CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses the research design, data sources, data collection techniques, research site and participants, research instruments and procedure, data analysis.

A. Research Design

This study uses a quantitative approach with a pre-experimental method to measure. The effectiveness of using animated movie clips in improving students' listening comprehension. According to Creswell (2018), a quantitative approach involves collecting and analyzing numerical data to explain phenomena and assess the relationship between variables through statistical methods.

The research design employed is a pre-experimental one-group pretest-posttest design. In this design, one group of participants is observed and measured before and after the intervention without a control group. This design is suitable for determining the impact of an intervention on the participants.

Table 3.1 Pre-Experimental One-Group Pretest-Posttest Design

Pre-Test	Treatment	Post-Test
O1	X	O2

Note:

O1: Pre-Test,

X: Treatment,

O2: Post-Test

B. Data Source

The data for this study were obtained from primary sources collected directly from the respondents to achieve the research objectives. The primary data consist of students' listening comprehension scores gathered through a pre-test and a post-

test. The population of this study includes all eighth-grade students of SMPN 63 Bandung in the academic year 2024/2025.

C. Data Collection Technique

Pre-test, treatment, and post-test are the three phases of the data collection technique used in this study. According to Creswell (2012), pre-experimental designs commonly employ a one-group pre-test–post-test structure, in which the researcher measures participants before and after an intervention to determine the extent of change resulting from the treatment.

Similarly, Fraenkel and Wallen (2009) explain that the pre-test provides baseline information about students' initial performance, the treatment introduces the instructional strategy being investigated, and the post-test measures the outcome to evaluate the effectiveness of the intervention. In line with this theory, the present study administered a pre-test to assess students' initial listening comprehension, implemented a treatment using animated movie clips, and conducted a post-test to determine any improvement after the intervention.

1. Pre-Test

A pre-test will be prepared to assess students' initial listening comprehension, providing baseline data to measure students' abilities before the intervention. According to Creswell (2012), a pre-test is an important component in pre-experimental and quasi-experimental research, as it helps researchers determine the participants' starting level and allows for the comparison of pre- and post-intervention performance to evaluate the effectiveness of the treatment. In this study, the pre-test will consist of 20 multiple-choice questions, selected from an initial pool of 40 questions developed by the researcher. The 40 questions will first be tried out to ensure instrument validity and reliability before being officially administered. The pre-test will focus on three main listening comprehension components: a) understanding the main idea, b) recognizing specific details, and c) making inferences, which follow established frameworks for assessing listening skills (Brown, 2001). Administering the pre-test ensures that the researcher can

accurately measure students' progress after the treatment and evaluate the impact of using animated movie clips on listening comprehension.

2. Treatment

The treatment involves exposing students to selected clips from the animated movie over four classroom sessions, designed to gradually develop their listening comprehension skills. According to Creswell (2012), structured treatments in pre-experimental research allow the researcher to control the intervention and systematically measure its effect on participants' learning outcomes. Organizing the treatment over multiple sessions enables learners to process and internalize the material step by step, which supports cognitive engagement and reduces overload (Gagne, 1985). Each session focuses on different aspects of listening comprehension, such as understanding the main idea, recognizing specific details, making inferences, and interpreting contextual or inferential meaning. By implementing the treatment in four sessions, students are given adequate time to practice listening strategies, reinforce their understanding, and demonstrate gradual improvement, allowing the researcher to evaluate the effectiveness of using animated movie clips in enhancing listening comprehension.

Table 3.2 Treatment Procedures

Meeting	Activities	Focus
1st	Watching Clip 1. Teacher guides students to understand the main idea of the conversation. After watching, students answer guiding questions about the topic and the characters.	Main idea identification
2nd	Watching Clip 2. Students listen for specific details (e.g., names, numbers, places) and complete a "fill in the missing information" worksheet. Group discussion follows.	Recognizing details
3rd	Watching Clip 3. Students infer meaning from context (e.g., emotion, speaker's intention) without subtitles. They answer inference-based questions and share interpretations.	Making inferences
4th	Watching Clip 4. Students complete a summary activity, match dialogue to characters, and do a comprehension quiz covering the whole story.	Overall listening comprehension

Each session includes:

a. Screening of selected English-language clips with English subtitles (for the first two sessions only).
b. Guided discussion led by the teacher to check comprehension.
c. Listening tasks designed to practice specific listening skills.
d. Feedback and clarification provided by the teacher.

a. First Treatment

In the first session, students focused on identifying the main idea of the animated movie clip. The teacher guided students to understand the central message of the conversation by highlighting the topic and the key points presented in the clip. After watching, students answered guiding questions about the storyline and the characters, helping them strengthen their comprehension to capture the overall meaning of spoken text.

b. Second Treatment

During the second session, the activity centered on recognizing specific details from the animated clip. Students listened for important information such as names, numbers, places, and actions. They then completed a "fill in the missing information" worksheet based on what they heard. This activity was followed by a group discussion, allowing students to verify their answers and clarify any unclear details collaboratively.

c. Third Treatment

In the third session, students practiced making inferences from context. They watched the animated clip without subtitles and were encouraged to infer meaning based on tone, facial expressions, emotions, and the speaker's intention. Students then answered inference-based questions and shared their interpretations with the class. This activity trained them to go beyond literal understanding and interpret implied meanings.

d. Fourth Treatment

The final session focused on developing students' overall listening comprehension. After watching the last animated clip, students completed a series of tasks, including summarizing the content, matching dialogues to the appropriate characters, and answering a comprehension quiz related to the entire story. These activities integrated all previously practiced skills main idea identification, detail recognition, and inference-making helping students demonstrate comprehensive understanding of the audiovisual material.

3. Post-Test

After completing the treatment, students will take a post-test consisting of the same 20 validated questions used in the pre-test. According to Creswell (2012), a post-test is an essential instrument in pre-experimental research, as it allows the researcher to measure the effects of the treatment and determine whether any significant changes in learning outcomes have occurred. Using the same set of questions ensures that the comparison between pre-test and post-test scores is valid and reliable, providing an accurate assessment of students' improvement. The post-test will cover the same listening comprehension components as the pre-test: a) understanding the main idea, b) recognizing specific details, and c) making inferences, in line with Brown's (2001) framework for evaluating listening skills. Administering the post-test after the intervention enables the researcher to quantify the impact of using animated movie clips on students' listening comprehension and evaluate the effectiveness of the treatment systematically.

D. Research Site and Participants

The research will be conducted at SMPN 63 Bandung, a public secondary school located in Bandung. The school is selected because it provides a representative sample of Indonesian junior high school students, with diverse English proficiency levels. Participants will consist of approximately 35 students from one eighth-grade class.

E. Research Instrument and Procedures

The main research instrument used in this study is a listening comprehension test. Initially, the researcher will prepare 40 multiple-choice questions designed to assess students' abilities to identify main ideas, recognize specific information, and infer implied meanings from conversations or narratives. These 40 questions will undergo a tryout phase to evaluate their validity and reliability. After the tryout, 20 valid and reliable questions will be selected and used for both the pre-test and post-test.

The research procedure begins with preparing the listening comprehension questions, conducting a tryout to determine the validity and reliability of the items, and selecting 20 appropriate questions. After that, the researcher will administer the pre-test to assess students' initial listening comprehension skills. Following the pre-test, the students will receive four treatment sessions using selected animated movie clips, focusing on different aspects of listening such as identifying the main idea, recognizing specific details, making inferences, and summarizing information. Each treatment session includes watching a clip, answering comprehension questions, participating in discussions, and completing listening exercises. After completing all treatment sessions, the researcher will administer the post-test to evaluate improvements in students' listening comprehension. The collected data will then be analyzed statistically to measure the effectiveness of the animated movie clips as a learning medium.

F. Data Analysis

The data analysis in this study will follow a systematic procedure to ensure the accuracy and reliability of the results. First, the validity of the research instrument will be evaluated to confirm that the pre-test and post-test items accurately measure students' listening comprehension. Next, reliability testing will be conducted to ensure consistency of the instrument, typically using Cronbach's alpha or other reliability coefficients. After confirming that the instrument is valid and reliable, the data will be examined for normality to determine whether the scores are normally distributed, and for homogeneity to ensure that variances between pre-test

and post-test groups are similar. Following these preliminary tests, a hypothesis test will be performed using a paired-sample t-test to determine whether there is a statistically significant improvement in students' listening comprehension after the treatment. Finally, the N-gain score will be calculated for each student to measure the magnitude of improvement, providing a detailed understanding of the effectiveness of using animated movie clips as a learning media. All analyses will be conducted using SPSS software to ensure precision and consistency in the interpretation of the results (Creswell, 2012).

1. Validity Test

The validity test is carried out to measure an instrument that will be used in research. The instrument that has been prepared in accordance with the material to be studied needs to be tested to ensure that the research instrument really measures what should be measured, so that the results obtained can be trusted and in accordance with reality (Budiastuti & Bandur, 2018). The validity test in this study is to test 40 listening comprehension questions that will be measured and used as research instruments in the form of pre-test and post-test. The interpretation of the validity test can be seen from the Pearson correlation value or Sig. (2-tailed) with a probability of 0.05.

The basis for decision making in the validity test based on Pearson correlation is:

a. If the value of rxy > rtable, then the item is valid.
b. If the value of rxy < rtable, then the item is invalid.

The basis for decision making based on comparing the Sig. (2-tailed) with probability 0.05:

a. If the Sig. (2-tailed) < 0.05 and the Pearson Correlation is positive, then the item is valid.
b. If the Sig. (2-tailed) < 0.05 and the Pearson Correlation is negative, then the item is invalid.
c. If the Sig. (2-tailed) > 0.05, then the item is invalid.

The criteria for interpreting the degree of validity (Sudrajat, 2024):

Table 3.3 Test Validity Level Criteria

P.Correlation	Criteria
0.80 < r_{xy} < 1.00	Very High
0.60 < rxy < 0.80	High
0.40 < rxy < 0.60	Medium
0.20 < rxy < 0.40	Low
0.00 < rxy < 0.20	Very Low

2. Reliability Test

Reliability is a data analysis that aims to measure the consistency of the score results on the items contained in the research instrument (Budiastuti & Bandur, 2018). The instrument can be considered reliable if the respondents' answers are consistent over time. The basis for making reliability test decisions is as follows (V. Wiratna Sujarweni, 2014):

a. If the Cronbach's Alpha value > 0.60, the instrument is reliable.
b. If the Cronbach's Alpha value < 0.60, the instrument is unreliable.

The criteria for the test reliability coefficient (Sudrajat, 2024):

Table 3.4 Test Reliability Coefficient Criteria

P. Correlation	Criteria
0.90 < r_i < 1.00	Very High
0.70 < r_i < 0.90	High
0.40 < r_i < 0.70	Medium
0.20 < r_i < 0.40	Low

$r_i < 0.20$	Very Low

3. Descriptive Statistics

Descriptive statistics are used in this study to summarize and present the basic features of the data obtained from the pre-test and post-test, providing an initial overview of students' listening comprehension scores. This includes measures such as the mean, median, minimum, maximum, standard deviation, and range, which help the researcher understand the distribution and central tendency of the data (Creswell, 2012). According to Ary, Jacobs, and Sorensen (2010), descriptive statistics are essential for organizing and simplifying complex data sets, making it easier to interpret overall trends and patterns before conducting inferential analyses. Supporting this, Best and Kahn (2016) explain that descriptive statistics allow researchers to identify variations in participants' performance, detect outliers, and assess the general effectiveness of an intervention. By analyzing the mean and standard deviation of pre-test and post-test scores, the researcher can observe whether there are observable improvements in listening comprehension and gain preliminary insights into the impact of using animated movie clips as a learning medium. In this way, descriptive statistics provide a foundation for more advanced analyses, such as paired-sample t-tests and N-gain calculations, ensuring that the study's findings are both interpretable and meaningful.

4. Inferential Statistics

Inferential statistics are used in this study to draw conclusions about the effectiveness of using animated movie clips on students' listening comprehension based on the sample data. Before conducting hypothesis testing, the data will be examined for normality to ensure that the distribution of scores meets the assumptions required for parametric tests, and reliability testing will be performed to confirm the consistency of the instrument. According to Creswell (2012), ensuring normality and reliability is essential for producing valid and trustworthy results. After these preliminary checks, a paired-sample t-test will be applied to compare the mean scores of the pre-test and post-test, determining whether the

observed differences are statistically significant. This method allows the researcher to infer whether the treatment had a real effect on the population from which the sample was drawn. By using inferential statistics, the study can not only describe students' listening performance but also provide evidence on the impact of animated movie clips on listening comprehension in EFL contexts.

a. Normality Test

This study will use the Shapiro-Wilk normality test to examine whether the data obtained from the pre-test and post-test are normally distributed, as this test is considered suitable for small sample sizes, specifically when the number of respondents is fewer than 50. According to George and Mallery (2016), the Shapiro-Wilk test provides a statistical basis for determining normality by generating a significance value (p-value) that indicates whether the distribution of the data deviates significantly from a normal distribution. If the p-value is greater than 0.05, the data can be considered normally distributed, allowing the use of parametric statistical tests such as the paired-sample t-test. Conversely, if the p-value is less than 0.05, the data are not normally distributed, suggesting the need for non-parametric alternatives.

The normality test is a critical step in the data analysis process because many inferential statistical procedures, including t-tests and ANOVA, assume normality of the data; violating this assumption may lead to inaccurate conclusions. By applying the Shapiro-Wilk test, the researcher ensures that the subsequent statistical analyses are valid, reliable, and capable of accurately assessing the effectiveness of the treatment on students' listening comprehension.

1. If the value (Sig.) > 0.05, then the data is normally distributed.
2. If the value (Sig.) < 0.05, then the data is not normally distributed.

b. Homogeneity Test

A parametric test, namely One-Way ANOVA, will be used to examine the homogeneity of variance among the data, ensuring that the variability of scores across groups is similar. According to Widiyanto (2010), the homogeneity test is

essential in inferential statistics because many parametric tests, including the paired-sample t-test, assume that the variances of the groups being compared are equal. The decision-making basis is determined by the significance value (p-value) obtained from the ANOVA test: if the p-value is greater than 0.05, the data are considered homogeneous, indicating that the variance across groups does not differ significantly; if the p-value is less than 0.05, the data are not homogeneous, suggesting that the assumption of equal variances is violated.

Conducting a homogeneity test is crucial for maintaining the validity of subsequent statistical analyses, as unequal variances can lead to biased or inaccurate results. By ensuring homogeneity, the researcher can confidently proceed with parametric tests to evaluate the effect of the treatment on students' listening comprehension.

1. If the Sig. value > 0.05, then the data is homogeneous.
2. If the Sig. value < 0.05, then the data is not homogeneous.

c. Hypothesis Testing (Paired Sample T-Test)

According to Creswell (2018), a hypothesis is a temporary conjecture or statement that proposes a relationship between variables, which is then tested through research in order to build or support a theory. In experimental and pre-experimental research, hypotheses provide a clear focus for data collection and analysis, guiding the researcher in evaluating whether the proposed intervention has the intended effect. In this study, the hypotheses are formulated to examine the effectiveness of using animated movie clips in improving students' listening comprehension. Based on this purpose, the study proposes the following hypotheses:

1. (H0): The use of animated movie clips is not effective in improving students' listening comprehension.
2. (Ha): The use of animated movie clips is effective in improving students' listening comprehension.

If the data is normally distributed and homogeneous, a paired sample t-test is used to see the average difference between pre-test and post-test results. According to Santoso, S. (2014), the basis for decision-making is:

1. If tcount > ttable, then H0 is rejected, and Ha is accepted.
2. If tcount < ttable, then H0 is accepted, and Ha is rejected.

d. N-Gain

The normalized gain, or n-gain, is a metric used to measure how effective a learning intervention is by comparing students' performance before and after receiving instruction. As explained by Hake (1998), the n-gain represents the proportion between the actual improvement (the difference between the post-test and pre-test scores) and the maximum improvement possible (the difference between the perfect score and the pre-test score). This calculation helps show how much students learned relative to the learning opportunities available. The n-gain can be computed using the following formula:

$$\frac{PostTest\ Score - PreTest\ Score}{100 - PreTest\ Score}$$

Furthermore, n-gain scores are classified to indicate the degree of learning progress. Hake (1998) outlines three levels of interpretation: a score of 0.70 or above reflects a high category, showing substantial learning gains and suggesting that the instructional method was highly effective. Scores ranging from 0.30 to 0.69 fall into the medium category, indicating a moderate improvement. Meanwhile, scores below 0.30 are considered low, suggesting that the intervention produced minimal learning gains. The categorization is summarized in the table below:

Table 3.5 N-Gain Categorization (Hake, 1998)

Range	Categorization
> 0.7	High
0.3 – 0.7	Medium
< 0.3	Low

G. Research Schedule

The researcher started to conduct research at Junior High School in Bandung in October to November 2025. The schedule for this research is presented in the table below.

Table 3.6 Research Schedule

No	Date	Activity
1	**2 October 2025**	**Pre-Test**
2	**9 October 2025**	**Treatment**
3	**16 October 2025**	**Treatment**
4	**23 October 2025**	**Treatment**
5	**30 October 2025**	**Treatment**
6	**6 November 2025**	**Post-Test**