CHAPTER III

RESEARCH METHOD

In this chapter the researcher describes the research method. It consists of research design, population and sample, research variable, research instrument, validity and reliability testing, normality and homogeneity testing, data collection method, data analysis and hypothesis testing.

A. Research Design

This research was conducted using quantitative research. Quantitative research uses objective measurement and statistical analysis of numeric data to understand and explain phenomena. Experimental in quantitative was often used to conduct research by the researcher. According to Cresswell (2009: 3) experimental research is a powerful research method to establish cause-and-effect relationship. The cause variable was a condition or event that exists or occurs prior to the effect. The effect variable was a condition or event sub-sequent to the casual condition. The course variable produces the effect variable.

According to Arikunto (2006: 85), there were three kinds of Pre-experimental designs, those were: one shot case study, pretest and posttest group and static group comparison. From three kinds of them, the researcher chooses to use Pre-Experimental with One-Group Pretest-Posttest design.

Perry (2005) defines that Pre-Experimental research design was overall structural designs include the variables, techniques, treatment, and others. The

treatment was conducted by using Postcards as media in teaching speaking descriptive. In this case, the researcher classified as Pre-Experimental design because it was little or no control of extraneous variables. It means that using one class as single group who get the treatment and the group get pretest and posttest to know the result of treatment. Furthermore, to make sure why the researcher used Pre-Experimental research design because the research does not appear to have random test to determine the sample of the research. The essential requirement of this design was stated by Kirk (1995: 26), Pre-Experimental design was that the variable on which participants matched was correlated with the dependent variable. In this research, the researcher does not have a necessary to randomize the sample.

This research was focused on the effectiveness of using panoramic postcards towards students' speaking skill. The independent variable was panoramic postcards and the dependent variable was students' speaking skill. In this case, the independent variable influences the dependent variable. Besides that, to know the result whether the dependent was influenced well positively, the researcher used pretest and posttest to measure that. The design of the research can be summarized as follows:

Table 3.1: The Illustration of Research Design

Pretest	Treatment	Posttest
Y1 (DV)	**X (IV)**	**Y2 (DV)**

X : Panoramic postcards (Independent Variable)

Y1 : Students' speaking skill before taught by using panoramic postcards (Dependent Variable)

Y2 : Students' speaking skill after taught by using panoramic postcards (Dependent Variable)

B. Subject of the Research

1. Population

Population is entire subjects where data is collected. Harlon & Larget (2011) state population is all the individuals or units of interest; typically, there is not available data for almost all individuals in a population.

In this research, population of data is all of the tenth grade students of SMAN 1 Tulungagung in period 2017/2018 which consists of 231 students. Those are divided into seven classrooms. Class X-1, X-2, X-3, X-4, X-5, X-6, X-7. It can be seen in the table 3.2 below:

Table 3.2 Population of Research

NO	Class	Gender	
		Male	Female
1	X-1	11 students	19 students
2	X-2	13 students	20 students
3	X-3	13 students	21 students
4	X-4	12 students	22 students
5	X-5	13 students	19 students
6	X-6	12 students	22 students
7	X-7	13 students	21 students
Total students		231 students	

2. Sample

Polit (2001: 234) defines a sample as a proportion of population. A carefully selected sample can provide data representative of the population from which it is drawn. In addition, Burns & Grove (2003: 31) state sampling as a process of selecting a group of people, events or behaviour with which to conduct a study. Purposive sampling was used in this study. According to Perry (2005: 57) porposive sampling strategy is used to indicate that the sample is chosen to answer the research question as relevant as possible. The researcher considers some suggestions from certain people who know well which sample is appropriate to be chosen by giving qualification. That is why, one of the good criterion is X-2.

Based on English teacher who handles X-2 recommended X-2 to be sample of population. That is why that class is suitable as subject of the research.

Table 3.3 Sample of Research

Sample of X-2		Total Participants
Male	Female	
13 students	20 students	33 participants

C. Research Instrument

Research instrument refers to the instrument or tool to collect data. Instrument which used by the researcher was speaking test. Speaking test that the researcher gives to students using conversation between the researcher and students. It can be developed by call the students one by one in front of a class and ask them to speak their answer based on questions in the test. Test used to

measure the students' skill in speaking descriptive text before and after being taught by using Panoramic Postcards. Students were given two kinds of tests. The first test was pre-test which distributed on April 10th, 2018 and second test was post-test which distributed on April 24th, 2018. Both of the tests were descriptive text as the level of students in their level by considering with core competence and also basic competence. In pre-test was description about panorama Raja Ampat Island and in post-test was description about panorama Mount Rinjani.

To know the result of the tests, the researcher used scoring rubric. According to Brown (2003) also International Language Foundation (ILF), the aspects of scoring are comprehension, vocabulary, pronounciation, fluency, and grammar. Those aspects have been matched with speaking descriptive text. The scoring rubric can be seen in the table below.

Table 3.4 Speaking Scoring Rubric

No	Elements of Speaking	Weight	Score	Criteria
1.	Comprehension	30%	1-6	Student didn't understand or ignored most questions and statements. Student may have been using notes.
			7-12	Student failed to answer some questions appropriate or failed to acknowledge some statements and incorporate these into the spoken.
			13-18	Student more understand the acknowledged and started spoken bravely.
			19-24	Student responded to most questions, acknowledged most statements, and incorporated many of these into the spoken.

			25-30	Student responded to questions with appropriate answers, acknowledged all statements, and incorporated them into the spoken.
2.	Vocabulary	25%	1-5	Communication was severely hampered due to lack of vocabulary.
			6-10	Some difficulties arose due to limited vocabulary and/or bad diction.
			11-15	Able to speak the language with sufficient vocabulary to participate effectively.
			16-20	A few minor difficulties arose from not using appropriate vocabulary.
			21-25	Vocabulary studied in class was used to express ideas eloquently.
3.	Pronounciation	20%	1-4	Pronounciation, inflection, and/or expression confused communication. Student may have been very difficult to hear.
			5-8	Some communication problems arose due to unclear pronounciation and/or lack of inflection and/or expression. Student may have been difficult to hear.
			9-12	Errors in pronounciation never interfere with understanding and rarely disturb the native speaker.
			13-16	No serious problems arose, but better pronounciation, inflection, and/or non-verbal communication could have made communication more efficient.
			17-20	Pronounciation was clear and inflection and expressions were used to enhance communication.
4.	Fluency	15%	1-3	Much effort was required to maintain the spoken. There may have been many long paused.
			4-6	Some effort was required to maintain the spoken. There may have been a few long paused.

			7-9	Speech is relatively smooth, some hesitation and unevenness caused by rephrasing and searching for word.
			10-12	Some minor difficulties maintaining the spoken were evident.
			13-15	Student acted as a facilitator, helping the spoken flow and develop.
5.	Grammar	10%	1-2	Grammatical errors severely hampered communication.
			3-4	Grammatical errors le to many minor difficulties or one major breakdown in communication.
			5-6	Control of grammar is good.
			7-8	A few minor difficulties arose from not using the grammar studied.
			9-10	Grammar used to communicate effectively.

The reason why the researcher used those scoring rubric was knowing the students' speaking skill as far as some aspects.

D. Validity and Reliability Testing

According to Prastiyo (2017), validity and reliability of instrument are integral parts in conducting a study since the instrument which will be used must be valid and reliable before using it to collect data. The research ensured the instrument was valid and reliable by doing validity and reliability testing.

1. Validity

In language texting, Kimberlin & Winterstein (2008) defined as the extent to which an instrument measures what it purports to measure. Validity requires that an instrument is reliable, but an instrument can be reliable without being valid. Before conducting the research, the researcher had three kinds of validity as follows:

a. Content Validity

According to University of Guelph (2005), content validity is a less subjective form of validity measure than face validity, although it does extend from face validity which relies on an assessment of whether the proposed measure and already established to be valid as concerns the variable of interest.

b. Construct Validity

Construct validity is validity evaluates whether your proposed measure correlates wit all concepts related to theory under investigation. Construct validity refers to composing of instrument. The instrument is constructed by concerning the aspects of speaking descriptive text.

The composing of theory refers to definition, generic structure, and language feature of speaking descriptive text. In this case, the researcher will synthesing some experts give point of view about descriptive text. First is definition which describe about phenomenon; person, place, thing, and etc. Second is generic structure which consists of Identification; the writer identifies generally about phenomenon, Description; the writer describes parts, qualities, and characteristics of phenomenon. Third is language feature which consist of focusing on spesific participants also use simple present tense.

The aspects above can be consulted to eligible experts to make sure the instrument is valid. The researcher consulting to English teacher who handles X-2 class and English lecturer of IAIN Tulungagung who handles methodology research class.

A. Face Validity

Face Validity is a subjective form of validity measure which associates the variable of interest with the proposed study variable, by relying heavily on logic and common sense.

In this content, there are some aspects to be considered from this test to make a good test based on the validity.

1) The instruction must be clear for the students.
2) In this test, the students can speak with the familiar vocabulary that students can reach.
3) Time allocation must be precisely.

2. Reliability

According to University of Guelph (2005), reliability refers to the consistency of a measure's result for each application of the measure with different raters. Since the type of the test is belong to authentic testing, the researcher definite that the test reliable by doing inter-rater reliability. According to Prastiyo (2017) as cited in Sarosdy et al. (2006: 135) inter-rater reliability refers to consistency of scores given by two or more scores to the same set of oral or written texts. The two scores were the researcher and an English teacher.

The reliability of the instrument can be seen from the result of conducting try out test in different class. The researcher chose X-4 as try out class and took ten students as sample. To find out the reliability of the score obtained either from pre-test and post-test, the researcher will calculate two scores of the students by correlated the scores between them. The formula to find the correlation coefficient is *Pearson Product-Moment*. According to Prastiyo (2017) as cited in SPSS Inc (2007: 187) correlation measure how variables or rank orders are related. Correlation coefficient range in value from -1 (a perfect negative relationship) and +1 (a perfect positive relationship). A value of 0 indicates no linear relationship.

The result of try out score from rater 1 and 2 can be seen in the table below.

Table 3.5 Reliability Statistic

Pre-test Try Out		Post-test Try Out	
Rater 1	Rater 2	Rater 1	Rater 2
66	68	70	74
60	59	63	65
53	50	54	54
70	73	73	75
75	77	76	77
69	71	70	73
60	63	63	66
60	61	62	64
75	77	76	79
63	65	67	69

After the score of try out pre-test and post-test were calculated using IBM SPSS 16.0, the researcher got the result as follows:

Table 3.6 Reliability Pretest

Correlations

		Rate_1	Rate_2
Rate_1	Pearson Correlation	1	.986**
	Sig. (2-tailed)		.000
	N	10	10
Rate_2	Pearson Correlation	.986**	1
	Sig. (2-tailed)	.000	
	N	10	10

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

Table 3.7 Reliability Posttest

Correlations

		Rate_1	Rate_2
Rate_1	Pearson Correlation	1	.991**
	Sig. (2-tailed)		.000
	N	10	10
Rate_2	Pearson Correlation	.991**	1
	Sig. (2-tailed)	.000	
	N	10	10

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

From the tables above, it can be seen that the result of correlation coefficient in tryout pre-test is 0.986 or close with 1 means there is perfect positive relationship between two variables. Then, the result of tryout post-test is 0.991 or close with 1 means there is also perfect positive relationship between two variables. Those mean that the instrument is reliable to be tested.

E. Normality and Homogeneity Testing

Normality and homogeneity testing are calculated and analyzed to determine either parametric or non-parametric testing. To calculate the data computation were normal distribution and homogenous, the researcher conducted the result that can be seen in below.

1. Normality Testing

Normality tests are used to determine whether a data set is well modeled by a normal distribution or not. Normality test is intended to show that sample data come from a normally distributed population to know the normality, the researcher used *One-Sample Komogorov-Smirnove test* in IBM SPSS 16.0 by significant level (0.050) rules as follows; the hypotheses for testing normality are:

a. H_0 = Data is in normal distribution
b. H_a = Data is not in normal distribution

There is also certainly in taking decision of normality testing, as follow:

a. If the value of significance > 0.050, H_0 is accepted. It means that the data distribution is normal.
b. If the value of significance < 0.050, H_0 is rejected. It means that the data distribution is not normal.

The result of normality testing can be seen on table 3.8 below.

Table 3.8 Normality Testing

One-Sample Kolmogorov-Smirnov Test

		Pretest	Posttest
N		33	33
Normal Parameters[a]	Mean	61.97	69.82
	Std. Deviation	2.767	1.811
Most Extreme Differences	Absolute	.132	.189
	Positive	.132	.189
	Negative	-.075	-.098
Kolmogorov-Smirnov Z		.758	1.088
Asymp. Sig. (2-tailed)		.613	.187

a. Test distribution is Normal.

Based on the table above was known that significant value of pre-test is 0.613, it is bigger than 0.05 (>0.05). It means the distribution data of pre-test is normal. The significance value of post-test is 0.187, it is bigger than 0.05 (>0.05), it means the distribution of post-test is normal. So, it can be interpreted that both of the data (pre-test and post-test) were in normal distribution.

2. Homogeneity Testing

Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from population which is too different each other. It is also conducted to know whether the data has homogeneous varience or not. To know the homogeneity, the researcher used *Levene* statistic with SPSS 16.0.

Table 3.9 Homogeneity Testing (Pretest)

Test of Homogeneity of Variances

Pretest

Levene Statistic	df1	df2	Sig.
.835	6	26	.554

The data can be said has same variance or homogeneity if the value is more than 0.05. Based on the table above the significant value is 0.554. It means that sig/p value 0.554 is higher than 0.05 (>0.05). Automatically, it can be said that the data has same variance or can be said homogenous.

Table 3.10 Homogeneity Testing (Posttest)

Test of Homogeneity of Variances

Posttest

Levene Statistic	df1	df2	Sig.
1.061	7	21	.421

The data can be said has same variance or homogeneity if the value is more than 0.05. Based on the table above the significant value is 0.421. It means that sig/p value 0.421 is higher than 0.05 (>0.05). Automatically, it can be said that the data has same variance or can be said homogenous.

F. Data Collecting Method

The data collecting method serves the way how the researcher get the data which is needed. To measure the effectiveness of using postcards in descriptive text, the researcher uses instruments. The instruments are pre-test and post-test. It can be explained clearly below:

1. Pre-test

Pre-test is given to the students to know their skill in speaking Descriptive text. Pre-test refers to a measure or test given to the subject prior to the experimental treatment. Pre-test had been done on April 10th, 2018. The number of students who got pre-test was completely 33 students. After finishing the students' work, the researcher used scoring rubric to computate the score of pre-test.

2. Post-test

Post-test is given to the students to investigate and measure the development their skill in speaking Descriptive text. Post-test was a measure on some attribute or characteristic that was assessed for participant in an experiment after treatment. Post-test had been done on April 24th, 2018. The number of students who got post-test was completely 33 students. After finishing the students' work, the researcher used scoring rubric to computate the score of post-test.

G. Data Analysis

Data analysis is a technique to analyse data to know the result of a research. In analyzing data, the researcher used quantitative data by using statistical program SPSS 16.0. The quantitative data analysis was used to know the significant differences on the students' speaking skill between before and after being taught by using Panoramic Postcards.

To investigate whether postcards is effective towards students' skill in speaking descriptive text, the researcher analysed the result of pre-test and

post-test the students by using *Paired Sample Test* in IBM SPSS 16.0. The researcher used t-test to know the significant value was higher or smaller than 0.05. The technique of data analysis used by the researcher belonged to quantitative data analysis.