

CHAPTER III

RESEARCH METHODOLOGY

This chapter explains the research methodology, consist of: research method, research design, population, sample, instruments and data collecting techniques, data analysis procedure, then validity and realibility.

A. Research Method

Kothari (2004) was defined that research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. Also in his book he state that, method is a generate techniques in conduct a research. Research method devided into three methods. First is quantitative method, second is qualitative method and the third is mix method research. In this research, the researcher used quantitative research method.

According to Creswell (2014) quantitative researchis an interrelated set of constructs (or variables) formed into propositions, or hypotheses, that specify the relationship among variables (typically in terms of magnitude or direction). In line with, Marczyk et al (2005) quantitative research contains studies that make use of statistical examines to find out the findings also the key features comprise fomal and systematic capacity and the usage of statistic. It can be concluded that, quantitative research is a research method that used tofind out the the result usage of statistical analysis.

B. Research Design

Research design is the way how the researcher conduct the research. According to Kothari (2004) research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In this research the researcher used quasi experimental as a research design. According to Creswell (2014), quasi experiment is a form of experimental research in which individuals are not randomly assigned to groups. The experimental group A and control group B are selected without random assignment. Both groups take pretest and posttest, and only the experimental group received the treatment.

C. Population and Sample

1. Population

Population refers to all of potential participants, its people which are considered as a whole subject in the research. According to Dowdy et al (2004) cited in Astuti (2018) population is the physical group of individuals which have one of characteristics and different from other group. In line with, Newby (2014) states that population is a larger cluster to which one to expect the implement of the result. The researcher considered the population of this research are all the first grade students of SMK Karya Perjuangan, consist of 126 students. Devided into 66 female students, and 60 male students in the academic year of 2018/ 2019.

2. Sample

Sample is a small subgroup chosen from the larger population. According to Newby (2014) the sample is a small amount of particular members. The sample in this research are 60 students of both experimental and control class that each class consist of 30 students. In this research, the researcher used random sampling as sampling design. According to Kothari (2004) Random sampling is all items of the population has same possibility of addition in the sample.

D. Instruments and Data Collection Techniques

According to Zedeck (2014) cited in Kaswan, Sadikin dan Suprijadi (2019) instrumen is any tool, device, or other means by which researchers assess or gather data about study participants. The Instruments of this research are test, observation checklist, and interview. The researcher used a photo-video camera to document the teaching and learning process and to assess the speaking pretest and posttest.

1. Test

In this research the researcher used test namely oral test. The test of this research consists of pre-test and post-test.

a. Pretest

The pre-test given to students before the treatment in a research. According to Creswell (2012) A pretest provides a measure on some attribute or characteristic that the researcher assess for participants in a research *before* they receive a treatment. The

researcher gave pretest to the students in order to know and make sure that they have the same level of speaking.

At the first meeting the researcher gave pretest. The aim of the test is to know how far the students' speaking skill before treatment. The pre-test was given in the form of factual recount text about the tsunami in the Sunda Strait, then students were given 5 questions related with the text and students were given 2 minutes to answer questions orally. Previously, the researcher gave a question about a factual recount text on the projector. The Sample pretest, such as:

Table 3.1
Example of Pretest

Tsunami in the Sunda Strait	Structure of the text
On December 22, 2018, a tsunami caused by the eruption of Anak Krakatau in the Sunda strait hit the coastal areas of Banten and Lampung, Indonesia.	Orientation
First, At 21.03 WIB. Anak Krakatau erupted and damaged the nearest seismographic equipalent, even though another station detected continuous vibrations. At 21.27 WIB, the Meteorology, Climatology and Geophysics Agency (BMKG) detected tsunami on the west coast of Banten, even though there were no tectonic events. Based on the fact, there was an avalance of 64 hectares of Mount Krakatau which triggered a shock that led to the tsunami. Then, previously BMKG had issued a high-wave warning for the waters around the Sunda strait. Recorded tsunami wave height ranged 90 centimeters in Serang and 30 centimeters in Lampung with a maximum height of 2 meters. The wave was also recorded in the Twitter BMKG, before it was finnaly deleted at 01.01 WIB. But in the end, BMKG verified that the tsunami did occur at around 21.30 WIB, along with high wave conditions due to the full moon in the Sunda Strait on December 20-25. At least 426 peoples were killed and 7.202 peoples injured and 23 peoples missing due to this incident.	Events
In connection with this, the tsunami that hit the southern coast od Sumatra and the western tip of Java Island is rare, because this phenomenon occurred without going through an earthquake first.	Reorientation
Answer the question orally ! 1. What is the main topics of the text? 2. On what date did the incident occur? 3. Retell the chronology of the tsunami incident in the Sunda Strait! 4. How many victims were there? 5. What moral message can be taken from the text?	

b. Post test

The post test given to students after the researcher gave treatments. According to Creswell (2012) A post test is a measure on some attribute or characteristic that is assessed for participants in a research *after* a treatment. the researcher had been given post test to the students after they are got the treatment. The researcher used derivative of Communicative Approach namely Snowball Throwing Technique and Scientific Approach for teaching speaking recount text in both classes experiment and control class. The post test given to know the influence of both approaches toward students' speaking skill.

The post test was given at the end of the meeting with the same text at the time of the pretest. However, there are several questions that have been changed. Then students are given 2 minutes to answer questions orally.

2. Observation Checklist

The function of observation checklist is to find out the situation during the teaching and learning process in the classroom. According to Tavakoli (2012) Observation checklist is a form which is prepared prior to information collection that act as flexible guidelines for data collection, listing topics of interest and providing space to record notes about new themes that emerge during observation. The example of observation checklist used in this research as follow:

Table 3.2
Example of Observation Checklist

Observation Checklist on Student's Activities No : Observation Checklist 1 Meeting : 1 Day/Date : Please give check (✓) each item in the column that most clearly represents your observation and write additional comments in the provided column.			
Activities	Implementation		Comments
	Yes	No	
I. Opening			
1. The teacher greets the students.			
2. The teacher checks the students' condition and the attendance.			
3. The lesson reviewed material and looked ahead to new material.			
4. The prepared goals/objectives are apparent.			
5. The teacher is well prepared and well-organized in class.			
II. Main Activities			
1. The students are ready to learn the materials.			
2. The teacher introduces a model of a spoken recount text.			
3. The teacher explains the model of the text.			
4. The students with the teachers' guidance investigate the structural pattern of the model.			
5. The students with the teachers' guidance investigate the language features of the model.			
6. The teacher gives chances to the students to ask questions.			
7. The students deliver questions to the teacher.			
8. The teacher give some speaking tasks to the students.			
9. The students are motivated in doing tasks.			
10. The teacher monitors and checks students' works.			
11. The students use dictionary to help them in finding vocabulary.			
III. Closing			
1. Teacher and students reflect to today's lesson.			
2. Teacher gives feedback to students.			
3. Teacher and students summarize materials learned.			
4. Teacher gives further guidance to students.			

5. Teacher says goodbye to students.			
IV. Class Situation			
1. The students have enthusiasm or motivation during the teaching process.			
2. The students actively take parts in each class activity.			
3. The time allocation is appropriate.			
4. The media used by the teacher are sufficient in the teaching and learning process.			
5. The teacher's instructions are clear.			

3. Interview

Interview help researcher to collect data and information from interviewers. In this research, the researcher chooses 9 representative students from both of control and experimental class. Three of them are students with high score, 3 with middle score, and 3 students with low score. Interview conducted after observation. The researcher used audio-recorder to recorded during interview. The example of interview as follow:

Table 3.3
Example of interview guidelines

Student's interview guidelines
1. Bagaimana pendapat anda mengenai pelajaran <i>speaking</i> ? 2. Pernahkah anda mendapatkan pelajaran mengenai <i>recount text</i> sebelumnya ? 3. Bagaimana menurut anda mengenai metode <i>Snowball Throwing / Scientific</i> dalam pembelajaran <i>speaking</i>? 4. Manakah yang lebih anda sukai, belajar <i>speaking</i> menggunakan metode <i>Snowball Throwing / Scientific</i> atau tidak menggunakan metode apapun? 5. Apakah anda tertarik dan senang saat mendapatkan materi tentang <i>recount text</i>? 6. Menurut anda, metode <i>Snowball Throwing / Scientific</i> dalam pembelajaran <i>speaking</i> itu mudah dipahami atau tidak ? 7. Menurut anda, apakah metode <i>Snowball Throwing / Scientific</i> tersebut dapat meningkatkan kemampuan belajar siswa khususnya dalam <i>speaking</i> ? 8. Setelah mendapatkan pelajaran <i>speaking</i> dengan metode <i>Snowball Throwing / Scientific</i>, apakah yang anda rasakan ? belajar bahasa Inggris di kelas menjadi lebih menyenangkan atau tidak ? 9. Selama mendapatkan pelajaran <i>speaking</i> dengan metode <i>Snowball Throwing / Scientific</i>, apakah ada kesulitan yang kamu hadapi ? 10. Kesan apa yang kamu rasakan mengenai metode <i>Snowball Throwing / Scientific</i> dalam pembelajaran <i>speaking</i> ?

E. Data Analysis Procedure

After collecting all the data needed, the researcher used mathematical statistics procedures to process and analyze the data. The researcher used IBM SPSS 22.0 version for windows. The steps of analyzing the data are as follows:

1. Normality Test

We use Normality Test to know whether the data from control and experiment class are normally distributed or not. According to Arikunto (2014) in statistics parametrik normal data distribution is a must and is an absolute requirement that must be fulfilled. If the *Asymp sig* more than the level of significance (0,05), the data were normally distributed, while if the data is not normally distributed the researcher can use **Wilcoxon** or **Mann Whitney** statistic test. And if the data is normally distributed but, data isn't homogen the researcher can use **T'** (**T accent**) statistic test.

Data normality test can be done by several statistical tests, such as; Shapiro-Wilk test, Kolmogorov-Smirnov test, Liliefors test, Skweness dan Kurtosis test. In this research, the data in normality test the researcher used shapiro wilk test because the sample less than 50 (<50).

Based on Decision Making in the Shapiro-Wilk Normality Test :

- a. If a value sig > 0,05 (a value sig more than 0,05) that means the data is normally distributed

- b. If a value $\text{sig} < 0,05$ (a value sig less than 0,05) that means the data is not normally distributed.

2. Homogeneity of Variance

According to Arikunto (2014) Homogeneity of Variance is conducted to see if there are differences in variance (data deviation from average) between groups with one another group.

3. Independent T-Test

According to Tavakoli (2012) T-test is the parametric test which is used to discover whether there are statistically significant differences between the means of two groups (e.g., men and women).

F. Validity and Reliability

Validity and Reliability are the most important considerations in developing and evaluating research instruments.

1. Validity

In general, validity refers to the suitability, meaningfulness, accuracy and usefulness of conclusions made by researchers. In quantitative research, validity is enhanced by careful sampling, accuracy of instrumentation, and statistical treatment of data.

The SPSS output for the Validity test is quite a lot, but what needs to be interpreted in the Validity test lies in the **Item-Total Statistics** table. The validity of each item can be seen in the value of **Corrected Item-Total Correlation** for each item. Interpretation: If the values in **Corrected Item-Total Correlation**

are equal to or greater than the validity index (0.3), then the items are valid.

The result of both pretest validity score are:

a. Validity Score of Experiment Class

Table 3.4
Validity Score of Contol Class
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
G	10,2000	,907	,424	,696
F	10,3167	,836	,544	,646
V	10,0500	,920	,494	,669
P	10,1500	,916	,459	,682
C	10,2167	,891	,480	,673

Based on the data above, the pretest score of Experiment class is valid because the table **Corrected Item-Total Correlation** are greater then the validity index (0,3). The result are: Grammar (0,424), Fluency (0,544), Vocabulary (0,494), Pronunciation (0,459), Comprehensin (0,480).

b. Validity Score of Contol Class

Table 3.5
Validity Score of Contol Class
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
G	10,6333	1,982	,423	,664
F	10,7500	1,496	,658	,547
V	10,3333	2,351	,502	,669
P	10,7667	1,961	,412	,669
C	10,5833	1,864	,405	,678

Based on the data above, the pretest score of Control class is valid because the table **Corrected Item-Total Correlation** are greater than the validity index (0,3). The result are: Grammar (0,423), Fluency (0,658), Vocabulary (0,502), Pronunciation (0,412), Comprehension (0,405).

2. Reliability

According to Hatch and Farhady (1982) cited in Kaswan et al (2019) “*Reliabilitas bisa didefinisikan sebagai tingkat sebuah tes atau instrumen pengukuran menghasilkan hasil yang konsisten ketika dilaksanakan dibawah kondisi yang sama/serupa.*”

The way used to estimate reliability in this research is to use Interrater Reliability. To gain trust in valuation, we need interrater reliability. Because the student's final score is a combination or average rating, reliability depends on the number of assessors (Hatch and Lazaraton, 1991; Hatch and Farhady, 1982; Howitt and Cramer, 2011) cited in Kaswan et al (2019).

There were two interrater who assessed the speaking performance of students (the researcher and English teacher). To find out the score are reliable or not the researcher analyze using IBM SPSS. The data reliable if the value of the **Interclass correlation** of **Average Measures** more than (0,8) and **significant** of the data of **Average Measures** less than (0,05). The result of reliability are:

a. Reliability Score of Experiment Class

Table 3.6
Reliability Score of Experiment Class

Intraclass Correlation Coefficient							
	Intraclass Correlation r^b	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	,469 ^a	,136	,706	2,764	29	29	,004
Average Measures	,638 ^c	,240	,828	2,764	29	29	,004

Based on the data above, the pretest score of experiment class is not reliable because the table **significant** of the data **Average Measures** is (0,004) it is less than (0,05) and **Interclass correlation** of **Average Measures** is (0,638) it is less than (0,8) it's mean assessments of Interrater is low.

b. Reliability Score of Control Class

Table 3.7
Reliability Score of Control Class

Intraclass Correlation Coefficient							
	Intraclass Correlation r^b	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	,900 ^a	,800	,951	18,922	29	29	,000
Average Measures	,947 ^c	,889	,975	18,922	29	29	,000

Based on the data above, the pretest score of control class is reliable because the table **significant** of the data **Average Measures** is (0,000) it is less than (0,05) and **Interclass**

correlation of **Average Measures** is (0,947) it is more than (0,8) it's mean assessments of Interrater is high.

