

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the methodology of the study, including the research design, population and sampling techniques, methods of data collection, research instruments, and the procedures applied for data analysis.

A. Research Method and Design

This study used a quantitative approach with a quasi-experimental design. According to Sugiyono (2022), quasi-experimental design is a type of experimental research that provided treatment and observed its effects, but does not completely control external variables because there is no randomization in determining the research subject. This design is often used in educational research because, in real conditions random grouping is difficult to do. Although it did not use full randomization, the quasi-experimental design still allowed researchers to determine the effects of the treatment by comparing the results between the experimental group and the control group selected based on specific criteria.

This design was chosen because the researcher could not randomly assign students into group. Instead, the researcher used two existing classes. One class was assigned as the experimental group (using peer correction) and the other as the control group (using self-correction). Both groups received the same topic, but different treatment techniques. The table of the research design as quoted by Sugiyono (2022) as follow:

Class	Pre test	Treatment	Post test
C	O1	self-correction	O2
E	O1	peer-correction	O2

Note :

E : Experiment Class

C : Control Class

O1 : Pre test

O2 : Post Test

B. Population and Sample

According to Sugiyono (2022), population is a generalization area consisting of objects or subjects with certain qualities and characteristics that are determined by the researcher to be studied and then drawn conclusions. The population of this study consisted of all grade VII students at SMPN 1 Mojo Kediri. This group represents the entire cohort of students who are learning English, specifically focusing on writing skills related to descriptive paragraph.

According to Sugiyono (2022), a sample is a subset of the population that is selected to represent the entire group. The sampling technique used in this study was non-random sampling, specifically purposive sampling, as the selection of the classes was based on certain considerations and criteria determined by the English teacher, not by randomization. In this study, the sample consisted of two classes from SMPN 1 Mojo, namely VII H and VII J, each consisting of 28 students. The students were divided into two groups: an experimental group and a control group, to examine the effects of the treatments being studied.

C. Research Instruments

Sugiyono (2022) explained that data collection in experimental research

is carried out systematically in order to obtain valid, reliable, and objective data that supported the testing of hypotheses. In this study, data collection involved three essential stages: pre-test, treatment, and post-test. During the pre-test phase, the researcher conducted an initial assessment to identify students' abilities and difficulties in writing descriptive paragraphs. This was followed by the treatment phase, where self-correction and peer correction strategies were applied with the aim to improving students' writing skills. After the treatment was completed, a post-test was administered. While the format of the post-test was similar to the pre-test, students this time completed the writing task after being instructed in the correction techniques. The details of how each stage was conducted are as follows:

a. Pre-Test

The pre-test was given to students before the treatment is carried out. This test aimed to find out the extent of students' understanding in describing rooms, and objects in the house. The pre-test consisted of instruction to write descriptive paragraph about favorite rooms according to students. The students had to write a descriptive paragraph about their favorite room in their house. (Pre-test instrument is available in the Appendix 1).

b. Post-Test

After the students received treatment according to the self-correction or peer correction group, they were given a post-test. This test consisted of 5 instructions. On the post-test, students had to choose a topic from the 5 instructions and write descriptive paragraph. The results of the post-test were used to analyze the effectiveness of the learning methods that had been given

and to see the improvement in students' writing skills compared to the results of the pre-test. (Post-test instrument is available in the Appendix 2).

D. Data Collection Method

According to Sugiyono (2022), data collection in experimental research is a systematic process aimed at obtaining valid and reliable data to answer the research questions. In experimental studies, the process of data collection generally involved three main stages: pre-test, treatment, and post-test. In the pre-test stage, the researcher conducted an initial assessment to identify the students' skills and difficulties in writing descriptive paragraphs. Following this, the treatment was administered through the application of self-correction and peer correction strategies to enhance the students' writing abilities. After the treatment phase, a post-test was conducted, which was similar in form to the pre-test. However, in this stage, students wrote their paragraphs after receiving instructions on the correction techniques. The implementation of each of these stages was carried out as follows:

1. Pre-Test

The pre-test is conducted as an initial assessment to identify students' existing skills and difficulties in writing descriptive paragraph. The pre-test occurs before the treatment is implemented. During the pre-test, students were asked to write a descriptive paragraph on a given topic. The students have to write a descriptive paragraph about their favorite room in their house.

2. Treatment

After the pre-test, the researcher implemented a treatment aimed at evaluating the effectiveness of peer correction versus self-correction in writing descriptive paragraph. Two groups were involved in the treatment process: one served as the experimental group, while the other acted as the control group. Both classes were given treatment for four meetings. The treatment occurred in the writing class, with the following steps:

Stages	Experimental Class	Control Class
Pre-Writing	a. The students were given the example of descriptive paragraph. b. The teacher and students engaged in a detailed discussion about the paragraph, including the steps involved in constructing it. c. The students were asked to mention things in the classroom. (brainstorming)	a. The students were given the example of descriptive paragraph. b. The teacher and students engaged in a detailed discussion about the paragraph, including the steps involved in constructing it. c. The students were asked to mention things in the classroom. (brainstorming)
While-Writing	a. The students were assigned to write a paragraph on the given topic, which was about their favorite room in a house, following the instructions provided in the worksheet. They were expected to write in accordance with the previously given guidelines.	a. The students were assigned to write a paragraph on the given topic, which was about their favorite room in a house, following the instructions provided in the worksheet. They were expected to write in accordance with the previously given guidelines.

	<p>b. The students were instructed to exchange their worksheets with their desk mates and were provided with an assessment rubric to evaluate their peer's work. Rather than simply assigning a score, they were required to carefully examine the text to determine whether the components outlined in the rubric were present in their peer's writing. Based on their analysis, students were also encouraged to offer constructive suggestions to one another.</p>	<p>b. The students were instructed to assess their own writing by referring to the assessment rubric, which served as a guideline. This rubric included key aspects of writing such as text organization, grammar, punctuation, and other relevant criteria.</p>
Post-Writing	<p>a. The students were allowed additional time for discussion after completing the corrections. Afterwards, they were instructed to reflect on their writing and seek clarification on any parts of the material they did not fully understand.</p> <p>b. The students were instructed to write a paragraph on the topic provided in the worksheet, using it as their final draft. They were</p>	<p>a. The students were allowed additional time for discussion after completing the corrections. Afterwards, they were instructed to reflect on their writing and seek clarification on any parts of the material they did not fully understand.</p> <p>b. The students were instructed a paragraph on the topic provided in the worksheet, using it as their final draft. They were expected to follow the guidelines that had been given.</p>

	<p>expected to follow the guidelines that had been given earlier.</p> <p>c. The final version of the students' writing was collected as the post-test.</p>	<p>c. The final version of the students' writing was collected as the post-test.</p>
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Table 3.1 Treatment in Research

Meeting	Date	Class	Activity
1	February 21. 2025	VII H & VII J	Students' doing a pre-test.
2	February 22, 2025	VII H	Introduction about descriptive paragraph and introduction to self-correction using checklist.
		VII J	Introduction about descriptive paragraph and introduction to peer correction using checklist.
3	February 24, 2025	VII H	Writing activity and doing a self-correction.

		VII J	Writing activity and doing a peer correction.
4	February 25, 2025	VII H	Students' doing a post-test.
	February 26, 2025	VII J	Students' doing a post-test.

Table 3.2 Schedule of the treatment

3. Post-Test

The post-test was conducted after the treatment phase. Similar to the pre-test, students were asked to write a descriptive paragraph, but this time after receiving instruction in peer correction and self-correction methods. The researcher used the same rubric as in the pre-test. The comparison of pre-test and post-test scores was used to determine the effectiveness of peer and self-correction in writing descriptive paragraph.

E. Validity and Reliability

This study used content validity and construct validity to ensure that the instrument was in accordance with the research objectives and was able to measure descriptive writing ability comprehensively. In addition, to ensure the reliability of the instrument, this study applied inter-rater reliability by involving two independent assessors to assess test results consistently and objectively.

1. Validity

a. Content Validity

In terms of content validity, the material provided to the students was aligned with the curriculum in use, which was the Merdeka curriculum applied in Grade VII of the second semester in junior high school. The test administered in this research focused on writing a descriptive paragraph about people, rooms, and things in a house, as these topics are included in the syllabus for Grade VII, second semester. According to Sugiyono (2022), content validity ensured that the test items accurately represent the subject matter being measured, reflecting the curriculum's objectives and ensuring that the test is an appropriate tool for evaluating students' understanding. In this study, the content was specifically chosen to align with the curriculum's topics, enhancing the validity of the test.

b. Construct Validity

The researcher conducted writing tests and treatments in this study and evaluated the students' writing using a rubric based on Brown (2007), which focuses on five key aspects: content, grammar, organization, vocabulary, and mechanics. This rubric was selected to ensure construct validity, as it comprehensively represents the essential components of writing proficiency that align with the study's objectives. According to Sugiyono (2022), construct validity referred to the extent to which a test measured the concept it was intended to measure. By using a rubric that covered all critical aspects of writing, this study ensured that the evaluation was accurately reflecting

students' writing abilities in a way that aligns with the theoretical framework of writing proficiency.

2. Reliability

To ensure the accuracy of the pre-test and post-test scores, the researcher employed inter-rater reliability by involving the English teacher at the school to provide additional scores alongside the researcher's own assessments. The consistency between these scores was analyzed using Pearson correlation, a statistical method that measured the strength and direction of the relationship between two sets of scores. A high Pearson correlation coefficient indicated a strong agreement between the two raters, confirming the reliability of the scoring process. According to Sugiyono (2020), Pearson correlation was widely used in educational research to assess the degree of association between variables, making it an appropriate method for determining the reliability of scores in this study.

F. Data Analysis

The data in this study were analyzed using Analysis of Covariance (ANCOVA) with the help of SPSS. According to Sugiyono (2022), ANCOVA is a statistical technique used to test the effect of an independent variable on a dependent variable by controlling for the effect of other continuous variables (covariates) that may influence the outcome. This method helps to eliminate the influence of initial differences between groups and provides a more accurate evaluation of the treatment's effect. Prior to conducting ANCOVA, assumption tests such as normality, homogeneity of variances, linearity, and homogeneity of regression slopes

were carried out to ensure the validity of the analysis. After all assumptions were met, ANCOVA was conducted to determine whether there was a statistically significant difference in students' writing achievement as a result of the treatment applied.

1. Descriptive Statistics

Before conducting deeper statistical analysis, the researcher must first describe the data using:

- a. Mean (average): the central tendency of the data.
- b. Minimum and maximum scores.
- c. Standard deviation is the spread of the data from the mean.

These steps helped to summarize the overall performance of students in both the experimental and control groups.

2. Normality Test

In this research, normality testing was conducted using the Kolmogorov-Smirnov test. The Kolmogorov-Smirnov test is used to determine whether the data are normally distributed, which is an essential assumption for conducting further parametric statistical tests. This test is suitable for larger sample sizes and provided a significance value to assess the normality of the data.

Hypothesis:

- a. H_0 : The data is normally distributed if $p > 0.05$
- b. H_a : The data is not normally distributed if $p < 0.05$

3. Homogeneity Test

In this study, the researcher used Levene's Test to examine the equality of variances. This test was commonly used in SPSS and is appropriate for checking the assumption of homogeneity before conducting parametric tests such as the Independent Sample T-Test. Levene's Test assessed whether the variance of the data in each group is statistically equal. If the significance value is greater than 0.05, it indicated that the data have homogeneous variances.

The hypothesis formula:

- a. H_0 : The variances of the groups are equal (homogeneous).
- b. H_a : At least one group's variance is different (not homogeneous).

4. Hypothesis Testing

The core of data analysis in quasi-experimental research lay in hypothesis testing. This step aimed to determine whether there is a significant difference between the experimental and control groups after the intervention. The goal of hypothesis testing was to assess whether the hypothesis formulated in this study could be accepted. To carry out this test, an Analysis of Covariance (ANCOVA) was applied, which is a statistical technique used to compare the means of two or more groups while controlling for the effects of one or more covariate variables.

Hypothesis:

- a. H_0 : There is no significant difference between the two groups.
- b. H_a : There is a significant difference between the two groups.