	1. Students are able to identify the topic of short and simple biography text. 2. Students are able to mention the purpose of short and simple biography text. 3. Students are able to mention the structure of short and simple biography text.

Based on the table above, the test had content validity because of there is appropriateness between the test and the purpose and

indicator. In addition, the test had proper to the syllabus in eleventh grade of senior high school in the second semester.

b. Face validity

A test called to have face validity if it looks as if it measures what is supposed to measure (Hughes, 1989: 33). In this research, the test given to the students to measure listening comprehension especially used dictogloss strategy. A test that does not have face validity may rejected by the validator, advisor, and the teacher. Another explanation says that face validity refers to the extent to which examinees believe that the instrument is measure what it is expected to measure (Ary, 2010: 228). The example of face validity, a test which pretended to measure students' listening comprehension but which did not required the test- taker to read might be thought lack of face validity.

In this research, the researcher used face validity by consulting with the expert as a validator. After that the test has some viewpoint that makes it reliable in the face validity such as; the instructions in each section have to understandable for the students, the question must not be ambiguity to make students able to answer it, the time allocation is appropriate for students who have to finish the test punctually.

2. Reliability

Reliability refers to the consistency or stability of measurement. A reliable test is consistent and dependable. Reliability estimates are used to evaluate (1) the stability of measures administered at different times to the same individuals or using the same standard or (2) the equivalence of sets of items from the same test or of different observers scoring a behavior or event using the same instrument (Kimberlin and Almut G. Winterstein, 2008: 2278). Another explanation says by Ary (2002: 250) that realibility is concerned with the effect of such random errors of measurements on the consistency of scores. It means that if the students do the same test in different time the result will almost same, it called reliable. The more similar the result is the more reliable the test is.

In this research, the researcher gives the test to the students in other class in the same grade. The try out used to know the reliability of the post-test. Here, the chosen class for try out the post-test is XI IIB U (Excellent language) that consists of 28 students. The try out was done during 50 minutes on 1st March 2016 in MAN 1 Tulungagung. The reliability of the test can be calculated by using Kuder Richardson formula (KR-20) adapted from Arikunto (2009:100). As follows:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(\frac{s_t^2 - \sum p1\, q1}{s_t^2} \right)$$

Where:

r_{11} : Reliability test

N : The sum of items

s_t^2 : Standard deviation

p1 : The subject propportion that answer the item correctly

q1 : The subject propportion that answer the item wrongly

$\sum_{p1q1}$: The sum between p1 and q1

In this section contain with the result of try out would be discuss in this subchapter.

Table 3.4 The preparatory to compute the standard deviation

No	Nama	X_t	X_t^2
1	Sa	17	289
2	Ee	14	196
3	Mg	16	256
4	Rb	15	225
5	Na	17	289
6	Nc	18	324
7	Sav	19	361
8	Dn	18	324
9	Ef	19	361
10	Nr	17	289
11	Re	15	225
12	Gi	16	256
13	As	14	196
14	Au	13	169
15	Ra	12	144
16	Sd	13	169
17	Nas	14	196
18	Dr	14	196
19	Ft	14	196

20	Ran	15	225
21	Di	15	225
22	Ad	15	225
23	Ya	15	225
24	Nh	15	225
25	Sr	15	225
26	Yr	16	256
27	Uuk	17	289
28	Yd	17	289
		$\sum x_{t} = 435$	$\sum x_{t}^{2} = 6845$

To know $\sum x_{t}^{2}$ the formula below was used:

$$\sum x_{t}^{2} = \sum x_{t} - \left(\frac{\sum xt}{N} \right)^{2}$$

Where:

$\sum x_{t}^{2}$: the sum of correct answer

$$\sum x_{t}^{2} = \sum x_{t} - \left(\frac{\sum xt}{N} \right)^{2}$$

$$= 6845 - \left(\frac{435}{28} \right)^{2}$$

$$= 6845 - 241.35$$

$$= 6603.65$$

Therefore, the standard deviation is

$$\sqrt{s_{t}^{2}} = \sqrt{\frac{\sum xt}{N}}$$

$$= \sqrt{\frac{6603.65}{28}}$$

$$= \sqrt{235.84}$$

$$= 15.35$$

Table 3.5 The table to compute the reliability by using Kuder

Richardshon formula (KR- 20)

Item	Np	P_1	Nq	Q_1	P_1Q_1
1	28	0	0	0	0.0
2	27	0.9642857	1	0.0357143	0.0344388
3	1	0.0357143	27	0.9642857	0.0344388
4	28	0	0	0	0.0
5	23	0.8214286	5	0.1785714	0.1466837
6	13	0.4642857	15	0.5357143	0.2487245
7	22	0.7857143	6	0.2142857	0.1683673
8	2	0.0714286	26	0.9285714	0.0663266
9	10	0.3571429	18	0.6428571	0.2295918
10	6	0.2142857	22	0.7857143	0.1683673
11	25	0.8928571	3	0.1071429	0.0956633
12	28	0	0	0	0.0
13	28	0	0	0	0.0
14	28	0	0	0	0.0
15	26	0.9285714	2	0.0714286	0.0663266
16	28	0	0	0	0.0
17	28	0	0	0	0.0
18	28	0	0	0	0.0
19	28	0	0	0	0.0
20	28	0	0	0	0.0
					$\sum_{p1q1} = 1.2589287$

Therefore, the reliability is:

$$r_{11} = \left[\frac{n}{n-1}\right]\left(\frac{s_t^2 - \sum p1\,q1}{s_t^2}\right)$$

$$= \left[\frac{20}{20-1}\right]\left(\frac{15.35 - 1.2589287}{15.35}\right)$$

$$= \left[\frac{20}{19}\right]\left(\frac{14.091071}{15.35}\right)$$

$$= [\,1.0526316789\,]\,[\,0.9179851\,]$$

$$= 0.9663001970$$

Based on the result above, the reliability is 0.96. So, it can be said

that the test is reliable. Based on coefficient of correlation, the class of

reliability test can show in the criteria of coefficient correlation as follows (Sugiyono, 2014: 231).

Table 3.6. The Criteria of Coefficient Correlations for Reliability of Test

No.	Score of Coefficient Correlation	Criteria
1	0.00 – 0.199	Very Low
2	0.20 – 0.399	Low
3	0.40 – 0.599	Sufficent
4	0.60 - 0.799	High
5	0.80 – 1.000	Very High

Therefore, it can be inferred that the test have high scores of reliability because the scores between 0.60 and 0.799.

F. Normality Testing

Normality testing was used to find out whether the data was in normal distribution or not. Priyatno (2011, 77) told that the normality of data is important because the data can be considered to represent the population when it is in normal distribution. Because of it, the researcher wanted to test the normality of data by using SPSS 16.0 with *One Simple Kolmogorov-Smirnov*. The researcher done for the normality testing of pre-test and post-test scores.

The hypotheses of normality testing were:

a. H_0 : Data is in normal distribution

b. H_a : Data is not normal distribution

The hypotheses of normality testing show that the data is normal distribution if H_o is accepted and the data is not in normal distribution if H_a is accepted. The H_o is accepted when the significance value is higher than 0.05 and H_0 is rejected when the significance value is lower than 0.05. The researcher computed the normality of test by using SPSS 16.0 and the result for normality testing can be seen as follows.

Table 3.7 The result of pretest and posttest in normality testing

One-Sample Kolmogorov-Smirnov Test		
		VAR00001
N		28
Normal Parameters[a]	Mean	77.6786
	Std. Deviation	8.97343
Most Extreme Differences	Absolute	.189
	Positive	.189
	Negative	-.114
Kolmogorov-Smirnov Z		.999
Asymp. Sig. (2-tailed)		.271
a. Test distribution is Normal.		

On the basis of the table 3.7 above, it was seen that the significance value was 0.9. As explained previously, the hypotheses of normality testing told that the data is normal distribution if H_0 is accepted and the data is not in normal distribution if H_a is accepted. The H_0 is accepted when the significance value is higher than 0.05 and H_0 is rejected when the significance value is lower than 0.05. According the result above, H_0 was accepted and H_a was rejected. Moreover, the data was belonging to normal

distribution. In conclusion, the instruments were in this research were in normal distribution based on the calculation above.

F. Data Collection Method

Method of data collection provided the some applicable steps used during the researcher conduct the research. The process of collecting data started by giving pre-test to the students of XI IIK U. after that, the researcher give the treatment using dictogloss technique to improve students' listening comprehension, and the last step is giving post-test to them after being taught by the treatment. Then the result of pre-test and post-test compared by using SPSS 20 to analyze the affectivity of the strategy. The technique of data collection can be shown as below:

1. Pre- test

Pre-test is a test that given to the students in the first meeting in the class. The purpose of pre-test is to know how far their listening comprehension before the researcher given the treatment. It is the first method used by the researcher to gather the needed data. The pre-test is held by the researcher on 8th March 2016. The researcher gave time for the students during 50 minutes to finish the pre-test. The monologue that used by the researcher untitled "Biography: Ki Hadjar Dewantara" and the speaker is Mr. Vineet (a native speaker from USA).

2. Treatment

Treatment is the time for researcher applying the current strategy after done the pre-test. In this research, the researcher gave three treatments to the students using dictogloss technique. The first treatment was done by the researcher on 10th March 2016. The second was done 15th March 2016, and the third was done on 17th March 2016. Each treatment consists of four stages based on dictogloss technique, as follow:

1. *Preparation*

   a) Discussion

In this stage, the teacher guides the students to discuss about the certain topic. The teacher asks some of questions to the students dealing with the text that will be studying. The time allocation for this stage is 5 minutes.

   b) Vocabulary presentation

The teacher present some of vocabularies related to the text which will be taught. Then, the students write down and spell the vocabularies, next find out the meaning of the vocabulary. The students have 10 minutes to do this stage.

   c) Memorizing vocabulary

After the students look for the meaning of each vocabulary, the teacher asks students to memorize the vocabularies. It is purposed to the students' understandable on the vocabularies. The teacher gives time allocation for 5 minute.

2. *Dictation*

Teacher will read the text twice at natural speed. Students will take notes about the word, phrase, or sentence that belongs to important information from the text while dictation process. It is purposed to make clear and easy for the students in reconstructing the text. The students allow writing down the words in a piece of paper or on their English note book. The teacher gives 15 minutes for time allocation in this stage.

3. *Reconstruction*

In this stage, the students reconstruct the text on the basis of dictation. This is the most collaborative stage in which students work together to reconstruct the text with correct grammar and content, showing their information and discussing the best options. Students will be arranged in small groups (5-6 students each group). They will show their notes and reconstruct their own version of the passage. During this step, teacher will not provide them with any information. So, each group have own version taken from the original text based on their members' knowledge. The time allocation for this stage is 15 minutes.

4. *Analysis and correction*

   a) Analysis

     In this stage, each group represented by a student to comes forward in front of the class to analyze their work. The teacher shows up the original text on the white board. Each group read aloud their work by sentences and other students analyze where the incorrect word is. The time allocation for this stage is 5 minutes.

   b) Correction

     Continue the previous stage, after the students recognize the incorrect word on their work, the teacher give the correct one to evaluate students work. The students will compare their own version with the original one to be informed about their mistakes and be able to correct them. Then, the teacher invites students to spell and memorizing the meaning of those correct words. The students have 5 minutes to do this stage.

3. Post- test

In the last meeting, the researcher gave the post-test to measure the students' listening comprehension after taught by using dictogloss as interactive method. The post-test is held by the researcher on 22nd March 201. The researcher used a monologue about biography text entitled "Biography: B.J Habibie" with 20 questions in 3 listening sections. In this final test, the researcher gave 50 minutes as the time allocation. The

monologue played three times; first playing for section 1, second playing for section 2, and third playing for section 3. The result of post-test will be analyzed and compared by the result of pre-test using SPSS Statistics.

G. Data analysis

After the researcher got the data from the field, the data will be analyzed by using statistical procedure. The statistical procedure used to know the significant different on the students' listening comprehension before and after taught by using dictogloss technique. In this research, the researcher used the application of IBM SPSS Statistics 16.0 to analyze the data. The researcher used paired sample t- test to know the significance different between students' score of pre-test and post-test.

The paired *t*-test, allows a comparison of the same group of candidates' scores on two different test forms simultaneously (Weir, 2005: 241). The paired sample t-test used in this research because of any reasons. First, it can used to analyze the comparison between two means scores on different tests to which the same candidates would produce similar results if one task was used as an alternative to another. Second, the result of paired *t*-tests will tell whether there is a significant difference between the two means or not. The last, paired *t*-tests used by the researcher because the subject of this study only one class with two kinds of scores; pre-test and post-test.