CHAPTER III
METHODOLOGY

3.1 Research Design

This study aims to investigate the effectiveness of Problem-Based Learning (PBL) in improving students' listening skills and motivation in SMP Negeri 3 Gresik. SMP Negeri 3 Gresik was chosen because the students of SMP Negeri 3 Gresik has limited motivation in learning English, meanwhile this school is one of the favorite schools in the center of Gresik city. Utilizing a mix-methods approach, this study combines quantitative and qualitative data collection techniques. The quantitative component employs a pre-experimental design, while the qualitative component involves questionnaires to gain deeper insights into students' experiences and perceptions.

3.2 Population and Sample

The population for this study includes 280 grade 7 students from SMP Negeri 3 Gresik. From this population, class I, consisting of 30 students, was taken as the sample (purposive sampling). This class was identified as having low motivation in learning English, particularly in listening, which aligns with the focus of this research.

3.3 Data Collection and Instruments

To measure the impact of PBL with YouTube media on students' listening and motivation skills, both pre-tests and post-tests administered. The tests are matched with the syllabus used in the schools, standardized A1 levels listening comprehension with CEFR (Common European Framework of Reference for Languages) from British Council. Additionally, questionnaires distributed to gather qualitative data on students' motivation and their perceptions of the PBL with YouTube media approach.

The pre-test and post test evaluate listening comprehension A1 levels which refers to the material in the syllabus through multiple-choices and gap fill questions. The PBL with YouTube media approach was implemented in experimental group with over a period of 4 weeks with 8 meetings. The questionnaires with likert-scale questions was created based on indicators of motivation in learning from Uno (2008). There are 6 indicators :

1. Desire and Will to Succeed :

   Students are motivated to achieve and succeed, it can push them to reach the goal.

2. Needs and Motivations in Learning :

   Motivation is important to reach the goal, control learrning behaviors and engagement.

3. Hopes and Aspirations for the Future :

   Future or career goals can enhance motivation for students to study harder.

4. Awards in Learning :

 Rewards such as grades or appreciation from teachers can increase students' motivation.

5. Interesting Activities in Learning :

Engaging, interactive, and enjoyable learning activities increase students' motivation.

6. Conducive Learning Environment :

A positive environment can maintain motivation, making students feel comfortable and feel free to explore and learn

The questionnaire was designed from indicators of Uno (2008) described from each indicators into 5 part of statements for students according to Problem-Based Learning(PBL) with YouTube media to improve students' listening skills and motivation.

3.4 Data Analysis

This study uses a mixed-methods approach, where quantitative data is analyzed to measure the statistical impact of Problem-Based Learning (PBL) with YouTube on students' listening comprehension, and qualitative data is used to provide a richer motivation of students' perceptions. In the context of educational research, Creswell (2021) describes 4 types of mixed-method designs:

1. Convergent Parallel Design: Both quantitative and qualitative data are collected simultaneously, analyzed separately, and then compared.

2. Explanatory Sequential Design: Quantitative data is collected first, followed by qualitative data to help explain initial findings.

3. Exploratory Sequential Design: Qualitative data is collected first to explore an issue, followed by quantitative data to confirm or expand on initial findings.

4. Embedded Design: Quantitative and qualitative data are collected together, but one approach is secondary.

This study adopts the Explanatory Sequential Design, where quantitative data from pre-experimental measures is analyzed first, followed by qualitative data from survey of questionnaires. This allows the researcher to validate the quantitative results and gain deeper insights into students' experiences.

3.4.1 Listening Analysis

For the listening analysis, data comes from pre-test and post-test scores, which were collected before and after the treatment. To start, we calculate basic statistics for these scores. We first look at the mean, or average score, to see if students' listening skills improved on the post-test. If the post-test mean is higher, this suggests a general improvement. After calculate the mean, we calculate the standard deviation, which shows how similar or different the

scores are across all students. A lower standard deviation would indicate that students' scores are closer together, suggesting that the PBL with YouTube approach worked consistently across the group.

To confirm if this observed improvement is statistically significant we use a statistical test called the paired-sample t-test. This test compares each student's pre-test and post-test scores to see if there's a meaningful difference. We set a significance level of 0.05, which means we are looking for a p-value (result from the test) below this level. If the p-value is below 0.05, it indicates a statistically significant positive effect in students' listening skills, suggesting that the treatment was effective.

3.4.2 Motivation Analysis

For the motivation analysis, we use survey data collected from questionnaires filled out by students. These responses provide insight into students' experiences and motivations with the PBL and YouTube approach. First, we organize and review the responses, identifying common themes, such as increased interest in listening or the relevance of using YouTube for language learning. The researcher test the item of questionnaire first and test the validity and reliability.

After that we analyze the mean of responses from students. This analysis gives context to the quantitative results, helping us understand why the treatment may have worked. For example, if many students report feeling more engaged due to the YouTube videos, it supports the idea that PBL with multimedia has a positive effect on motivation and learning outcomes.

By combining the quantitative and qualitative findings, this study provides a well-rounded picture of the impact on both students' listening skills and their motivation, highlighting both statistical improvements and personal experiences.