

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses the research methodology. It consisted of research method, population and sample, research instrument, technique of data collection and technique of data analysis.

3.1 Research Method

The method that used is a quantitative approach. This quantitative research used numerical and statistical data to analyze the improving of critical reading skill use Listen-Read-Discuss strategy. The quantitative approach is a research method that prioritizes the collection and analysis of numerical data to obtain objective and measurable results. According to Sugiyono (2017) quantitative research method is a research method based on the philosophy of positivism, used to research certain populations or samples, data collection using research instruments, data analysis is quantitative or statistical, with the aim of testing the established hypothesis.

In this research, researcher conducted experimental research to prove the hypothesis. Experimental method is a systematic and scientific procedures to approach and steps followed in a research study to conduct experiments, gather data, and analyze results.

3.2 Research Design

The model of this experimental design "One Group Pretest-Posttest". According to Nunan (2002), the characteristic of pre-experimental design is may

have pre-test and post-test without a control group. In conducted the research, the researcher used one class of the year students at SMA N 5 Banda Aceh.

To know the significant difference of student's improvement, in the first meeting, the researcher gave a pre-test to the students in order to know their ability before doing the treatment. Then, the researcher taught the students using LRD strategy during the treatment. She explained and teaches and trains the students to find out more about critical reading. Then, the researcher conducted six meetings at SMA Negeri 5 Banda Aceh. At the end, the students were given a post-test in order to know their ability after applying LRD strategy.

This design involved one group which is pretest (O1), exposed to a treatment (X), and posttest (O2). The design is be presented as follows:

O1 X O2

Where:

O1: Pretest

X: Treatment

O2: Posttest

Source: Sugiyono (2013)

3.3 Population and Sample

The population of the study is the students of the first-grade students at SMA N 5 Banda Aceh which consisted of 285 students and eight classes, starting with X1 to X8.

Based on the population, researcher used purposive sampling to select samples. The researcher took one class from the population, namely class X3 which consisted of 36 students. Class X3 was chosen because its students were considered to have characteristics that represented the entire population. In addition, students in this class are considered to have good or superior abilities in these subjects. The teacher also recommended class X3 as the research sample because it was considered appropriate to the needs and objectives of the research.

3.4 Research Instrument

Arikunto (2010) stated that research instrument is a device used by the researcher while collecting the data in order to make the researcher easier to get the result. It can be concluded to obtain this data the researcher prepared an instrument, namely a set of reading teaching tests using Listen-Read-Discuss (LRD).

According to Arikunto (2010), a test can be used to measure basic ability, achievement, and intelligence. The researcher gives two types of tests in this research, namely pre-test and post-test. Pre-test is used before treatment. The researcher gives a post-test after carrying out the treatment. The researcher gives a pre-test to students by asking around 20 questions. And for the post-test the

researcher also gives 20 questions. The researcher chooses questions related to the material.

Critical reading has several techniques such as analyzing, interpreting, and evaluating. Questions that will arise when we read the text critically (Tasnimi, 2017):

1. The author's purpose:

- Why has the author written the material?
- Are these purposes explicitly stated?
- Are there other implicit purposes?
- For whom is the material intended?

2. The author's approach

- What evidence, examples or explanations are used to support the thesis?
- Are the supporting evidence, examples and explanations well researched and accurate?
- What evidence, examples or explanations are used to support the thesis?
- How do the contents relate to what you know about the topic?
- Which of your questions about the subject does the author answer? Which are not answered?
- Do any items puzzle or intrigue you?

Some of the questions above will help you to analyze the text or evaluate it in detail. Not all of them will be relevant to all your reading; you need to keep your purpose in mind. Answering the questions on the author's approach and the

questions author purposes with content should provide a good understanding of what the text contributes to the topic.

3.5 Technique of Data Collection

In collecting the data, the researcher gives pretest before giving treatment, and the last is post-test.

1. Pretest

Before conducting the treatment, the researcher gave a pretest on the first day to measure the students' prior knowledge of critical reading. The pre-test consisted of 20 questions which talk about text of critical reading, and the form of the test was multiple choice, essay, and true false question. The researcher distributes the question paper to the students, and the researcher ask the students to answer the questions.

2. Treatment

The treatment starts after the pretest given to the students. The researcher used Listen-Read-Discuss strategy to treat the students. The researcher conducted the treatment four times and conduct for 2x45 minutes for each meeting at SMAN 5 Banda Aceh. The first meeting, the research introduced herself to the students and informed the about the purpose of this experiment and pretest. After that, for the second meeting, the research starts with material using the Listen-Read-Discussion strategy and the aim is to improve their critical reading skills as well as in subsequent meetings. In the last meeting the researcher will give the post-test to know what the result.

3. Post-test

After doing the treatment, the researcher gave post-test in order to finding out the significant result after implemented the treatment by used Listen-Read-Discuss strategy in critical reading. Although the Listen-Read-Discuss strategy followed the same procedure as the pretest, the researcher used different question sets in each test. Both assessments employed the same format—multiple-choice, essay, and true/false—and each contained twenty items, matching the structure of the pretest. Finally, the scores obtained from the post-test will be analyzed.

3.6 Technique of Data Analysis

After collecting the data by conducting pre-test, treatment, and post-test, then the researcher focuses on data analysis. In analyzing the data of pre-test and post-test, the researcher used 20 questions, the score was 100 points. In this research, the researcher used the statistical formula by following the steps below:

3.6.1 Mean

Finding out the mean score by used the following formula:

$$X = \frac{\sum x}{N}$$

Where:

X : Mean

$\sum x$: Total Score

N : The total number of students

Source: Arikunto (2006)

This formula for calculating the mean or average is a simple statistical method and is often used to determine the average value of a number of data. This formula adds up all the data ($\sum X$) and divides the result by the number of items (N).

3.6.2 Normality Test

According to Ghasemi and Zahediasl (2012), the Shapiro-Wilk test is more appropriate for small sample sizes ($n < 50$) because it has greater statistical power than the Kolmogorov-Smirnov test. Therefore, before conducting the hypothesis test, a normality test was performed using the Shapiro-Wilk method to ensure that the data were normally distributed. If the significance value (Sig.) was greater than 0.05, the data were considered normally distributed, allowing for the use of parametric tests.

As supported by Siregar (2018) statement about the degree of normality test:

Ho (Null Hypothesis) is rejected if probability of significant value < 0.05

Ha (Alternative Hypothesis) is accepted if probability of significant value > 0.05

3.6.3 Hypothesis Test (Paired Sample t-Test)

To examine whether there was a significant difference between the students' pre-test and post-test scores after being taught using the Listen-Read-Discuss (LRD) strategy, a paired sample t-test was used. This test is appropriate when comparing two related samples, such as scores taken from the same group before and after a treatment.

The hypotheses in this study were formulated as follows:

Null Hypothesis (H₀): There is no significant difference between the students' pre-test and post-test scores after being taught using the LRD strategy.

Alternative Hypothesis (H_a): There is a significant difference between the students' pre-test and post-test scores after being taught using the LRD strategy.

The decision rule is based on the comparison between the t-observed value and the t-table with a significance level of 0.05. If the absolute value of the t-observed is greater than the t-table, then the null hypothesis is rejected, which indicates that the LRD strategy has a significant effect on students' critical reading skills.

3.6.4 Scoring Formula

To score the students' answer of test, the researcher used the following formula.

$$\text{Score} = \frac{x}{n} \times 100$$

Where: X = student's correct answer

N = maximum score

Source: Gay (1981)

This formula is used to calculate students' scores based on the number of their correct answers compared to the maximum score. The score is calculated as a percentage to make it easier to analyze.

3.6.5 Classification of students score

Table 3.1 Classification Score

No.	Classification	Score
1.	Excellent	86-100
2.	Good	71-85
3.	Fair	56-70
4	Poor	41-55
5.	Very Poor	0-40

Source: Arikunto (2009)

This classification of student scores is used to categorize their level of achievement based on the scores obtained from pre-test and post-test. The following is an explanation for each category:

a. Excellent (86-100)

This category shows a very good level of student achievement. Students in this group are able to answer almost all questions well, which shows a deeper understanding and a very high level of mastery of the topic.

b. Good (71-85)

Students in this category have a good understanding of the material. Although there may be some minor errors, overall, they show good performance.

c. Fair (56-70)

This category shows that the student's skills are good enough, but there is still scope for improvement. Students in this group show a fundamental understanding of the course material, but may lack rigor or have not fully mastered the material.

d. Poor (41-55)

Students in this category have low academic performance. They show struggle in understanding the material and need additional mentoring to improve.

e. Very Poor (<40)

This category indicates that students have serious difficulties in understanding the material. Their achievement is very low, and more intensive educational interventions are needed to help them.