

## CHAPTER III

### METHODOLOGY

This chapter attempts to present the design of the study, participants and context of the study, instrument of the study, data collection, and data analysis of the study.

#### **3.1 Research design**

In this research, the researcher utilized a qualitative method for data presentation, interpretation, validation, and potential research findings. In this qualitative study, researcher engaged in reflection, considering how their participation in the research, as well as their backgrounds, cultures, and experiences, may have influenced their interpretations, including the themes they developed and the significance they attributed to the data (Creswell & Creswell, 2018). Case study research is a commonly used methodology in the social and life sciences. This methodology involves intensive investigation of individuals, groups, or units to generate insights that can be generalized from the research (Heale & Twycross, 2018).

The case study method was chosen in this research for its in-depth and contextual understanding of how non-EFL students experience and respond to the use of the Duolingo application in English vocabulary learning. Focusing on individual cases allows researcher to understand the subjective aspects, motivation, challenges, and personal interactions that may be difficult to measure through quantitative approaches. Case studies enable in-depth exploration of how

students connect their personal experiences with learning through the application and identify factors that influence learning outcomes and application usage. Through this approach, researcher gain richer and more profound insights into the effectiveness of the Duolingo application in vocabulary learning.

### 3.2 Participants and context of the study

This study involved 8 students from the Islamic State Institute of Kendari, representing various disciplines. They were recruited through a mini-survey distributed by the researcher. The results of the mini-survey showed that they use the Duolingo application as a means of learning English. They access it every day and multiple times a week. They expressed their readiness to participate in this research until its completion. All participants are non-English majors at one of the higher educations and their names or profiles are disguised as addressed as follows:

**Table 3.1 Participants' Profile**

Participant	Gender	Age	Semester	Major	Length of Duolingo use
P1	Female	20	5	MPI	2019
P2	Male	21	7	PBS	2022
P3	Male	19	3	KPI	2022
P4	Male	19	3	HES	2022
P5	Female	20	5	IQT	2023
P6	Male	19	3	FISIKA	2022
P7	Male	18	1	PGMI	2015
P8	Male	18	1	PGMI	2024

Here is a description of each participant, providing some situations and conditions during vocabulary learning using the Duolingo application. All the participants' names are pseudonyms of P1, P2, P3, P4, P5, P6, P7, and P8.

### 3.2.1 Participant 1 (P1)



Figure 1: Duolingo profile for Participant 1

She is MPI student. She studied English on the Duolingo app for approximately since 2019. She is a type of student who consistently seeks ways to self-improve, and she views technology as the ultimate solution. To her, applications like Duolingo are not merely learning tools but also windows to a world where she can explore English vocabulary and language skills more profoundly. In her view, learning English with technology is not just about grasping words, but also delving into a deeper understanding and exploration of the language.

She is highly motivated to use technology as a means to enhance her English language proficiency. She sees this application as a source of extra motivation to keep learning. With interactive features, gamified learning, and personalized training, she feels that Duolingo has provided her with a distinct

advantage in her learning journey. Furthermore, she also recognizes that learning with technology, such as Duolingo, brings additional benefits in terms of accessibility. She doesn't have to worry about additional costs or constrained schedules due to classroom learning. With this application, she can study at any time and in any place, even amidst her daily busy schedule.

### 3.2.2 Participant 2 (P2)



Figure2: Duolingo profile for Participant 2

He is PBS student. He studied English on the Duolingo since 2022. Participant 2 (P2) is an individual who enjoys self-directed learning. For him, education is about maintaining complete control over his own learning process. Therefore, he has chosen Duolingo as the ideal tool for learning the English language. This application provides him with the freedom to determine the learning materials that suit his needs.

He is the kind of student who dislikes being confined by rigid learning structures. He perceives that using Duolingo provides him with the flexibility to choose what he will study and when he will study it. This gives him a sense of

satisfaction and significant control over his learning journey. In his perspective, technology is about empowering students. With Duolingo, he feels that he can design his own curriculum, select relevant materials, and study according to his preferences and schedules. He also feels that technology like this helps him to develop as a more independent and organized learner.

He sees that learning with technology not only removes barriers in material selection but also enables real-time progress monitoring. He can track how far he has progressed, which is a crucial feature for sharpening his English language skills. Furthermore, he is content with the time flexibility offered by Duolingo, which allows him to study whenever he has spare time.

### 3.2.3 Participant 3 (P3)



Figure3: Duolingo profile for Participant 3

He is a KPI student. He has been studying English on the Duolingo app since 2022. Participant 3 (P3) is an individual who enjoys learning while having fun. He finds the Duolingo app to be an engaging educational platform due to its gamified system. For P3, learning with gamification elements enhances the learning process, making it more captivating and interactive. He views Duolingo



as a tool that incorporates enjoyment into the process of learning the English language. He is the kind of student who believes that enjoyable learning is easier to sustain motivation for. With gamification elements integrated into Duolingo, he no longer views learning as a tedious task. Instead, he sees it as an enjoyable experience that ignites his enthusiasm for learning. He firmly believes that technology like Duolingo transforms learning into a more enjoyable experience. He feels that the ability to compete with himself and friends in earning points and achievements provides him with extra motivation to keep learning. This helps him feel that he is not only learning but also playing and having fun in the process.

Moreover, he sees that gamification elements in learning make him more engaged and interactive. He can test his knowledge with challenges and quizzes, which provide him with immediate feedback. For him, this is an effective way to sharpen his English language skills with a more interactive and dynamic approach. He also finds that technology motivates him to achieve his goals in learning. With progress tracking features, he can see the advancements he has made, which gives him a sense of accomplishment and satisfaction. He feels that apps like Duolingo provide him with an advantage in achieving his goals in a more enjoyable manner.

### 3.2.4 Participant 4 (P4)



Figure4: Duolingo profile for Participant 4

He is HES student. He learned English on the Duolingo app since 2022. Participant 4 (P4) is an individual who opts for technology for English vocabulary learning due to its flexibility. He finds comfort in the ability to learn at any time and from anywhere using Duolingo. For him, this flexibility is one of the most precious aspects of his learning journey. He is someone with a rather tight schedule. Thus, he believes that learning through technology like Duolingo is the most fitting choice for him. He can access learning materials at any time, whether it's while on the go, at home, or even during lunch breaks. He feels that with this app, he no longer needs to feel constrained by time or location. The flexibility in learning allows him to study according to the most convenient schedule. He can plan his study time around his other commitments and responsibilities.

Furthermore, he sees that technology helps in motivating him to remain consistent in his learning efforts. With progress tracking features, he can see how he has progressed over time. This provides him with a strong sense of accomplishment and further motivates him to keep learning. He also highly values the fact that technology allows him to personalize his learning experience. With

access to a variety of materials and exercises, he can select what is most relevant and challenging for him. This helps maximize his English vocabulary learning according to his needs and abilities.

### 3.2.5 Participant 5 (P5)



Figure5: Duolingo profile for Participant 5

She is IQT student. She studied English on the Duolingo app since 2023. Participant 5 (P5) is a student who prefers self-directed learning and believes that Duolingo provides complete control over the learning process. She exhibits the characteristics of someone who enjoys scheduling and selecting learning materials based on her preferences. She sees the application as a tool that grants her the freedom to choose what to learn and when to focus on expanding her English vocabulary.

She is the type of student who enjoys having full control over her learning. To her, education is about designing her learning experience according to her desires. With Duolingo, she can set her own study schedule and choose the most relevant and engaging learning materials. Furthermore, she sees that learning with technology like Duolingo provides her with invaluable flexibility. She can study at any time and from anywhere, thus avoiding the constraints of a rigid schedule.



This makes her feel more at ease and allows her to integrate learning with her daily life. She also greatly values the fact that technology helps motivate her to achieve her goals. With progress tracking features, she can see how far she has progressed in her learning journey. This gives her a strong sense of achievement and ignites her motivation to strive even harder.

### 3.2.6 Participant 6 (P6)



Figure6: Duolingo profile for Participant 6

He is Physics student. He learned English on the Duolingo app since 2022. Participant 6 (P6) is a student who chooses technology for learning because of the convenience and flexibility it offers. He exhibits the characteristics of someone who values comfort in his learning. He believes that learning with applications like Duolingo provides him with the freedom to select the time and place of study that aligns with his schedule. He is the type of student with a busy lifestyle, and as a result, he seeks ways to maximize his learning time. With Duolingo, he can study anytime and anywhere, without the constraints of a tight schedule. This flexibility is highly valuable to him as it enables him to integrate learning with his daily tasks.

He sees that technology helps motivate him to continue learning. With progress tracking features, he can observe the progress he has made, which instills a strong sense of accomplishment. This sense of satisfaction motivates him to reach his goals in expanding his English vocabulary. Furthermore, he feels that learning with technology is a solution that allows him to study comfortably. For him, technology brings comfort into the learning process.

### 3.2.7 Participant 7 (P7)



Figure7: Duolingo profile for Participant 7

He is PGMI student, He studied English on the Duolingo app since 2015. Participant 7 (P7) is a student who enjoys self-directed learning. Duolingo provides him with full control over the learning process, making it easier for him to concentrate on expanding his English vocabulary. He is the type of student who believes that self-directed learning gives him the freedom to pursue his own goals. With Duolingo, he feels that he can design his learning experience according to his will and preferences.

He also sees that technology helps him focus more on his learning. He finds it easier to concentrate when studying independently rather than in a

traditional classroom setting. The ability to set the pace of learning and choose the materials of interest makes him more satisfied with the learning process. Furthermore, he feels that technology helps motivate him to keep learning. With progress tracking features, he can see how far he has progressed, providing him with a strong sense of achievement. This motivates him to strive even harder to reach his goals in English language learning

### 3.2.8 Participant 8 (P8)



Figure 8: Duolingo profile for Participant 8

He is PGMI student. He learned English on the Duolingo since 2024. Participant 8 (P8) is an individual who has chosen technology as the primary means of his educational journey. For him, technology offers convenience and flexibility in the process of education and self-improvement. Instead of following the conventional learning patterns in traditional classrooms, he has adopted a more modern and adaptive approach, with Duolingo being his trusted partner in this endeavor. He pursues education with enthusiasm and a desire for continuous

learning, which is why he highly values platforms like Duolingo. One of the key aspects that make him appreciate Duolingo is the freedom it provides in choosing when and where he wants to learn. With just an internet-connected device, he can access learning materials at night or during his free time. This flexibility is highly valuable to him, allowing him to tailor his learning to a busy schedule and a dynamic lifestyle.

He also feels that technology helps him become more engaged in his learning. With the interactive learning methods offered by Duolingo, he is not just a passive listener; on the contrary, he actively participates in every lesson. The platform provides various tools that enable him to practice speaking, listening, writing, and reading in the language he is learning. With this, he can practice language skills in a deep and focused manner. Furthermore, he feels that Duolingo gives him full control over his learning process. He can choose which language to learn, the appropriate level of difficulty, and topics that interest him. He can also track his learning progress in real-time and identify areas that need improvement. In other words, Duolingo allows him to personalize his education according to his needs and interests.

He also experiences the social benefits of technology-based learning. Through platforms like Duolingo, he can connect with a community of learners who share similar interests. This gives him the opportunity to share experiences, seek advice, and even compete with friends in learning challenges. All of this creates a supportive and motivating environment for him on his journey. Lastly, he realizes that technology is the future of education, and he enthusiastically follows this trend. He knows that technology is continually evolving, and with it,

opportunities for learning and growth are also expanding. He is confident that by using technology as the primary tool in his education, he will continue to broaden his knowledge, sharpen his skills, and achieve higher levels of excellence in an ever-changing world.

### **3.3 Instrument of the Study**

This study employed written reflections through a Google form distributed online within a WhatsApp group to gather students' reflections on the use of the Duolingo app for enhancing English vocabulary learning. A structured written story template comprising a sequence of questions and blank spaces where participants could input their comments was termed as a written reflection (Barkhuizen, 2014). The research utilized an online methodology using WhatsApp, primarily chosen for its accessibility allowing participants to respond to questions from anywhere. The deployment of these tools occurred in multiple stages; initially, the reflection sheet in the form of Google Forms was disseminated through the WhatsApp group. Enabling participants to freely express their ideas and thoughts through writing on the reflection sheets, this instrument facilitated the collection of detailed and comprehensive data descriptions. This approach also guaranteed accuracy, coverage, and diversity in the obtained data as participants had ample opportunity and space to articulate their thoughts (Hollweck, 2015).

The reflection questions were grounded in theoretical concepts from (Engeström, 1987), namely subject, object, tools, rules, and division of labor. Furthermore, to deepen the study, the researcher conducted interviews focusing on



the aspects of English vocabulary learning drawn from (Thornbury, 2002). These aspects encompass repetition, retrieval, spacing, pacing, usage, cognitive depth, personal organization, imaging, motivation, attention/arousal, and affective depth.

### **3.4. Data Collection**

Data will be collected using several procedures. First, reflective questions will be designed in a Google Form that allows participants to submit their responses. Subsequently, they will be distributed through a WhatsApp group along with a series of questions. Second, after several days, participants' answers and responses will be gathered. Third, checking and collecting participants' responses will be conducted if there is unclear data. Then, participants will be followed up with interviews as triangulation data to acquire more detailed and accurate information (Xiao & Yang, 2019). The fourth stage involves coding the data based on students' written reflections. Data will be collected using Microsoft Excel for easier organization, arranging it according to each question (Q1-Q4) containing participants' responses (P1-P8). The final stage is categorizing the data after identifying emerging themes as results, which will be presented in the findings and discussion of this study.

### **3.5. Data Analysis**

In this study, the data collected for students' reflections are analyzed using a data analysis technique developed by Saldana (2016). Thematic analysis is employed to categorize students' reflections on vocabulary learning through the Duolingo Application. Thematic analysis is a tool used for coding and interpreting

text. This means that the objective of thematic analysis is to summarize the data. Miles et al. (2014) noted that the data condensation stage includes writing summaries, coding, developing themes, creating categories, and writing analytic notes. This stage of analysis is also supported by Jackson et al. (2007), who stated that qualitative content analysis involves interpreting, theorizing, or making sense of data by first breaking it down into segments that can be categorized and coded, and then building patterns for the entire dataset by linking categories to each other.

The data in this study were analyzed using the theory of (Engestrom, 1987). They are Subject – object to Duolingo App, Subject – tools to Duolingo App, and Subject – community to Duolingo App. To attain more profound data, participants utilize an aspect of English Vocabulary Learning adapted from (Tombury, 2002). These aspects include Repetition, Retrieval, Spacing, Pacing, Use, Cognitive Depth, Personal Organizing, Imaging, Motivation, Attention/Arousal, and Affective Depth. Students' reflections were categorized and identified using various colors and labels/codes. The green color code signifies the strengths and weaknesses of Duolingo application (Subject – object). The yellow color code represents Clarity of application features (Subject-tools), and the grey color code signifies community engagement benefits (Subject – community) and the red color code represents Time Management in Duolingo (Subject – rules). Saldana (2016) concluded that a code is a word or short phrase symbolically assigned to identify and categorize data.

**Table 1.3 Example of data coding**

Name	Raw Data	Coding	Theoretical Components Engestrom (1987)	Learning Vocabulary Aspect (Thorbury, 2002)
P1 of Q1	<p>Kelebihannya yaitu konsep pengajaran di Aplikasi Duolingo dilakukan secara berulang sehingga sangat membantu dalam mengingat setiap kosakata yang penting. Kekurangannya ada pada jaringan yang tidak bagus sehingga membuat tertunda pembelajaran dalam aplikasi.</p>	<p>Kelebihannya yaitu konsep pengajaran di Aplikasi Duolingo dilakukan secara berulang sehingga sangat membantu dalam mengingat setiap kosakata yang penting.</p> <p>Kekurangannya ada pada jaringan yang tidak bagus sehingga membuat tertunda pembelajaran dalam aplikasi.</p>	<p>Strengths (Subject — object)</p> <p>Weaknesses (Subject-object)</p>	Repetition
P2 of Q2	<p>Fitur-fitur yang tersedia dalam aplikasi ini mudah dipahami untuk mempelajari kosakata bahasa Inggris, terutama fitur struktur kalimat</p>	<p>Fitur-fitur yang tersedia dalam aplikasi ini mudah dipahami untuk mempelajari kosakata bahasa Inggris, terutama fitur struktur kalimat</p>	<p>Clarity of application features (Subject-tools).</p>	Cognitive Depth