

CHAPTER III RESEARCH METHODOLOGY

A. Research Method

This research uses quantitative methodology with experimental methods. The experimental method was chosen in this research to test the effectiveness of the learning method used as a tool to increase students' mastery of knowledge at The Islamic Junior High School in Kudus. According to Sugiyono, experimental research methods can be interpreted as research methods used to determine the effect of a particular treatment on other treatments under controlled conditions.¹ The reason the experimental method was used in this research is because this research applies a method in classroom learning, namely in the form of applying traditional methods and audiovisual methods. Apart from that, it is also to find out the comparison of the effects of different treatments, namely in classes treated using traditional methods and classes treated using audiovisual methods.

The experimental design in this research uses a true experimental using a posttest-only control design. The selection of this research was carried out based on the problem formulation and research objectives, where the researcher wanted to obtain findings regarding the effectiveness of traditional methods and audiovisual methods on students' mastery of skills. Therefore, the experiment will be carried out by dividing two experimental classes and one control class. Two experimental classes, namely the class treated using traditional methods and the class treated using audiovisual methods, will be compared with the control class to determine the effectiveness of each method. From the results of each method, it can be concluded that its effectiveness has been achieved.

B. Research Subject

Based on the subject matter, the target of this research was carried out in 7 grade of Dawe Kudus Islamic Junior High

¹ Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif Dan R&D* (Bandung: Alfabeta, 2012).107.

School in the English subject for the 2023–2024 academic year. This research took the research population directly from grade 7 students consisting of 3 classes, namely classes VII A, VII B and VII C, then the sample used in this research was the entire population, namely all grade 7 students, for the reason that this research needed to use 2 experimental class and 1 control class, the sample used in this research was saturated sampling. The definition of saturated sampling, according to Sugiyono, is a technique for determining whether all members of the population will be sampled in research.² The number of students in class 7 is 87, with 34 male and 53 female. These students were then used as research samples, which were then collected into three groups. The first experimental group consisted of 29 students, the second experimental group consisted of 29 students, and the control group consisted of 29 students.

C. Design and Definition of Operational Variable

This section contains everything that becomes a research variable, including the dimensions and indicators of each such variable. These will be tested according to the data gathered through data collection. Everything that the researcher decides to investigate further in order to gather relevant data from which conclusions can be made is referred to as a research variable. There are independent and dependent factors in this study. The variables that affect one another are known as independent variables, and the variables that result from the independent variables are known as dependent variables.³ The variables tested by the hypothesis are as follows:

1. Independent Variable

Independent variable is a variable that influences or is investigated for its influence. The independent variable is written with the symbol X in the research. In this study, the independent variables were traditional methods and audio-visual methods.

² Sugiyono.85.

³ Sugiyono, *Statistika untuk Pendidikan*, (Bandung: Alfabeta, 2013),4.

2. Dependent Variable

Dependent variable is a variable that arises as a result of an independent variable. In this study, the dependent variable was students' vocabulary mastery.

Operational design is intended to provide a clear picture of the variables considered so as to equate the perception between the writer and the reader. The operational definition of this research is described as follows:

a. Traditional Method (X_1)

The traditional method is a learning model that is often used almost every time teachers teach, especially at the lower level of education, because the method in this model is simple and easy to use.

b. Audio Visual Method (X_2)

The audiovisual method is a variant of learning that uses sound and image elements. Examples include video recordings, films of various sizes, and sound slides. Using audiovisual media will make the information more transparent and exciting.

c. Vocabulary Mastery (Y)

The collection of terms that someone teaches in a foreign language as the foundation for their understanding is called their vocabulary. Being the foundation of language proficiency and the primary means of communication, vocabulary mastery has a significant impact on an individual's language proficiency.

D. Instrument and Data Collection Technique

This research used observation, test, treatment and documentation. When gathering data is the main goal of a study, data collection techniques are the most critical and significant stage in the research process. Researchers cannot collect data that satisfies predefined data standards, if they don't understand data collection methods.⁴ To obtain the necessary

⁴ Sugioyno, *Metode Penelitian Pendidikan Kuantitatif, Kualitatif, and R&D*, 308.

data, several techniques or methods of data collection are needed in the following ways:

1. Test

In this research, one test will be carried out to collect data: the post-test. The post-test contains 20 questions that students in the experimental and control classes will answer. This post-test is carried out after students receive treatment and at the end of the learning process of a material. The post-test in this study aims to determine the extent of students' understanding of the family members' material and the critical points of the material taught in classes that use traditional methods and audiovisual methods. The effectiveness of the two methods can be done by comparing the post-test results between classes using traditional methods and classes using audiovisual methods. The goal is for teachers to know which is better based on test results regarding student understanding. The teaching program is successful if students understand the material better after the learning process. Researchers chose the post-test method in collecting data because post-tests can help researchers spread the effectiveness of interventions or treatments given to research subjects.

2. Treatment

Experimental research has a distinctive characteristic, namely treatment. Treatment is used to see the differences between the conditions of the experimental group and the conditions of the control group after being given treatment. Meanwhile, in this research, the first experimental group will be given treatment using traditional methods on family member material to increase students' vocabulary; the treatment is carried out using learning steps that have been designed in the RPP; and the second experimental group will also be given treatment in the form of audiovisual methods on family member material to improve students' vocabulary skills. This treatment method is also carried out using learning steps that have been designed in the RPP. This treatment was used to determine the post-test results in the first experimental group and the second experimental group. The treatment was carried out for 2 weeks in this

research, with 2 meetings in each experimental class which took 2 x 40 minutes for each meeting.

3. Documentation

Documentation used researcher to add the research data that researcher gets from place of research directly. For examples from relevant books, rules, activities, photos, and data that concern with research. Research results can be more believable if there are photographs or academic literature, art and other aspects that can support.⁵ At this stage, the researcher collects a number of things that support research activities, namely documents in the form of lists of student names, student scores, and student activities in learning using traditional and audio-visual methods.

E. Data Analysis Technique

The process of organizing data according to variables and respondent categories, presenting data for each variable under study, solving problems through computations, and testing hypotheses is known as data analysis. strategies for analyzing data in statistically-based quantitative research. When examining the study's data, the researchers employed:

1. Research Data Test

Given that the data describes the variables under investigation and acts as a means of demonstrating the hypothesis, it is clear that the data plays a critical role in studies. As a result, the quality of the data gathering tool determines the accuracy of the data. Two essential criteria that a good instrument must fulfill are validity and reliability.

a. Validity

Validity is an interpretive determination made from the results of a measurement or evaluation. Valid instruments have high validity, but less proper tools have low validity.⁶ The overall validity of quality questions is closely related to the validity of each item. If each item has high validity in relation to the total score, then the

⁵ Sugiyono, *Statistika untuk Penelitian*, 348.

⁶ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik* (Jakarta: Reineka Cipta, 2010).211.

instrument will also have high validity. If there are items that are not quite right, then those items need to be perfected, replaced, so that the items used have good validity. This test is done by looking at the calculated r value, which will later be compared with the r table value. The instrument is said to be valid when the calculated r value is greater than the r table. This test uses SPSS 25 for Windows.

b. Reliability

Reliability is the idea that a good instrument can be relied upon enough to be used for data collection. Data from trustworthy instruments can be relied upon. The data will not change no matter how many times it is collected if it is, in fact, consistent with reality. In order to determine whether to proceed with the test, the *Cronbach alpha* value is examined. If the value of *Cronbach alpha* is greater than 0.5, the instrument is deemed credible. SPSS 22 for Windows is used for this test.

2. Prerequisite Test

Before carrying out statistical analysis, an assumption test or prerequisite test must be carried out first. Prerequisite tests include normality and homogeneity tests.

a. Normality Test

The normality test is carried out to determine whether the distribution of the data collected is normal. If parametric methods are used to analyze it, normality requirements must be met, namely the data must come from a normal distribution. If the data does not come from a normal distribution, the method used is non-parametric statistics.⁷ The values in the significance column are essential for determining whether the data is normally distributed. The normality test criteria used in this research are as follows

- 1) If the significant value is $> 0,05$ then the data is declared to be normally distributed.

⁷ Nuryadi et al., *Buku Ajar Dasar-Dasar Statistik Penelitian*, Sibuku Media, 2017.

2) If the significant values is $< 0,05$ then the data is declared not normally distributed.

b. Homogeneity Test

When demonstrating that two or more sample data groups originate from populations with the same variance, the homogeneity test is employed.⁸ The homogeneity test aims to determine whether the population variants of the experimental class (audiovisual method and traditional method) and the control class are similar or different. The homogeneity test criteria in this study are:

- 1) If the significance value is > 0.05 , then it is stated that the data is homogeneously distributed.
- 2) If the significance value is < 0.05 , then the data is declared not to contribute homogeneously.

3. Hypothesis Test

The next stage was for the researcher to calculate the data in order to test the hypothesis after analyzing the data for normalcy and homogeneity. This type of analysis aims to prove the initial hypothesis in a study. In this research, there are 3 hypothesis tests, including:

- a. Hypothesis Test 1 (test of differences in students' vocabulary mastery in experimental classes using audio visual methods and control classes without using audiovisual methods).
- b. Hypothesis Test 2 (test of differences in students' vocabulary mastery in experimental classes using traditional methods and control classes without using traditional methods).
- c. Hypothesis Test 3 (test of significant differences in students' vocabulary mastery in audiovisual method experimental classes and traditional method experimental classes).

Testing each hypothesis above, the test used is a test *independent samples t-test* or two unrelated samples. The aim is to determine whether there is a difference in the average between two sample groups that are not related to each other. As for hypothetical decision-making,

⁸ Nuryadi et al. 89.

Researchers use the SPSS 22 computer program. Decision-making in this test uses the following references:

- a. If the sig value $< 0,05$, then H_0 is rejected and H_a is accepted.
- b. If the sig value $> 0,05$ then H_0 is accepted and H_a is rejected.

F. Research Ethical Considerations

Ethical considerations in research are known as principles and guidelines created to help researchers ensure academic integrity and learn about the rights of research participants. These guidelines improve the overall quality of research and protect participants from this type of harm. This research was carried out first after the researcher received approval and research permission from the school at the first meeting to ensure that the school permitted and was willing to be a participant. Then, all participants involved in the research process must be precisely informed about the research that the researcher will conduct and its objectives. After that, researchers ask for their consent to analyze their behavior or obtain valuable data from them.

In writing this thesis, confidentiality and privacy of their data are among the most important things in research. Therefore, the researcher will use pseudonyms as an ethical action and also ensure privacy by only collecting necessary data during the individual or organizational data collection process. In the data collection process, as noted by Ahmad Tanzeh, data collection is a systematic and standard procedure for obtaining the required data.⁹ In this study, the researcher collected data through observation, tests, treatment, and the results of participants' test scores. By using this data, researchers will get results and process data from the research.

All research participants must have the right to withdraw from the research whenever they want, and researchers do not have the right to force them to do so if they do not want to participate in the research process. However, if the researcher does not want participants to leave the research process, the researcher can offer reciprocity so that they remain intact,

⁹Ahmad Tanzeh, *Pengantar Metode Penelitian* (Yogyakarta: Teras, 2009).57.

namely by offering help when they have difficulty learning English or any consultation for their learning. With this, the researcher can encourage research participants to participate and continue the research process. This principle states that the research carried out will provide something useful for the participants and the affected communities. Research not only produces data obtained from participants but also provides benefits both directly and indirectly for participants.

Another important ethical consideration is fairness because fairness is one of the fundamental pillars of academic integrity, according to Kiyimba et al. Quoting Ade Heryana's research, he said that there were three types of justice that participants received, namely: justice related to the acquisition of resources, justice related to individual rights, and justice related to respect for equality in the law.¹⁰ In this case, the researcher will always be fair in all matters. Apart from that, communication-related to research must also be honest and transparent because researchers must maintain this quality when writing research results. The researcher will reasonably quote everything said or written by other researchers and participants. Moreover, the researcher will accurately represent the data to prove their point. Whatever the results of the study, the researcher must present them fairly and avoid exaggerating or undermining the aims and objectives of the research.

¹⁰ Ade Heryana, "Etika Penelitian," *Research Gate* 25, no. 1 (2020): 1–9, <https://doi.org/10.30883/jba.v25i1.906>.