

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses about method of the research, population and sample, technique for collecting the data, technique for analyzing the data.

A. Method of the Research

This study employs a quantitative research method with a descriptive approach. Quantitative research focuses on collecting and analyzing numerical data to explain phenomena through statistical analysis (Creswell, 2012). Specifically, this research uses a descriptive design, which is intended to portray an accurate profile of persons, events, or situations as they exist in their natural context.

Descriptive quantitative research does not attempt to influence or manipulate variables, but instead aims to describe and interpret existing conditions. According to Creswell (2017), descriptive research is designed to gather information that describes the characteristics, behaviours, or opinions of a particular population. It typically involves data collection through structured instruments such as questionnaires or surveys, which allow researchers to measure variables and summarize the results statistically.

The main purpose of this descriptive approach is to identify and analyze the challenges students face in learning grammar. By collecting quantitative data from a sample of students, this research aims to provide a clear and measurable understanding of the common challenges related to grammatical knowledge.

This approach is particularly useful for highlighting patterns and trends in students' responses, which can help educators and researchers develop effective

teaching strategies. As Neuman (2014) suggests, descriptive quantitative studies are ideal for mapping out “what exists” in a population and for making comparisons across groups.

The nature of this approach is non-experimental, meaning that it does not involve manipulation of variables or intervention by the researcher. Instead, it is observational, focusing on measuring and describing what is already occurring in the educational setting. The data are collected at one point in time (cross-sectional) and analyzed statistically to draw conclusions.

This study fits within that framework, as it seeks to collect data through structured questionnaires from English education program students at Baturaja University and present findings in the form of frequencies, percentages, and averages. This enables the researcher to generalize the results to the larger student population within that context.

1. Operational Definition

In this study, several key terms are used that require clear operational definitions to ensure clarity and consistency in interpretation:

- *Students' Challenges* refer to the obstacles, challenges, or problems faced by students in acquiring grammatical knowledge in English. These challenges may include lack of motivation, limited vocabulary, challenges in recognizing grammatical functions, ineffective learning strategies, and limited access to learning resources.
- *Grammatical Knowledge* is defined as the understanding and internalization of English grammar rules, including sentence structures, verb tenses, parts

of speech, and their correct application in both spoken and written communication.

- *Analysis* involves systematically identifying and categorizing the types and causes of students' challenges in acquiring grammatical knowledge based on their experiences, responses, and performance.

2. Place of Research

This research was conducted at Baturaja University, located at Jl. Ratu Penghulu No. 2301, Kec. Baturaja Timur, Kabupaten Ogan Komering Ulu, South Sumatra. The university was selected as the research site due to its relevance and accessibility for investigating students' challenges in acquiring grammatical knowledge. Baturaja University hosts a diverse population of English language learners from various backgrounds, making it an appropriate setting for the study.

B. Population and Sample

1. Population

According to Creswell (2012, p. 142) defines a population as a group of individuals who have the same characteristic. According to Arikunto (2016) population is a group of element or cases, other individuals, object or event that become research focus. The population of this research were all of the English educational program students at Baturaja University. The details as follow:

Table 3.1
Population of the Research

No	Class	Number of Population
1.	Semester 2	30
2.	Semester 4	26
3.	Semester 6	22
4.	Semester 8	15
Total		93

Source: Faculty of Teacher Training and Education at Baturaja University 2025/2026

2. Sample

According to Creswell (2012, p. 142) Sample is a subgroup of the target population that researcher plans to study for generalizing about the target population. The sampling technique that was used in this research is convenience sampling method. According to Creswell (2012, p. 145) In convenience sampling the researcher selects participants because they are willing and available to be studied. According to Etikan et al., (2016, p. 2) Convenience sampling (also known as availability sampling) is type of non-probability sampling where members of the target population meet certain practical criteria, such as easy accessibility, geographical proximity, availability at given time, or willingness to participate. Therefore, the researcher employed this sampling technique because the population met these practical criteria, as described by Etikan et al.

In this research, the samples consist of students from semesters 4 and 6 who have learned grammar. The specific details are explained bellow:

Table 3.2
Sample of the Research

No	Class	Number of Population
1.	Semester 4	26
2.	Semester 6	22
Total		48

Source: Faculty of Teacher Training and Education at Baturaja University 2025/2026

This research focused on semester 4 and 6 students of the English Education Program at Baturaja University. Semester 2 students were excluded because they are still in the early stages of the curriculum and have not yet received sufficient instruction in grammar to provide relevant data on grammatical challenges.

Semester 8 students were also not included in the study for practical and academic reasons. At this stage, most students are typically focused on completing their final thesis, internships, or teaching practicum. As a result, they have limited availability and are often less involved in regular coursework. Furthermore, many of them have already completed their main grammar courses, which may affect the immediacy and accuracy of their recall regarding grammatical challenges they experienced during earlier semesters. Therefore, semester 4 and 6 students were selected as the most appropriate samples—they have had adequate exposure to grammar courses and are actively engaged in grammar-related learning activities.

C. Technique for Collecting the Data

Data collection is a critical phase in research and analysis, involving the systematic gathering of information to answer specific question or test hypotheses.

According to Sugiyono (2017, p.193) data collection techniques are the most important step in research, because the main goal in research is to obtain the data.

1. Questionnaire

In acquiring the data, researcher used the questionnaire. According to Brace (2018), a questionnaire is a research instrument consisting of a series of questions designed to collect information from respondents, ensuring consistency and comparability in their responses. Likewise, Creswell (2014) defines a questionnaire in quantitative research as a structured tool used to gather numerical data related to individuals' opinions, attitudes, behaviours, or characteristics.

In this study, the researcher employed a close-ended questionnaire as the primary instrument for data collection. The questionnaire items were adapted from Nawira et al. (2019). The categories of the questionnaire were adopted from Mustakim et al. (2025), who classify grammar challenges faced by students into three namely: cognitive challenges, environmental constrains, and instructional shortcomings. Additionally, Horwitz (2001) and Rezeki and Sagala (2021) highlighted that psychological factors also influence students' challenges in learning. The instrument consisted of 15 close-ended items, each designed to reflect one of these four aspects. These categories correspond with the five specific challenges identified by Akbari (2016, as cited in Nawira et al., 2019), enabling the researcher to analyze the data within a clear and structured framework. The detailed specifications of the questionnaire are presented as follows:

Table 3.3
Specification of Questionnaire

Objective	Indicators	Number of Questions	Total
To identify students' challenges in grammatical knowledges.	Cognitive Challenges	1, 2, 3, 4	4
	Instructional Shortcomings	14, 15	2
	Psychological Factors	5, 6, 7, 8, 9, 10	6
	Environmental Constraints	11, 12, 13	3
Total			15

Source: Adopted based on Mustakim et al. (2025); Horwitz (2001); Rezeki and Sagala (2021).

The research instrument, a structured questionnaire, was delivered using Google Forms to facilitate efficient data collection. The questionnaire link was distributed to participants via WhatsApp, allowing for easy access and response submission. Participants instructed to complete the questionnaire by selecting the appropriate responses using checkmarks (✓) within the provided options.

2. Interview

In addition to the questionnaire, the researcher conducted a set of semi-structured interviews with six students from semesters 4 and 6 in the English Education Program at Baturaja University. The purpose of the interview was to explore more deeply the students perceived grammatical challenges, particularly in the four categories measured in the questionnaire: cognitive challenges, psychological factors, environmental constraints, and instructional shortcomings.

The interview was conducted in Bahasa Indonesia to ensure clarity and comfort. Each participant was asked four simple and direct questions, with one question corresponding to each challenge category. The questions were:

1. *Do you find it difficult to understand grammar rules such as sentence structure and tenses? Why?*
2. *Do you feel nervous, unconfident, or afraid of making mistakes when learning grammar?*
3. *Do classroom conditions or your learning environment make grammar learning difficult?*
4. *Do you think the way grammar is taught is confusing or hard to understand?*

The interview responses were analyzed thematically to identify common patterns and personal experiences that may not have been fully captured by the questionnaire. These qualitative findings were used to support and enrich the interpretation of the quantitative results.

3. Validity of the Instrument

To ensure content validity, the questionnaire used in this study was initially adopted from existing instruments developed in previous research related to grammar learning difficulties. The original items were selected based on their relevance to the four main categories examined in this study: cognitive challenges, psychological factors, environmental constraints, and instructional shortcomings.

After the adoption, the instrument was adapted and refined through expert judgment. Two lecturers from the English Education Study Program at Baturaja University — Novarita, M.Pd. and Merie Agustiani, M.Pd. — were invited to evaluate the questionnaire. As grammar lecturers and experienced researchers, their input focused on the relevance, clarity, and suitability of each item for the study's context and objectives.

Based on their recommendations, several modifications were made, including changes to item wording, sequence, and focus, to better match the academic level and linguistic background of the students. This adaptation process helped ensure that the final instrument accurately measured the students' grammatical challenges within the Indonesian EFL context.

As a result, the final version of the questionnaire was considered valid for data collection. Signed validation sheets and revision notes from both experts are included in the appendix as evidence of the instrument development and approval.

In addition, semi-structured interviews were conducted with six students to enhance the validity of the study. These interviews served as a qualitative triangulation method, providing deeper insight and helping confirm the challenges identified through the questionnaire.

D. Technique for Analyzing the Data

In this research, the researcher formulated the questionnaire based on indicators of students' challenges in acquiring grammatical knowledge. The questionnaire was measured using a Likert scale, where each item offered five

response options, ranging from Strongly Disagree to Strongly Agree. According to Sugiyono (2019), the Likert scale is an effective tool for measuring attitudes, perceptions, and the degree of agreement with statements, making it particularly useful for identifying and quantifying students' perceived challenges. This scale provides a more detailed understanding of the intensity of students' experiences.

In quantitative research, Likert scale responses are typically assigned numerical values to facilitate analysis. For example, responses can be coded as follows:

Table 3.4
Likert Scale Coding

No	Scale	Score
1.	Strongly Disagree	1
2.	Disagree	2
3.	Neutral	3
4.	Agree	4
5.	Strongly Agree	5

To analyze the students' challenges in grammatical knowledge, descriptive statistics was used to summarize and describe the key characteristics of the data collected from the questionnaire. The data analysis aimed to identify which grammar concepts students found most challenging, as well as to understand the general trends in students' perceptions of their grammar challenges. Descriptive statistics, including the mean, median, mode, and standard deviation, were calculated to examine the central tendency, frequency distribution, and variability of students' responses to the questionnaire item.

The mean for each item was calculated using the formula:

$$\bar{x} = \frac{\sum X}{n}$$

Where:

\bar{x} = Sample mean

$\sum X$ = Sum all the sample values

n = The number of respondents

In similar, the standard deviation was computed using formula:

$$s = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n - 1}}$$

Where:

s = Sample standard deviation

x_i = Each value

\bar{x} = Sample mean

n = Number of values in the sample

$n - 1$ = Degrees of freedom

These statistical measures provided insights into the central tendencies and variability of students' responses, facilitating a better understanding of their grammar learning challenges.

Additionally, to understand better about the mean in each item, this research used the interpretation of the mean guided by the following scale:

Table 3.5
Interpretation of Mean Score

Mean Score	Interpretation
1.00 – 1.79	Very Low Challenge
1.80 – 2.59	Low Challenge

2.60 – 3.39	Moderate Challenge
3.40 – 4.19	High Challenge
4.20 – 5.00	Very High Challenge

Sugiyono (2017)

Table 3.5 presents the interpretation criteria for the mean scores derived from the students' responses to the questionnaire. The scale ranges from 1.00 to 5.00, based on a 5-point Likert scale where respondents indicate their level of agreement or experience with each statement related to grammatical challenges.

Table 3.6
Interpretation of Standard Deviation Values

Standard Deviation	Interpretation
0.00 – 0.49	Very Low Variation (High Agreement)
0.50 – 0.99	Low to Moderate Variation
1.00 – 1.49	Moderate to High Variation
1.50 – 2.00	High Variation (Diverse Opinion)

Creswell (2014)

Table 3.6 provides a guideline for interpreting the standard deviation (SD) values obtained from the questionnaire responses. Standard deviation is a statistical measure that indicates how much the responses deviate from the average (mean) score. In this context, it shows the degree of agreement or disagreement among students regarding each questionnaire item.