

CHAPTER III RESEARCH METHODOLOGY

A. Research Method

Based on the data sources used, the research is divided into two types, namely *library research* and *field research*. Library research is research in which the formulation of the problem can only be answered with library data or literature. Meanwhile, field research is research in which the main data source is in the field of research in which the formulation of the problem can be answered with the data in the field.¹

From the two types above, the type of research used in this research is field research. Field research (*Field Research*), namely research to study intensively the background of the current situation and environmental interactions of a social unit, individual, group, institution, or community. Field research with a quantitative approach was chosen in this study to know the conditions in the field about the effect of variable X (*Snowball Throwing Method*) on variable Y (*Student's Vocabulary Mastery*).

Researcher used a quasi-experimental design to make it easier to get the control class. In the quasi-experimental design, there are two forms namely, time series design and nonequivalent control group design. However, the researcher used nonequivalent control group designs to determine the experimental class and control class without choosing randomly.²

B. Research Population and Samples

The population is all objects or subjects in a unit based on the quality and characteristics that had been determined and would be studied by researcher to produce a conclusion.³ The population is the totality of all objects or individuals that had certain, clear, and complete characteristics to be studied.⁴ In this study, all students of class VIII MTs Mazro'atul Huda Wonorenggo Demak totaled 59 students became consisted of grades VIII A, VIII B consisting of 20 students, and VIII C consisting of 19 students in the research

¹ Supa'at et al, *Pedoman Penyelesaian Tugas Akhir Program Sarjana (Skripsi)* (Kudus: Epsilon, 2019). 31

² Sugiyono, *Metode Penelitian Pendidikan Kuantitatif, Kualitatif, dan R&D* (Bandung: Alfabeta, 2010). 79

³ Sugiyono. 117

⁴ Mahmud, *Metode Penelitian Pendidikan* (Bandung: CV Pustaka Setia, 2011). 154

population. A sample is several objects or subjects that are part of a population and had characteristics that are following the research population. The sampling can represent the population, it is necessary to have a sampling technique. A sampling technique is a sampling technique used to determine the sample to be used in research.⁵

In determining the sample in this study, it was carried out using a random sampling technique, namely taking it randomly or indiscriminately. This technique has the highest probability of establishing a representative sample. In this technique all individuals in the population either individually or together are given the same opportunity to be selected as members of the sample. The methods used in random sampling: (1) lottery method, (2) ordinal method, and (3) randomization from the random number table.⁶

In taking the research sample, it was guided by Suharsimi Arikunto who stated that if the subjects were less than 100, it was better to take all of them, so that the research was a population study. Furthermore, if the subject is large, more than 100 people can use a sample. According to him, samples were taken between 10% -15% or even more than 25% of the total population.⁷

The sample is "part of the population that is the object of research (literally means sample)". In determining/taking samples from the population, there are rules, namely the sample is representative of the population.⁸ Sampling occurs when the population is large and it is impossible for the researcher to study everything in that population.⁹The sample in this study involved two classes, namely class VIII A which was the experimental class which was given treatment and class VIII B which was the control class which was not given treatment. The total sample is 40 students.

⁵ Sugiyono, *Metode Penelitian Pendidikan Kuantitatif, Kualitatif, dan R&D*, 2010. 118

⁶ Salim, (2018), *Metodologi Penelitian Kuantitatif*, Bandung: Ciptapustaka Media, 115.

⁷ Suharsimi Arikunto, (2006), *Prosedur Penelitian (Pendekatan Kuantitatif, Kualitatif, dan R&D)*.118

⁸ Indra Jaya, dkk, (2013), *Statistik pendidikan Untuk Pendidikan*, Bandung: Cita Pustaka Media Perintis, 20-47.

⁹ Indra jaya, (2018), *Penerapan Statistik untuk Pendidikan*, Medan: Perdana Publishing,32.

C. Research Participants

This research would be carried out at MTs Mazro'atul Huda Wonorengo Demak. This research would be held in the eight grade of the even semester of the 2022/2023 academic year.

D. Instruments and Data Collection Technique

In collecting the data, the researcher used some techniques, they are:

1. Observation

Observation is a technique of collecting data by observing directly or indirectly the things that are observed and recording them on the observation tool. The things that are observed are usually symptoms of behavior, living things, and inanimate objects.¹⁰ Observations referred to in this study are observations made at the time the research took place intending to match the lesson plan using Snowball Throwing Method with activities during learning, which took place in the experimental class.

2. Interview

Interviews are used in preliminary studies to find problems that must be investigated. Interviews can be conducted in a structured or unstructured way, but here the research uses unstructured interviews where researcher do not used interview guidelines systematically and completely in collecting data.¹¹ The objects interviewed include eighth-grade students and an English teacher. Researcher conducted interviews leading to the outline of the problem, namely to find out the vocabulary mastery of class VIII MTs Mazro'atul Huda Wonorengo Demak.

3. Test

The test is used to measure knowledge, skills, abilities, and intelligence in individuals and groups. The data collection technique used in this study was in the form of a test with multiple choices to get objective results. The test given is pretest and posttest. The pre-test was carried out in both the experimental group and the control group before the treatment or teaching presentation. The pre-test was conducted to determine students' vocabulary mastery with their scores. Posttest was carried out after the students were in the experimental and the

¹⁰ Wina Wijaya, *Penelitian Pendidikan Jenis, Metode dan Prosedur* (Jakarta: Prenada Media Group, 2013).255

¹¹ Sugiyono, *Metode Penelitian Pendidikan Kuantitatif, Kualitatif, dan R&D* (Bandung: Alfabeta, 2010).141

control class was given treatment. This is done to get to know student's vocabulary mastery after they were taught by using the snowball throwing method.¹²

The vocabulary test used in this study is a multiple-choice test with four options (A, B, C, and D) for assessing students' vocabulary mastery. The test consists of 25 questions with the material "Daily Routines Vocabulary". The number of correct answers determines the test's score. Students would receive 1 point for each correct answer and 0 points for each incorrect answer. To assess a student's vocabulary:

$$\text{Total correct answer } X \ 4$$

If the students answer all the questions correctly, they would receive a high score of 100.

Table 3.1
The Students' Predicate Score

No.	Alphabet	Value
1	Very Good (A)	86-100
2	Good (B)	71-85
3	Enough (C)	56 -70
4	Bad (D)	55

E. Validity and Reliability of Instrument

1. The validity of Instrument

This test is carried out to examine the level of accuracy of an instrument so that it is in line with the measurement objectives.¹³ To calculate the validity test of an instrument, the researcher used the *product moment correlation* formula or commonly called *the Pearson correlation* by using IBM SPSS Statistics 25

Table 3.2
Correlation Coefficient Interpretation Guidelines

Coefficient Interval	Level Correlation
0,00 – 0,199	Very low
0,20 – 0,399	Low
0,40 – 0,599	Medium
0,60 – 0,799	High
0,80 – 1,000	Very high

¹² Pupuh Fathurahman, *Metode Penelitian Pendidikan* (Bandung: CV Pustaka Setia, 2011).185

¹³ Ali Hamzah, *Evaluasi Pembelajaran Matematika* (Jakarta: PT Raja Grafindo Persada, 2014). 214

2. The reliability of the instrument

Instruments that had been valid, and then tested its reliability is the degree or level of consistency according to an instrument. If the test tested in the same time group at different times always gives the same output, then a test can be said to be reliable.¹⁴ In this study, the instrument reliability test used the *Cronbach Alpha* technique using IBM SPSS Statistics 25.

The criteria for testing the reliability of the instrument are:

- If the value obtained in the testing process using the Cronbach Alpha technique >0.60 , it is said to be reliable.
- If the value obtained in the testing process using the Cronbach Alpha technique <0.60 , it is said to be unreliable.¹⁵

Table 3.3
Reliability Table Based on Alpha Values

Alpha	Classification
0.00-0,20	Very low reliability
$>0,20-0,40$	Low reliability
$>0,40-0,60$	Medium reliability
$>0,60-0,80$	High reliability
$>0,80-1,00$	Very high reliability

F. Data Analysis Technique

1. Descriptive Statistics Data Analysis

Descriptive statistics are statistics used to analyze data by describing the data that has been collected using a table, a circle diagram, a graph, a pictogram, a mode, a median, a mean, average and standard deviation. In this research, the instrument used is a vocabulary test whose data results would be analyzes using descriptive statistical techniques with used SPSS 25 which are presented in the form of the mean, highest value, lowest value, and standard deviation.¹⁶

¹⁴ Zainal Arifin, *Evaluasi Pembelajaran* (Bandung: PT Remaja Rosdakarya, 2017). 258

¹⁵ Masrukhin, *Statistik Deskriptif dan Inferensial Aplikasi Program SPSS dan Excel* (Kudus: Media Ilmu Press, 2014). 139

¹⁶ Fathurahman, *Metode Penelitian Pendidikan*.207

2. Descriptive Inferential Data Analysis

Inferential statistics is a statistical technique used to analyze sample data and apply the results to the population.¹⁷ The researcher uses inferential statistics with the aim of finding the effect of one variable on another variable, namely the Snowball Throwing Method variable on Student's Vocabulary Mastery. Before testing the hypothesis, it's necessary to test the prerequisites first, like the normality test and homogeneity test.

a. Normality Test

The normality test was employed to determine whether or not the data in the experimental and control. Classes were normally distributed. SPSS (Statistical Package for the Social Sciences) was used to test the normally.¹⁸ The Kolmogorov-Smirnov and Shapiro Wilk normality test were used. The following were the hypotheses for the normally test:

H_0 : The data are normally distributed.

H_a : The data are not normally distributed

The following are the acceptance or rejection criteria for the normally test:

H_0 is accepted if $\text{Sig.} \geq \alpha = 0.05$

H_a is accepted if $\text{Sig.} < \alpha = 0.05$

b. Homogeneity Test

The homogeneity test would be used to see if the data obtained from the sample was homogeneous. In this research, statistical computations would be performed using SPSS (Statistical Package for Social science).¹⁹

The following are hypotheses for the homogeneity test:

H_0 : The variances of the data are homogenous

H_a : The variances of the data are not homogenous

The following are the acceptance or rejection criteria for the normally test:

H_0 is accepted if $\text{Sig.} > \alpha = 0.05$

H_a is accepted if $\text{Sig.} < \alpha = 0.05$

¹⁷ Pupuh Fathurahman.209

¹⁸ Masrukhin, *Statistik Deskriptif dan Inferensial Aplikasi Program SPSS dan Excel*. 299

¹⁹ Sudaryono, *Statistika II: Statistika Inferensial Untuk Penelitian* (Yogyakarta: Andi Offset, 2021).55

c. Hypothetical Test

If the assumptions of the normally test and homogeneity test are matched. In this example, statistical computations would be performed using SPSS (Statistical Package for Social Science). In this situation, the used of SPSS is to increase the study's efficiency and practicality.²⁰

The following are some of research hypotheses:

H_a: There is a significant effect of snowball throwing method to improve students' vocabulary mastery

H₀: There is no significant effect of snowball throwing method to improve students' vocabulary mastery

The following are the acceptance or rejection criteria for the hypotheses test:

H_a is accepted if Sig. < $\alpha=0.05$

H₀ is accepted if Sig. > $\alpha=0.05$

G. Research Ethical Considerations

Ethical considerations are one of the most important aspects of research. Ethical norms are so general that they can easily be dismissed as common as sense. According to Nilesh B Gajjar, there are four reasons why it is important to adhere to ethical norms in research.

1. Standards promote research goals such as knowledge, truth, and error prevention.
2. Because research often requires a high degree of collaboration and coordination among a large number of people in different disciplines, and institutions, ethical standards include trust, accountability, mutual respect, and impartiality. Promote essential value for collaboration.
3. Specific ethical guidelines allow researcher to take responsibility for the general public.
4. The ethical norms in research help increases public support for research.

Based on the above, research ethics is to ensure ethical research practices that show researcher that they are seriously

²⁰ Masrukhin, *Statistik Deskriptif dan Inferensial Aplikasi Program SPSS dan Excel*. 159

considering how they would affect participants when conducting research. We can conclude that ethical consideration is important.²¹



²¹ Nilesh B. Gajjar, "Ethical Consideration in Research," *International Journal for Research in Education* 2, no. 7 (2013): 8.