

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter presents the method and research design, the population and sample, the technique of data collection, also the technique of data analysis.

#### **A. Research Method**

The method use in this research is qualitative method. This study employs a qualitative case study approach to explore students' experiences in using Duolingo as a gamification tool to increase vocabulary mastery. According to Moleong (2021) qualitative research aims to understand phenomena experienced by research subjects, such as behavior, perception, motivation, and action, holistically and descriptively in the form of words and language, in a specific natural context. The qualitative research method was chosen because it allows for an in-depth exploration of students' experiences including their engagement, motivation, and challenges in using Duolingo. Unlike quantitative research that focuses on numerical improvements in vocabulary mastery, this study emphasizes the subjective learning experiences of students, providing a more comprehensive understanding of how gamification influences vocabulary mastery. This approach not only measures vocabulary improvement in numerical terms but also explores how students learn, the challenges they face, and their perceptions of gamification in learning. Furthermore, the qualitative method is adaptable and flexible, allowing for changes in data gathering processes such as in-depth interviews

with students to investigate their perspectives of how gamification in Duolingo affects vocabulary mastery. Triangulation strengthens data validity by combining interviews with students who have used Duolingo, providing a holistic view of their learning experiences. As a result, this strategy matches with the research goal of investigating students' impressions of how gamification in Duolingo contributes to vocabulary mastery, providing a more meaningful and insightful knowledge of the learning process.

## **B. Population and Sample**

### **a. Population**

The first task in selecting a sample is to define the population of interest. According to Bambang (2020) Population is all the elements that form a group of research objects, from which samples can be taken for further research. In educational research the population of interest usually a group of person (students, teachers, or other individuals) who posses certain characteristics. However the population may be defined a group of classroom, schools, or even facilities. The population of this study was the whole of Eighth Grade students of Mts Al Fakhriyah Baturaja class VIII.A until VIII.E with the total number of the students are 118 students.

**Table 1 Research Population**

| <b>No</b> | <b>Class</b>  | <b>Number of student</b> |
|-----------|---------------|--------------------------|
| <b>1</b>  | <b>VIII.A</b> | <b>18</b>                |
| <b>2</b>  | <b>VIII.B</b> | <b>22</b>                |

|              |               |            |
|--------------|---------------|------------|
| <b>3</b>     | <b>VIII.C</b> | <b>19</b>  |
| <b>4</b>     | <b>VIII.D</b> | <b>28</b>  |
| <b>5</b>     | <b>VIII.E</b> | <b>31</b>  |
| <b>Total</b> |               | <b>118</b> |

Source: Mts Al Fakhriyah Baturaja

#### **b. Sample**

The population of this study includes all Eighth Grade students at MTS Al-Fakhriyah (classes VIII.A–VIII.E). However, only class VIII.B which consists of 22 students had prior experience using Duolingo during English lessons. Therefore, class VIII.B was purposively selected as the sample, as it aligns with the goal of exploring students' perceptions of Duolingo as a gamified tool for vocabulary learning. According to Creswell (2012), purposive sampling is appropriate when participants are chosen based on specific characteristics relevant to the research objectives. Selecting students with actual experience ensures the data collected is meaningful and contextually valid.

**Table 2 Sample of the Research**

| <b>Class</b>  | <b>Total Number of student</b> |
|---------------|--------------------------------|
| <b>VIII.B</b> | <b>22</b>                      |

Source: MTs Al Fakhriyah

### **C. Research Instrument**

In qualitative research, the researcher serves as the key instrument Huberman and Saldana (2020). This means that the researcher is directly involved in data collection, interpretation, and analysis. As the primary instrument, the researcher distributed close-ended questionnaires and conducted interviews to explore the participants' perceptions. This role allows for flexibility in the research process, enabling adjustments based on student responses and emerging findings.

In this study, the researcher acted as the key instrument by distributing close-ended questionnaires as the main data collection tool to 22 students, and conducting interviews with 10 students to support and deepen the questionnaire findings. To support this process, structured research instruments such as a set of close-ended questionnaire items and an interview guide were used to maintain consistency and reliability in data collection Brinkmann (2022).

### **D. Techniques for Collecting the Data**

Data collection strategies follow research protocols to get essential data. Sugiyono (2012) emphasizes that data collection is the most strategic step in research. The researcher collected data for this study through questionnaire and interviews.

### **a. Questionnaire**

According to Arikunto (2019), data are the results of research quotations, whether factual or numerical. Data are unrefined materials obtained by researchers from the world under study. In other terms, data is a collection of information from respondents. The data gathering method refers to how the data is collected. This study collected data on students' perceptions of using the Duolingo application to learn English. The data for this study were acquired using a questionnaire. This study uses a questionnaire as an instrument. The questionnaire was prepared to obtain information to know student perceptions of the use of Duolingo as an English learning application. This study uses a close-ended questionnaire. The questionnaires were translated into Bahasa Indonesia to make it easy for the eighth grade students of MTs Al Fakhriyah to understand the questions and provide the answers. The questionnaire used in this study was adopted from Masita (2022).

The questionnaire items were adopted and modified from a previous study by Masita (2022), which focused on students' perceptions toward the use of Duolingo in language learning. The instrument consists of 14 close-ended statements designed to measure students' perceptions of Duolingo in terms of motivation, ease of use, and engagement. All items are stated positively to avoid ambiguity and to help students respond more accurately. The indicators used in constructing the questionnaire are as follows:

1. Motivation: items that reflect students' enthusiasm, interest, and encouragement to learn vocabulary through Duolingo.
2. Ease of Use: items related to the simplicity, clarity, and accessibility of the Duolingo application.
3. Engagement: items that describe the interactivity, fun elements, and active involvement of students during vocabulary learning with Duolingo.

**Table Indicators of the Questionnaire**

| NO | INDICATOR   | NUMBER QUESTION    |
|----|-------------|--------------------|
| 1  | Motivation  | 1,2,3,6,7,11,13,14 |
| 2  | Ease of Use | 10,12              |
| 3  | Engagement  | 4,5,8,9            |

*The indicator was adopted by Masita (2022)*

#### **b. Interview**

An interview is a meeting between two people to exchange information and ideas through questions and answers, contributing meaning to a particular topic Sugiyono (2020). According to Flick (2009), the purpose of the interview is to explore the existing knowledge that can

be conveyed in the form of questions and answers, so they become available for interpretation. In this study, the researcher will conduct face-to-face interviews with respondents by asking about 5 questions about their experience using Duolingo, so that researcher can find out in-depth and valid information or data from respondents. The interview used in this study was adopted from Jaelani and Rachmadanti (2020).

## **E. Trustworthiness of the Data**

To ensure the trustworthiness of this qualitative study, the researcher applied strategies such as triangulation, member checking, and thick description. These strategies align with the four key criteria of qualitative research trustworthiness: credibility, transferability, dependability, and confirmability Adler (2022).

### **1. Credibility**

Credibility refers to how accurately the research findings represent participants' experiences. To enhance credibility, the researcher applied methodological triangulation by using observations and interviews. This approach allows data verification from multiple sources, reducing bias and increasing the reliability of findings Adler (2022).

Additionally, member checking was conducted by allowing participants to review and confirm their responses during interviews. This step ensures that the researcher's interpretation aligns with participants'

perspectives, minimizing misinterpretations and strengthening data validity Soysal and Turkmen (2024).

## **2. Transferability**

Transferability refers to the extent to which findings can be applied to other contexts Lincoln and Guba (1985). Since qualitative research does not aim for generalizability but rather depth of understanding, a thick description was provided to allow future researchers and educators to assess the applicability of the findings in similar settings.

Geertz (1973) introduced the concept of thick description, which involves providing detailed explanations of the research setting, participant backgrounds, classroom dynamics, and how Duolingo was implemented in the learning process. By offering rich contextual details, this study ensures that readers can evaluate whether the research findings may be relevant to other educational environments.

## **3. Dependability**

Dependability concerns the consistency and reliability of the research process over time. To ensure dependability, the researcher systematically documented each stage of the research, including data collection methods, observation techniques, and interview protocols. This structured documentation enables other researchers to understand and, if needed, replicate the study with confidence Adler (2022).



#### **4. Confirmability**

Confirmability ensures that the research findings are based on participants' responses rather than the researcher's own biases or assumptions Lincoln and Guba (1985). To enhance confirmability, the researcher maintained structured research records, including interview transcripts and observation notes. Additionally, a clear step-by-step thematic analysis process was followed, ensuring that findings emerged organically from the collected data rather than being influenced by the researcher's personal views. Shenton (2004) suggests that confirmability is best achieved when researchers provide a transparent audit trail, demonstrating how data was collected, analyzed, and interpreted objectively.

#### **F. Techniques for Analyzing the Data**

According to Umarti and Wijaya (2020), qualitative data analysis is the process of searching for and systematically arranging data obtained from interviews, field notes, and documentation. This process involves organizing the data into categories, describing units, synthesizing, organizing patterns, selecting important information, and drawing conclusions so that the data is easy to understand by both the researcher and others. Data from questionnaires and interviews have been examined in this study to produce research findings. Data is then provided in a descriptive format.

## **1. Questionnaire**

The researcher used the formula stated by Sudijono (2018) to examine the data from questionnaires :

$$P = \frac{F \times 100\%}{N}$$

Annotation :

P: Percentage

F: Frequency of answer (the number of students who answer)

N: Number of samples (the total participation)

## **2. Interview**

The researcher analyzed the data from interviews using Miles and Huberman's (2014) interactive model of qualitative data analysis, which consists of three main components.

### **a. Data Reduction**

Data reduction involves selecting, focusing, simplifying, and abstracting data. During the fieldwork phase, it is essential to consider all evidence that supports research conclusions, eliminate irrelevant information, and document relevant data. The researcher reduces data by focusing on key details and organizing them systematically. The

collected data will be summarized and categorized to facilitate further analysis.

**b. Data Display**

After the data has been reduced, the next step is to present it in an organized manner to enable interpretation and conclusion drawing Miles and Huberman (2014). Researchers classify related information into categories based on the research problem. In this study, tables and other visual representations have been incorporated to enhance clarity, organization, and comprehension of the data.

**c. Conclusion Drawing or Verification**

Conclusion drawing involves interpreting findings based on the analyzed data to answer the research focus Gunawan (2017). At this stage, the researcher reviews each step of the study, including data reduction from interviews, field observations, and initial findings. The verification process ensures that the conclusions drawn are based on a thorough and systematic analysis of the data.