

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Subject

This design targets the audience of students at the secondary school level. The details and explanations regarding these target audiences are outlined below.

3.1.1 Primary Subject

1. Demographic

- a. Gender: Female and male
- b. Age: 12-15 years old

In Indonesia, students from the middle school level starts at the age of 12 to 15 years old. The middle school phase takes 3 years and is mandatory for students to accomplish as it is part of the 9 years of education program (Museum Kepresidenan, 2018).

- c. Education: Secondary school level (middle school)
- d. SES: B

Katz and Rideout (2021, p. 22) reported that approximately 65% of families living below the federal poverty line experienced difficulties with class participation or completing schoolwork because they lacked access to a computer or the internet or had to rely solely on a smartphone for their school activities. The socio-economic status B refers to a middle-class group with access to education, literacy, and basic services. Therefore, this creation is targeted to people who have access to education and digital devices. Based on the Gross Participation Rate (APM) for education in Samarinda, 82.05% of population aged 12-15 are enrolled in secondary school. Most of the population in Samarinda has access to education. Thus, most of the population can read and write. Concluding from this indicator, it can be stated that most population in Samarinda comes from the socio-economic status B.

2. Geographic

Samarinda, Capital City of East Kalimantan

City Government of Samarinda stated that the city is making a thorough effort in improving the Human Capital Index (HCI), one of the programs involves the process of enhancing the English proficiency level among students (*Pusaran Media*, 2023; Department of Education and Culture of Samarinda, 2023). The mayor of Samarinda City implied the commitment in improving the education in Samarinda. Therefore, the sole key to improving HCI level is linked to the quality of education in Samarinda. Former President of the Republic of Indonesia, Joko Widodo, stated that the development of the national capital (IKN) in East Kalimantan is the nation's effort in transforming Indonesia to build a better way of life (*Kementerian Sekretariat Negara*, 2023). The soon to be national capital of Indonesia is in two regencies in East Kalimantan, close to its capital city, Samarinda. The objective is the effort of improving the English Proficiency level of Samarinda is increasingly important since Samarinda will be around the area of future IKN. With IKN's development in East Kalimantan, Samarinda's strategic location makes English education increasingly essential for future opportunities. Furthermore, research by Mauliska (2024) highlighted the importance of English proficiency in preparing the nation's youth for globalization and economic growth.

3.2 Design Methodology and Procedure

To design a website regarding gerunds to improve the English proficiency of middle school students, the designer chose the design thinking method. Stated by Landa (2019) that design thinking process can be used to solve information and communication design problems. This process challenges conventional thinking and can convey ideas along with developing it (p. 65). This method is used because it is human-centered and according to Landa (2019) this

method can gain insights through observation, engagement, and immersion to get the best design solutions according to the target's behavior. Since users are actively engaged in the process, the mobile website created through the design thinking method is more likely to fulfill users' needs.

3.2.1 Empathize

Empathy is the ability to comprehend or share another person's experiences by viewing them from the other person's perspective. Empathy forms the basis for human-centered design. (Landa, 2019, p. 65).

The empathy phase, according to Landa (2019):

A. Observe: Watch people and take note of their behavior, focusing on how they go about their daily activities and how they interact with their environment and others.

B. Engage: Connect with users through interviews and interactions, both planned and spontaneous, to gain deeper insights. In-depth interviews will be conducted to engage more into the point of views of the target.

C. Immerse: Step into the users' world by experiencing their challenges and thought processes firsthand, helping you understand them better.

For the empathize phase, the author will conduct a questionnaire along with a series of in-depth interviews with both students and a teacher. The purpose is to gain a deeper understanding of the users' needs, challenges, and learning habits. The questionnaire will help gather general insights from a broader group of students, while the in-depth interviews will provide more detailed and personal perspectives. By combining both approaches, the author aims to collect meaningful data that can guide the development of a more effective and user-centered design.

3.2.2 Define

The define phase is driven by the insights gathered from empathy, shaping point of view (POV). This step helps evaluate ideas and may prompt to reconsider or reframe the problem. Applying empathy insights is to ensure that the design process is centered around the users' needs, not the needs of a wider audience (Landa, 2019, p. 67). In this phase, the author will collect and analyze insights obtained from the previous empathize stage to construct a Point of View (POV) table, develop a user persona, and create a user journey map. These tools will help define the users' needs, goals, and pain points, providing a clearer direction for the design process. By organizing the data into structured frameworks, the author aims to ensure that the design solutions remain user-centered and relevant to the target audience's actual learning experience.

3.2.3 Ideate

In the ideate phase, diving into various thought processes, coming up with a wide range of ideas. The goal is to move beyond usual thinking, using both critical and creative thinking to produce as many ideas as possible. Finally, apply critical and creative thinking to assess these ideas, determining whether they are worth pursuing or if they hold value for further exploration (Landa, 2019, p. 67). In this stage, the author will begin transforming abstract concepts into visuals by developing and exploring initial ideas. The process will start with generating design concepts, such as mood board and references. This step allows the author to visualize potential design directions and evaluate their suitability based on the users' needs that were identified in the previous stages.

3.2.4 Prototype

Landa (2019) stated that prototyping is the process of creating a basic version of an idea, which can later be improved. It gives a physical form to concepts. Testing a prototype is to check if people can use it and learn from their experience to make improvements. Early prototypes can be simple and rough (low fidelity), while later versions can be more polished (high fidelity)

(p. 65). The ideas generated during the ideation stage will serve as the foundation for the prototyping phase. In this stage, the author will begin by designing the necessary visual assets and then proceed to develop the user interface based on the concepts previously outlined. According to Landa (2019), the prototyping process is not linear but iterative, allowing continuous improvement. Therefore, the author will apply an iterative approach throughout this phase, testing and revising the prototype as the project progresses. This method ensures that the design evolves in response to user feedback and remains aligned with the overall goals of the project.

3.2.5 Test

Testing provides the chance to evaluate the solutions, gather feedback from trial runs, refine the approach, and continue learning about the users. It is an iterative process, shaping the next versions of prototypes. After testing, ask: How did it go? What did you learn, and how will those insights guide your next steps? Testing may lead to explore new ideas, reframe the problem, refine solutions, or advance the prototype. It encourages learning and helps build more effective ideas, allowing redesign for improvement (Landa, 2019, p. 68). By carrying out the testing phase, the author will be able to identify areas that need improvement and make necessary enhancements to the design. This process allows for the evaluation of the design's effectiveness and provides valuable feedback, which can be used to optimize the overall quality of the design.

3.2.5.1 Alpha Test

According to the Product Plan website, an alpha test is the first stage of testing a product to check if it works as expected in terms of its functions. In this phase, the author will conduct a face-to-face test with real users to evaluate how well the product performs. To gather feedback for improvement, users will complete a questionnaire after the test session as a way to assess the results of the alpha test.

The questionnaire will be divided into three sections, each section assessing different aspect of the media.

A. Content Section: This section will consist of statements about the entire content displayed across the website.

Starting from the copywriting, materials, language usage, and evaluation.

B. Visual Section: This section will consist of statements about the visual aspect of the website. Aspects such as colors, typography, illustration, and user interface.

C. Interactivity Section: This section will consist of statements about the interactive aspect of the website. Such as the navigation of the website, responsivity of each button and cards, and the quiz feature.

After all feedback is collected, the author will analyze the questionnaire results and proceed with the iteration process to improve the website.

3.2.5.2 Beta Test

According to the Product Plan website, beta testing allows real users to use the product in a real-world setting to identify any bugs or issues before it is officially released to the public. The author will perform a beta test with real target users, the research method used is in-depth interviews.

A. Content Section

1. *Apakah bahasa yang digunakan sudah jelas?*
2. *Apakah materinya mudah dimengerti?*
3. *Saat membaca atau mempelajari materinya, kamu langsung paham atau butuh waktu lama?*
4. *Apakah kuis mendukung pemahaman atas materi?*

5. Kalau kamu salah di kuis, apakah kamu tahu bagian mana dari materi yang harus kamu pelajari lagi?

B. Visual Section

1. Apakah tampilan dari website terlihat menarik?
2. Apakah penggunaan font pada text di website ini mudah dibaca?
3. Apakah tanggapanmu tentang ilustrasi karakter yang digunakan di website ini?

C. Interactivity Section

1. Apakah alur dari website ini sudah sesuai dan jelas?
2. Apakah semua tombol yang ada bisa diklik?
3. Apakah fitur-fitur yang ada bisa diakses?
4. Apakah keseluruhan fitur di website sudah lengkap?
5. Apakah semua tombol yang diklik mengarahkan ke bagian yang sesuai?

After all the feedback are gathered and the author analyzed how the users interact with the website, the iteration process will be conducted.

3.3 Research Techniques and Procedure

This project utilized in-depth interviews, questionnaire, existing study, and reference study to thoroughly analyze the existing problem. These methods provide diverse perspectives and valuable insights, leading to a more comprehensive understanding. The purpose is to understand the perspective of the students when it comes to learning English in class and eventually comes with a design solution to the problem. The data collected will be the source of creating this design, making it as user centered.

3.3.1 In Depth Interview

According to Sugiyono (2013, p. 140), an in-depth interview is a method of data collection where the researcher directly interacts with the respondent. This approach enables the researcher to delve deeper into the

subject by asking open-ended questions, providing a more detailed understanding of the respondent's perspectives (p. 137). The author specifically planned two in-depth interviews to get insights and understand deeper context. The two sets of interviews are based on the theories of gerunds used in the book *Mastering Gerunds and Infinitives* by Thomas Celentano.

1. In depth interview with English Teacher

The author performed an in-depth interview with 8th Grade English Teacher from Sunodia Christian Middle School Samarinda. Sunodia School was selected because it represents a relevant and practical setting for implementing a mobile-based learning tool focused on English grammar, particularly gerunds. As a growing educational institution, Sunodia places emphasis on English language development, making it an ideal environment to introduce supplementary digital resources.

The primary objective of this interview is to gain a different perspective on the issue, beyond that of the students. Insights from the English teacher is essential to understand the current education system and its approach.

1. How long have you been teaching English?
2. What grade levels do you teach?
3. How would you describe your students' overall English proficiency levels?
4. What are the most common challenges students face when learning English grammar?
5. In your experience, do students naturally encounter gerunds in their reading and writing, or do they require explicit instruction to recognize them?
6. How frequently do gerunds appear in the materials your students engage with (textbooks, stories, articles)?

7. Do you think students acquire gerunds more effectively through reading and listening (implicit learning) or through explicit grammar instruction? Why?
8. When teaching gerunds, do you follow a rule-based approach (explaining grammar rules) or an example-based approach (showing sentences in context)?
9. What types of exercises or activities do you use to teach gerunds (e.g., fill-in-the-blanks, sentence writing, discussions, games)?
10. Have you used real-world examples to help students learn gerunds? If so, how effective are they?
11. What are the most common mistakes students make when using gerunds?
12. How do students typically improve their understanding of gerunds? Does it happen naturally over time, or do they need repeated instruction?
13. What strategies do you use to correct students' mistakes with gerunds? Do you find direct feedback, peer correction, or self-correction more effective?
14. Have you noticed any differences in how students process gerunds in spoken vs. written English?
15. How does a student's prior knowledge of grammar (such as nouns and verbs) affect their ability to understand gerunds?
16. Based on your experience, what are the best ways to help students master gerunds in English literacy?
17. What improvements could be made in English teaching materials or curriculum to enhance students' understanding of gerunds?
18. If you could change one thing about how gerunds are taught, what would it be?

2. In-depth Interview with Middle School Students

The author performed an in-depth interview with 8th grade middle school student. Middle school students were chosen as the target audience because this is a critical stage in their English language development, where they begin to engage with more complex grammar structures, including gerunds. At this level, students are transitioning from basic sentence construction to more advanced forms of expression, making it the ideal time to introduce focused grammar support.

The main purpose of this interview is to gain insights from the point of view of a student. As the student will be the main users on this design project. Insights from the student will have an impact as a source for this design.

- 1. Apakah anda familiar dengan English Grammar?*
- 2. Seberapa besar keinginan anda dalam mempelajari bahasa Inggris di sekolah?*
- 3. Apakah anda mengambil kursus tambahan untuk bahasa Inggris?*
- 4. Apakah pembelajaran di sekolah sudah membantu anda dalam proses memahami materi bahasa Inggris?*
- 5. Bagaimana cara pembelajaran bahasa Inggris dilakukan di kelas?*
- 6. Apakah anda mengetahui tentang gerunds?*
- 7. Apakah anda pernah mempelajari gerunds sebagai bagian dari materi pembelajaran bahasa Inggris?*
- 8. Bagaimana kira-kira level pemahaman anda terhadap gerunds?*
- 9. Apa yang anda anggap sebagai hambatan dalam mempelajari gerunds?*
- 10. Apa metode pembelajaran yang anda sukai untuk mempelajari dan memahami bahasa Inggris?*

3.3.2 Questionnaire

The author distributed the questionnaire among middle school students to gain a quick and wide insights on their perspective about learning English Gerunds. The questionnaire is divided into 3 major sections with 17

questions. The questionnaire was designed based on the theoretical framework proposed by Supriatna (2021).

1. First Section

The first section aims to gather respondent profiles, as their background may influence their responses. Therefore, the author collected information about their age and their domicile.

Table 3.1 Questionnaire's First Section

Question	Type	Category
<i>Name</i>	<i>Short Answer</i>	-
<i>Age</i>	<i>Multiple Choice</i>	<i>12-13 Years</i>
		<i>13-14 Years</i>
		<i>14-15 Years</i>
<i>Class</i>	<i>Multiple Choice</i>	<i>7</i>
		<i>8</i>
		<i>9</i>
<i>Domicile</i>	<i>Multiple Choice</i>	<i>Samarinda</i>
		<i>Outside Samarinda</i>

2. Second Section

The second section is specifically questions about general knowledge on grammar and gerunds.

Table 3.2 Questionnaire's Second Section

Questions	Type	Category
<i>Seberapa paham Anda dengan grammar di bahasa Inggris? Grammar adalah sistem aturan dalam bahasa</i>	<i>Linear Scale</i>	<i>1 (Tidak Paham)</i>
		<i>2</i>

<i>Inggris yang menentukan bagaimana kata-kata disusun untuk membentuk kalimat yang benar dan memiliki makna.</i>		3
		4 (Sangat Paham)
<i>Apakah Anda pernah belajar tentang gerund?</i>	<i>Multiple Choice</i>	Pernah
		Tidak Pernah
<i>Kalau menjawab pernah, bagaimana tingkat pemahaman Anda tentang gerund?</i>	<i>Linear Scale</i>	1 (Tidak Paham)
		2
		3
		4
		5
		6 (Sangat Paham)
<i>Kalau menjawab pernah, dari mana Anda pertama kali mengetahui tentang gerund?</i>	<i>Multiple Choice</i>	Pembelajaran di Sekolah
		Bimbingan Belajar/Kursus
		Internet (media sosial, website, dan sejenisnya)
		Buku Bacaan (Novel, Komik, Majalah, dan sejenisnya)
		Word of Mouth
<i>Apakah Anda merasa kesulitan dalam memahami dan menggunakan gerund?</i>	<i>Multiple Choice</i>	Ya
		Tidak
<i>Jika "Ya", bagian mana yang paling sulit?</i>	<i>Check Box</i>	Membedakan gerund dan infinitive
		Menentukan posisi gerund dalam kalimat
		Menggunakan gerund setelah preposisi
		Memahami gerund secara keseluruhan

3. Third Section

The third section of the questionnaire is to specifically learn about users' learning media and learning media preference.

Table 3.3 Questionnaire's Third Section

Questions	Type	Category
<i>Apakah Anda pernah mengakses media yang</i>	<i>Multiple Choice</i>	Pernah
		Tidak Pernah

<i>khusus membahas tentang gerund?</i>		
<i>Media pendukung mana yang pernah/sering anda temui memberikan penjelasan tentang gerund?</i>	<i>Multiple Choice</i>	<i>Buku</i>
		<i>Website</i>
		<i>Majalah</i>
<i>Seberapa antusias anda dalam mengakses informasi dari buku?</i>	<i>Linear Scale</i>	<i>1 (Tidak Paham)</i>
		<i>2</i>
		<i>3</i>
		<i>4</i>
		<i>5</i>
		<i>6 (Sangat Paham)</i>
<i>Seberapa antusias anda dalam mengakses informasi dari website?</i>	<i>Linear Scale</i>	<i>1 (Tidak Paham)</i>
		<i>2</i>
		<i>3</i>
		<i>4</i>
		<i>5</i>
		<i>6 (Sangat Paham)</i>
<i>Seberapa antusias anda dalam mengakses informasi dari majalah?</i>	<i>Linear Scale</i>	<i>1 (Tidak Paham)</i>
		<i>2</i>
		<i>3</i>
		<i>4</i>
		<i>5</i>
		<i>6 (Sangat Paham)</i>
<i>Apa yang menurut Anda membuat materi pembelajaran menjadi menarik untuk dimengerti?</i>	<i>Check Box</i>	<i>Interaktif dan menarik</i>
		<i>Penjelasan yang mudah dipahami</i>
		<i>Memiliki ilustrasi/gambar yang menarik</i>
		<i>Banyak contoh dan latihan soal</i>

3.3.3 Existing Study

A review of existing study is conducted to collect information on previously developed media for teaching gerunds. The aim is to identify design issues that can inform and guide improvements in future design process. The author plans to analyze two existing medias. The first being a textbook titled 'Mastering Gerunds and Infinitives' and the second being an interactive digital book titled 'Gerund Mini Book'. These medias will be analyzed using a SWOT analysis.

3.3.4 Reference Study

A reference study is a method used to explore and analyze established design medias, ongoing trends, and widely accepted practices gathered from different sources. This process plays an important role in fostering the author with ideas, as it exposes a wide range of visual outcomes and approaches. By carefully observing and reflecting on various examples of media, the author gains a deeper understanding of how different components work together. This knowledge allows the author to thoughtfully select and adapt relevant features with their own creative ideas, contributing to the development of a more refined design outcome suited to the needs of this project.

