

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study utilizes a pre-experimental design with a quantitative approach, which is considered appropriate for investigating the impact of TikTok videos on students' English listening comprehension. The design focuses on measuring the effectiveness of an intervention by comparing the results of pre-test and post-test within the same group of participants. This allows the researcher to observe any measurable change in students' listening skills before and after the implementation of TikTok-based learning activities. This design is particularly suitable given the objective of the study, which is to determine whether TikTok can significantly improve listening comprehension. By using pre- and post-tests, the study can provide concrete, numerical evidence of learning gains. This approach enables the researcher to assess the effectiveness of the intervention in a controlled and focused manner, even without a comparison group. Moreover, the implementation of this design in a real classroom setting helps maintain ecological validity, ensuring that the findings are relevant and applicable to real-world teaching environments.

3.2 Research Subject and Setting

The subject for this research includes eighth graders from SMP Muhammadiyah 1 Surabaya, an

Indonesian junior high school. This was chosen institution because it is a typical Indonesian learning institution that has been receptive to the use of technology in its teaching processes. Only one class will be utilized in the research as the experimental class, This class will each have around 25 students to ensure a reasonable sample size of data for analysis and collection. The research is targeted at eighthgrade students since they are at a level where listening comprehension skills are highly necessary for their overall language acquisition, and they are most likely to be familiar with online platforms such as TikTok.

3.3 Data and Sources of Data

3.3.1 Data

The primary data for this study will be derived from both pre-test and post-test listening comprehension scores to measure students' listening skills before and after the intervention. The experimental groups will take identical pre-tests to establish baseline listening abilities, followed by post-tests after the intervention period to assess improvement. The tests will use multiple-choice questions based on authentic audio materials, including everyday conversations and short narratives, to evaluate comprehension of main ideas, details, and inferences. By comparing pretest and post-test results, the study will determine whether TikTok-based listening activities lead to greater improvement than traditional methods.

3.3.2 Data Sources

The data sources for this study consist of pretest and post-test assessments designed to evaluate students' listening comprehension skills.

The test items are specifically aligned with key aspects of listening skills, including vocabulary recognition, pronunciation understanding, and comprehension of main ideas. The pre-test assesses students' baseline abilities in these areas, while the post-test measures their improvement after the intervention. The listening comprehension test includes various types of questions, such as:

- Vocabulary Recognition: Multiple-choice items that focus on identifying vocabulary in context, allowing students to demonstrate their understanding of words and phrases used in the TikTok videos.
- Pronunciation Understanding: Tasks that require students to identify correct pronunciation from audio clips, helping them to recognize and differentiate between various sounds and accents.
- Comprehension of Main Ideas: Short answer questions that require students to summarize the main ideas presented in the videos, assessing their ability to grasp the overall message and key points.
- Detail Comprehension: Questions that ask students to recall specific details or information from the videos, testing their ability to listen for and understand finer points of the content.

By targeting these specific listening skills, the study aims to provide a comprehensive evaluation of the effectiveness of TikTok videos in enhancing students' overall listening comprehension. This targeted approach ensures that the assessment accurately reflects the various dimensions of listening comprehension that are critical for language acquisition.

3.4 Research Instrument

This research used two instruments: a listening comprehension test and a TikTok-based teaching module. The listening test was made based on the English curriculum for eighth-grade students. It was created to measure students' ability to understand the main idea, specific details, and simple inferences from listening texts. At first, the test had 30 multiple-choice questions. To check if the test was good, it was tried out with students from another class. Then, the results were analyzed using SPSS software. The analysis showed which questions were valid, and 25 valid questions were used in the final test.

The reliability analysis of the test instruments utilized in this study is conducted using Cronbach's alpha, which measures the internal consistency of the assessment items. The results indicate a Cronbach's alpha of 0.889 for the pre-test and 0.916 for the posttest, both of which are considered acceptable and indicate a high level of reliability. According to George and Mallery (2003), a Cronbach's alpha value above 0.7 is generally acceptable, while values above 0.9 indicate excellent reliability.

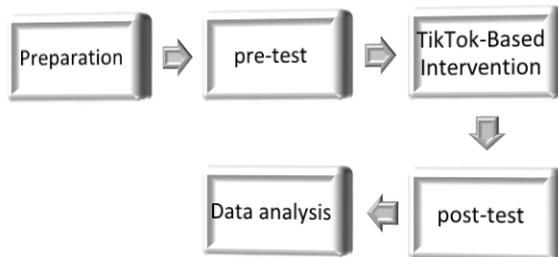
In the context of this study, these values suggest that the test items consistently measure the same construct listening comprehension across different administrations. This is particularly important for novice researchers, as it provides confidence that the assessment tools used are reliable and can accurately reflect students' listening skills. For novice researchers, understanding the significance of these values is crucial. A Cronbach's alpha of 0.889 indicates that there is a

high degree of agreement among the items in the test, meaning that they are all measuring aspects of listening comprehension effectively. Similarly, a value of 0.916 for the post-test suggests that the items used after the intervention are also highly reliable. This high level of internal consistency means that the results obtained from these tests can be trusted to reflect true changes in students' listening abilities, rather than random measurement error.

Ensuring reliability is crucial for the validity of the study's findings, as it strengthens the argument that any observed changes in listening comprehension can be attributed to the intervention rather than inconsistencies in the measurement tools. By establishing a reliable assessment instrument, this study aims to provide robust evidence regarding the effectiveness of TikTok videos in enhancing students' listening comprehension skills

The second instrument was a teaching module that used TikTok videos as learning materials. This module included a step-by-step guide for teachers, a list of selected videos suitable for students' age, and listening activities such as pre-listening, whilelistening, and post-listening tasks. The questions after each video were made to check students' understanding and to support their listening skills. This module helped the teacher in delivering the lesson and also supported the data collection during the research.

3.5 Research Procedure



3.5.1 Preparation Phase

- **Permission and Ethical Clearance:** Formal approval was obtained from the school's principal and English teachers. Informed consent forms were distributed and collected to ensure ethical compliance.
- **Teaching Module Development:** A teaching module was created using selected TikTok videos along with supporting activities and exercises.
- **Test Development:** The pre-test and post-test instruments were created to assess listening comprehension. All questions were in multiple-choice format and targeted three main indicators: main idea, detail, and inference.
- **Validation Process:** The instruments and teaching module were validated by expert lecturers using a Likert scale rubric assessing aspects such as content relevance, clarity,

difficulty level, and time allocation. Revisions were made based on feedback.

- Try-Out Test: try-out was conducted with other eighth-grade students who were not part of the research class. The aim was to find out if the students understood the instructions and if the questions were too easy or too difficult. After that used SPSS to check the validity and reliability of the test. From the 30 original questions, only 25 questions were valid and used in the final test.

3.5.2 Pre-Test Phase

In the pre-test phase, the 25 valid questions were given to the experimental class before the intervention. This test was used to measure the students' listening skills before using TikTok in the classroom. The scores from this test were used as the baseline for comparison. In the intervention phase, the students were taught using TikTok-based materials. They watched selected TikTok videos and answered questions from the teaching module. These learning sessions were done during regular English lessons.

3.5.3 Intervention Phase

In the intervention phase, the students were taught using TikTok-based materials. They watched selected TikTok videos and answered questions from the teaching module. These learning sessions were done during regular English lessons.

3.5.4 Post-Test Phase

After the intervention, the students were given the same test again in the post-test phase. The purpose of the post-test was to find out if there was any improvement in their listening comprehension.

3.5.5 Data Collection and Analysis

The results from the pre-test and post-test were collected and analyzed. The data were used to determine whether there was any significant improvement in students' listening comprehension after the intervention.

3.6 Data Analysis

The data collected from the pre-test and post-test will be analyzed using quantitative methods. The goal is to see how effective the TikTok-based learning activities are in helping students improve their listening comprehension. The data analysis will follow several steps.

3.6.1 Descriptive Statistics

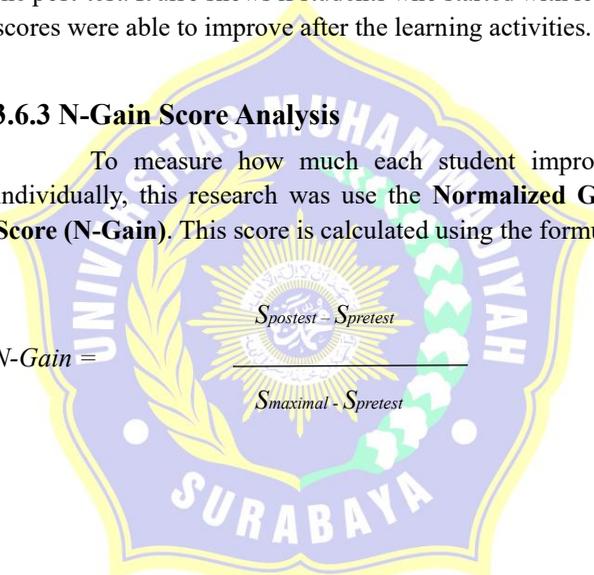
Descriptive statistics will be used to give a general overview of the students' performance. This includes calculating the mean, which shows the average score; the standard deviation, which shows how different the scores are from the average; and the minimum and maximum scores, which show the lowest and highest student results.

3.6.2 Inferential Statistics

To find out if the improvement in students' scores is statistically significant, a paired sample t-test will be used. This test compares the same group of students before and after the intervention. In addition, a paired sample correlation will be done to check the relationship between students' pre-test and post-test scores. This tells us if students who scored higher in the pre-test also did well in the post-test. It also shows if students who started with lower scores were able to improve after the learning activities.

3.6.3 N-Gain Score Analysis

To measure how much each student improved individually, this research was use the **Normalized Gain Score (N-Gain)**. This score is calculated using the formula:


$$N\text{-Gain} = \frac{S_{postest} - S_{pretest}}{S_{maximal} - S_{pretest}}$$

According to Hake (1999), the N-Gain scores are interpreted like this:

- **High gain** if $N\text{-Gain} > 0.7$
- **Moderate gain** if $0.3 < N\text{-Gain} \leq 0.7$
- **Low gain** if $N\text{-Gain} \leq 0.3$

This analysis helps how much each student improved. It also shows whether the TikTok-based learning method helped most students or only a few.

