

CHAPTER III

RESEARCH METHOD

This chapter discusses the research design of the study, the research variable, the population and sample, the research instrument, the treatment procedure, the technique of collecting data, the data analysis,

A. Research Design

This study employed a quantitative approach and utilized a quasi-experimental design with pre-tests and post-tests to examine the impact of mind mapping on students' recount text writing ability. The quasi-experimental design was selected because it yields reliable and valid results even without full randomization, enabling the researcher to establish a clear causal relationship between the independent variable (mind mapping) and the dependent variable (writing performance) (Creswell, 2008; 2012). Rather than randomly assigning individuals, intact classes were designated as the experimental and control groups a common feature of quasi-experimental research. This approach is particularly well-suited to educational contexts where random assignment is often impractical or ethically problematic (Creswell, 2014).

Analyzing pre-test and post-test score differences across both groups provided a strong basis for evaluating the intervention's effectiveness while controlling for extraneous variables (Gay, Mills, & Airasian, 2012). Such a design is well-suited to authentic classroom studies because it causes minimal interference with regular instruction and grouping. At *MTsN 2 Kota Kediri*, using intact classes facilitated seamless execution of the study and ensured that mind mapping was applied as a real instructional strategy focused on improving students' ability to produce recount texts (Arikunto, 2010).

Table 3.1 The Data Collection Method

Class	Pre-Test	Treatment	Post-test
Experimental class	✓	Mind mapping	✓
Control class	✓	outline	✓

B. Research variable

A variable in research refers to any characteristic, trait, or factor that can change or be controlled and measured within an investigation. According to Winarno (2013, p. 26), it represents the central object of study and the researcher's main interest. For this research, titled "The Effect of Mind Mapping on Teaching Writing Skills in Recount Texts for Eighth-Grade Students at *MTsN 2 Kota Kediri*," two primary variables were established.

The independent variable consisted of the teaching intervention namely, the implementation of mind mapping as a pre-writing tool (compared with conventional outlining) to enable systematic idea organization. The dependent variable was the students' proficiency in producing recount texts, evaluated through recognized scoring dimensions: content, structure and language feature

C. Population and Sample

Identifying the population constitutes a critical foundation of research, as it determines both the relevance and the reliability of the findings. According to Zulhidah (2014), the population is the complete group of interest to the researcher, whereas Creswell (2012) regards it as a collection of individuals who share specific traits. For this study, the population comprised the entire 470 eighth-grade students at *MTsN 2 Kota Kediri*, spread across seven classes in the first semester in academic year. The decision was deliberate, stemming from the researcher's prior teaching internship at the school, which offered valuable contextual understanding and consistently revealed difficulties in students' writing abilities.

In research, sampling is indispensable because the sample functions as a representative subset of the broader population. Arikunto (2010) defines a sample as a portion that truly mirrors the population's characteristics. At *MTsN 2 Kota Kediri*, eight eighth-grade classes were available during the first semester. Rather than using random assignment, the study employed intact classes. Class 8G, with 36 students, was assigned as the experimental group, and Class 8K, also consisting of 36 students, acted as the control group. These classes were chosen on the advice of the English teacher, who verified their similarity in class size, academic achievement, attendance rates, and discipline. Moreover, neither group had previously experienced targeted instructional interventions, thus guaranteeing their equivalence and appropriateness for the quasi-experimental design.

D. Research Instrument

The use of research instruments is fundamental to the research process, as they offer a structured and systematic approach to gathering data that align with the study's objectives. Sugiyono (2013) describes a research instrument as any tool researchers

employ to collect data, ranging from tests and questionnaires to interview schedules and observation sheets. Choosing a suitable instrument is crucial, since it directly affects the accuracy of the data and the trustworthiness of the study's outcomes. In this quasi-experimental study, a writing test served as the principal instrument, selected for its capacity to deliver an objective, standardized, and comparable assessment of students' writing performance in recount texts. This aligns with Arikunto's (2010) position that tests are widely accepted in educational research as reliable and consistent measures of students' knowledge and skills. The instrument comprised two parallel writing tests: a pre-test given before the treatment and a post-test administered upon its completion. Both were specifically developed to evaluate recount text writing ability, enabling the researcher to measure any enhancement in proficiency linked to the application of mind mapping techniques.

1. Pre-Test

The pre-test was given to both the experimental and control groups before any instructional treatment began, with the goal of assessing students' initial competence in writing recount texts. Students were provided with paper and directed to write a three-paragraph recount entitled "Holiday" in a 60-minute session. This assessment served to establish a clear picture of students' writing skills prior to the intervention. The resulting data functioned as a benchmark for evaluating subsequent progress in writing performance after the respective teaching methods were applied. Furthermore, the pre-test confirmed the initial equivalence of the two groups' writing abilities, thereby enhancing the credibility of the comparative analysis. A detailed test specification outlining the instrument's design is attached as Appendix 3.

2. Post-Test

The post-test was carried out once the treatments had been delivered to both the experimental and control classes, with the aim of evaluating students' gains in recount text writing performance. A pre-test had earlier been administered to both groups to establish their starting levels. Throughout the intervention, the experimental class received mind mapping instruction, while the control class was taught via the outlining technique. In the post-test session, students were instructed to write a three-paragraph recount entitled "Losing Someone" within a 60-minute timeframe. Students in the experimental group first developed a mind map before drafting their compositions, whereas those in the control group used outlining, following the same format and duration. The post-test data were subsequently examined to compare the effectiveness of the two pedagogical methods. The full assessment blueprint that underpinned the instrument design is attached as Appendix 3.

The researcher used a writing assessment rubric created by Lee (2017, p. 18) to evaluate students' recount texts. This rubric examines writing across three main aspects: content, structure, and language features, using a four-point scale: excellent (4), good (3), average (2), and needs improvement (1). The assessment is carried out in detail through three components: content, organization and language use. Students' final scores are calculated using the following formula:

$$\text{final score} = \frac{(\text{content and structure} + \text{language feature}) \times 100}{24}$$

After collection, the scores were assigned to specific proficiency bands based on a validated writing rubric, thereby providing a structured and impartial assessment of students' writing ability. The full rubric used for scoring is included in Appendix 4.

E. Treatment procedure

To fulfill the research objectives and reliably gauge the effects of the applied teaching strategies, a meticulously planned treatment procedure was executed. This involved a single core session divided into three essential stages: pre-test, treatment, and post-test. The experimental and control groups underwent identical activity sequences, though they experienced distinct instructional approaches. The experimental group was guided using mind mapping to generate and arrange ideas for recount texts, while the control group employed the outlining technique, a more standard method in writing pedagogy.

Furthermore, the treatment was carried out under the Genre-Based Approach (GBA), which provided the comprehensive instructional model. As described by Emilia (2011), GBA includes four consecutive stages: Building Knowledge of the Field (BKOF), Modelling of the Text (MOT), Joint Construction of the Text (JCOT), and Independent Construction of the Text (ICOT). These stages are intended to progressively enhance students' knowledge of a text's social function, structure, and linguistic traits, leading to autonomous text production. Throughout this study, the four stages were consistently applied in the teaching process to assist students in crafting recount texts. Employing this framework guaranteed coherent and methodical instruction while establishing a reliable means to observe students' writing development over the course of the intervention.

Table 3.2 The Schedule of Treatment Procedure

Meeting	Activity	Experiment class	Control class
1	Pre- test	5 th August 2025	27 th July 2025
2	Treatment-2	12 th August 2025	6 th Augustus 2025
3	Treatment-3	19 th August 2025	13 th Augustus 2025
4	Treatment-4	26 th Augustus 2025	20 th Augustus 2025
5	Treatment-5	2 ^{sd} September 2025	27 th Augustus 2025
6	Post- test	9 th September 2025	3 th September 2025

Table 3.3 The Activity of Treatment Procedure

Stages	Experimental class	Control class
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Pre-teaching	Building Knowledge of the Field (BKOF): 1. The teacher greets the students and leads them to pray (basmalah). 2. The teacher checks students' attendance. 3. The teacher conditions the classroom to prepare for the learning process. 4. The teacher explains the learning objectives and the purpose of the research. 5. The teacher conducts apperception by asking questions related to students' personal experiences, such as holiday activities, Independence Day celebrations, or experiences of losing something. 6. The teacher briefly explains recount text, including its definition, purpose, generic structure, and language features. 7. In the first meeting, the teacher explains that students will take a pre-test to identify their initial ability in writing recount texts. 8. The teacher distributes the pre-test and asks students to complete it independently without using books or dictionaries.	Building Knowledge of the Field (BKOF): 1. The teacher greets the students and leads them to pray (basmalah). 2. The teacher checks students' attendance. 3. The teacher conditions the classroom to prepare for the learning process. 4. The teacher explains the learning objectives and the purpose of the research. 5. The teacher conducts apperception by asking questions related to students' personal experiences, such as holiday activities, Independence Day celebrations, or experiences of losing something. 6. The teacher briefly explains recount text, including its definition, purpose, generic structure, and language features. 7. In the first meeting, the teacher explains that students will take a pre-test to identify their initial ability in writing recount texts. 8. The teacher distributes the pre-test and asks students to complete it independently without using books or dictionaries.
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	9. The teacher collects the students' pre-test papers after the allotted time.	9. The teacher collects the students' pre-test papers after the allotted time.
While- teaching	Building Knowledge of the Field (BKOF): 1. The teacher explain recount trxt in more detail 2. The teacher introduce mind mapping as a strategy for planning Modelling of the Text (MOT): 1. The teacher introduces mind mapping as a strategy for planning recount text writing 2. The teacher presents a simple example of a mind map and explains how ideas can be developed into paragraphs. 3. The students analyze the model recount text together with the teacher based on its structure. Joint Construction of the Text (JCOT): 1. The students work in groups to rearrange jumbled recount text sentences into a coherent text. 2. The teacher gives feedback on the students' group work.	Building Knowledge of the Field (BKOF): 1. The teacher explain recount trxt in more detail 2. The teacher introduce outline as a strategy for planning Modelling of the Text (MOT): 1. The teacher introduces outline as a strategy for planning recount text writing 2. The teacher presents a simple example of an outline and explains how ideas can be developed into paragraphs. 3. The students analyze the model recount text together with the teacher based on its structure. Joint Construction of the Text (JCOT): 1. The students work in groups to rearrange jumbled recount text sentences into a coherent text. 2. The teacher gives feedback on the students' group work.

	Independent Construction of the Text (ICOT). 1. The students write a recount text individually based on the mind map they have created. 2. The teacher guides and assists students who experience difficulties during the writing process. 3. The teacher provides feedback on the content, structure, and language use of the students' writing.	Independent Construction of the Text (ICOT). 1. The students write a recount text individually based on the outline they have created. 2. The teacher guides and assists students who experience difficulties during the writing process. 3. The teacher provides feedback on the content, structure, and language use of the students' writing.
Post- teaching	Independent Construction of the Text (ICOT): 1. The teacher asks the students to take a post-test by writing a recount text on the theme “Losing Someone.” 2. The students write a recount text consisting of three paragraphs within the allotted time without using books or dictionaries. 3. The teacher collects the students' post-test papers. 4. The teacher gives a brief reflection on the	Independent Construction of the Text (ICOT): 1. The teacher asks the students to take a post-test by writing a recount text on the theme “Losing Someone.” 2. The students write a recount text consisting of three paragraphs within the allotted time without using books or dictionaries. 3. The teacher collects the students' post-test papers. 4. The teacher gives a brief reflection on

	learning activities. The teacher summarizes the lesson. 5. The teacher closes the lesson by leading the students to recite <i>hamdalah</i> together.	the learning activities. The teacher summarizes the lesson. 5. The teacher closes the lesson by leading the students to recite <i>hamdalah</i> together.
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F. Data Collection Method

In this quantitative study, the effectiveness of mind mapping was measured primarily through the use of tests. As Brown (2004) explains, a test is a formal tool for assessing a person's competence, performance, or knowledge in a specific area. Here, tests served to evaluate students' recount text writing ability and were conducted in two phases: a pre-test prior to the treatment and a post-test upon its completion.

1. Pre-Test

The pre-test was carried out in both groups before any treatment began, with the aim of assessing students' initial ability to write recount texts. Students were given a sheet of paper and 60 minutes to write a three-paragraph recount on the theme "Holiday." The resulting scores provided essential baseline data against which post-intervention improvement could be measured and confirmed that the two groups were initially comparable in writing skill, thus ensuring greater objectivity in the final comparison.

2. Treatment

The researcher implemented the treatment by applying two different instructional technique in the experimental and control classes. In the experimental class, the Mind Mapping technique was implemented to help students organize and develop their ideas when composing recount texts. Conversely, the control class received instruction

through the outline technique. Both instructional treatments were carried out over the span of six sessions.

3. Post-Test

The post-test was conducted after the completion of the treatment in both groups to measure improvements in students' recount text writing performance. Having previously taken a pre-test to determine their initial ability, the experimental group received mind mapping instruction, while the control group was taught via outlining. For the post-test, students were asked to write a three-paragraph recount on the theme "Losing Someone" within 60 minutes. The experimental group first created a mind map as a pre-writing tool before drafting, whereas the control group used outlining, maintaining identical structural and time requirements. The post-test results were then analyzed to evaluate and compare the effectiveness of the two teaching approaches in enhancing writing proficiency.

G. Data Analysis Method

In educational research, quantitative data analysis plays a vital role because it enables researchers to evaluate the effectiveness of teaching interventions in an objective and measurable way (Creswell, 2012). In the present study, quantitative data were derived from the post-test scores obtained by both the experimental and control groups. Before proceeding with hypothesis testing, a normality test was conducted to examine the distribution of the data. The results revealed that the data did not follow a normal distribution. Consequently, a non-parametric test the Mann-Whitney U test was selected and performed using IBM SPSS Statistics software to compare the writing performance of the two groups. This statistical procedure was employed to determine whether the use of mind mapping technique resulted in a statistically significant enhancement in the recount text writing skills of eighth-grade students at *MTsN 2 Kota Kediri*.

To assess students' writing performance, the researcher used an evaluation rubric adapted from Lee (2017, p. 18), which focuses on three main components: content, structure and language use. Each component was scored on a four-point scale: excellent (4), good (3), average (2), and needs improvement (1). A student's total score was calculated by summing the points across all components. The raw scores were then converted into percentages using the formula:

$$\text{final score} = \frac{(\text{content and structure} + \text{language feature}) \times 100}{24}$$

The highest possible raw score on the writing assessment was 24. These raw scores were subsequently converted into percentages and classified according to established proficiency bands. This conversion and categorization process ensured that evaluation remained objective, consistent, and fully aligned with recognized scoring standards. After all data were collected, statistical analysis was performed using IBM SPSS Statistics. The first step was descriptive analysis, which offered a clear summary of the results, including the number of participants per group, the highest and lowest scores, and the mean performance of both the experimental and control groups.

1. Descriptive Analysis

Descriptive analysis presents a comprehensive overview of the dataset, encompassing sample size, maximum and minimum scores, range, variance, and mean values.

2. Inter-rater reliability

Reliability refers to the stability and consistency of an instrument in producing similar results when it is administered repeatedly under comparable conditions (Sürücü & Maslakçı, 2020). An instrument is considered reliable when it consistently yields comparable outcomes across different administrations. In this study, the reliability of the pre-test and post-test in both the experimental and control groups was examined

using Cronbach's Alpha, which is widely recognized as an appropriate statistical measure for assessing internal consistency and ensuring that the test items collectively measure the same construct. According to Sugiyono (2012), a Cronbach's Alpha coefficient exceeding 0.60 indicates that an instrument is reliable, with higher coefficients reflecting stronger reliability. To strengthen the reliability of the scoring process, two evaluators were involved in assessing the students' writing performance: the researcher and an English teacher from MTsN 2 Kota Kediri. Both evaluators independently scored the students' writing tasks in the pre-test and post-test for both groups. The interpretation of the reliability coefficients in this study follows the reliability classification framework proposed by Sugiyono (2012), as presented below.

Table 3.4 Interpretation of Coefficient Value

Value	catégorie
Between 0.81 and 1.00	indicate very high agreement
Between 0.61 and 0.80	indicate high agreement
Between 0.41 and 0.60	indicate moderate agreement
Between 0.21 and 0.40	indicate low agreement
Between 0.00 and 0.20	indicate very low agreement

In line with these criteria, the reliability analysis in this study was conducted to verify the consistency and accuracy with which the pre-test and post-test instruments measured students' recount writing performance in both the experimental and control groups. The primary aim was to confirm that the instruments demonstrated high internal consistency in evaluating the intended writing construct.

3. Assumption Testing

Prior to performing the main statistical analysis, the researcher conducted normality and homogeneity tests to ensure that the data satisfied the required assumptions.

a. Normality Test

A normality test examines whether the collected data follow a normal distribution, which is a required condition for applying many parametric tests such as t-tests and ANCOVA (Ghasemi & Zahediasl, 2012). With a sample size of fewer than 50, the Shapiro–Wilk test was chosen because it is widely acknowledged to be more powerful and better suited for small samples (Razali & Wah, 2011). The interpretation followed the conventional significance threshold of $\alpha = 0.05$:

- $p < 0.05$ indicates non-normal distribution.
- $p > 0.05$ supports the assumption of normality.

b. Homogeneity of Variance Test

Verification of variance homogeneity is essential to guarantee that the groups under comparison exhibit equivalent dispersion and to prevent skewed results (Field, 2013). Levene’s Test was conducted in this research: a significance level exceeding 0.05 supported the assumption of homogeneous variances, whereas a value of 0.05 or lower would have suggested heterogeneity. Despite meeting the homogeneity requirement for homogeneity, the data violated the normality assumption, thereby precluding the use of parametric tests such as ANCOVA (Ghasemi & Zahediasl, 2012). Accordingly, the Mann–Whitney U test, a non-parametric alternative, was utilized to assess differences in post-test writing performance between the experimental and control groups.

c. Hypothesis Testing: Mann-Whitney U

As the data did not meet the normality requirement, parametric approaches like ANCOVA were ruled out (Field, 2018). The Mann–Whitney U test was therefore selected as an effective non-parametric substitute, suitable for comparing two independent groups in cases of non-normal distribution or ordinal data (Pallant, 2020). This study applied the test to examine differences in recount text writing

proficiency between the experimental group (taught with mind mapping) and the control group (taught with outlining). The decision was guided by the asymptotic 2-tailed significance value:

- A p-value below 0.05 indicates a statistically significant difference, confirming the alternative hypothesis and rejecting the null hypothesis.
- A p-value above 0.05 suggests no significant difference, resulting in acceptance of the null hypothesis and rejection of the alternative hypothesis (Ghasemi & Zahediasl, 2012).

