CHAPTER 3
RESEARCH PROCEDURES

This chapter provided the methodology utilized to conduct the study. This chapter outlines seven parts of the research procedure, namely research method, research focus, setting and participants, data collection technique, data analysis technique, research steps, place, and time of research. More details are described below.

A. Method of the Research

This research used a qualitative approach with a descriptive case study design. Descriptive qualitative case study research is a useful scientific approach that allows a researcher to gather data and use descriptive statistics to characterize the demographic features of all that evidence (Nassaji, 2015). Moreover, qualitative research appears to be more comprehensive and sometimes involves a large collection of data from multiple sources to better understand individual participants, especially their ideas, opinions, and beliefs (Creswell, 2009). According to Yin (2018), the objective of a descriptive case study is to offer a thorough, contextually appropriate perspective on a specific occurrence. The purpose of this study is to investigate the impact of L1 on pronunciation difficulties among EFL pre-service teachers. Therefore, this approach turned out to be an appropriate approach for a thorough examination of particular events.

B. Focus of the Research

This research focused on investigating how L1 affects students' pronunciation, their learning strategies, motivation, and how their vowel formant frequencies compare to native speakers.

C. Setting and Participants

The participants in this research were pre-service teachers enrolled in the English Language Education Program of the *Pendidikan Profesi Guru* (PPG) or the Teacher Professional Education program. They were selected

purposively based on the criterion that they are prospective English teachers with diverse regional language (L1) backgrounds. There are four participants, and they represent four different regions in Indonesia: West Java, Central Java, South Sulawesi, and Maluku, each with their local languages: Sundanese, Javanese, Buginese, and Ambonese Malay.

The participants received a thorough explanation of the study's purpose, methodology, and ethical considerations. As official approval for data gathering, they were particularly told to fill out and sign a consent form. Safety, privacy, and the right to leave the study at any moment were all guaranteed to them. Additionally, the researcher had scheduled the interview with the participants.

D. Data Collection

This research used an open-ended, semi-structured interview technique to gather information on participants' experiences with their command of pronunciation. According to Reja et al., (2003), a semi-structured interview is one in which the interviewer asks open-ended questions rather than rigorously following a preset, prepared list of questions. The potential to discover people's unplanned responses, avoid bias that can result from suggesting solutions to people, and avoid the imbalance that can result from providing answers to people are some advantages of open-ended questions (Reja et al., 2003). The use of these semi-structured interviews was prompted by their adaptability. This kind of interview gives the interviewer the freedom to voice their thoughts and guide the participants toward specific skills and interests they believe they have.

This research was carried out online using Zoom as the platform for conducting interviews. Given that the participants were located in various parts of Indonesia, a virtual setting provided a practical and flexible solution for data collection, allowing the researcher and participants to connect across different regions without the need to travel.

The interview questions were about the awareness and pronunciation difficulties, segmental pronunciation errors, suprasegmental pronunciation

errors, learning strategies, and role of the classroom instruction, as outlined in Selinker's Interlanguage Theory (Selinker, 1972). According to Lightbown and Spada (2013), language interference affects pronunciation difficulties, and fossilization can result in EFL students making mistakes over time (Derwing & Munro, 2015). Recorded and transcribed responses will be examined for patterns.

E. Data Analysis

1. Familiarizing the data

In the first step, the researcher familiarized himself with the data by repeatedly listening to the recorded interview audios from four participants of different L1 backgrounds (Sundanese, Javanese, Bugis, and Ambonese Malay). The audio recordings were then carefully transcribed into written form. The researcher read through the interview transcripts several times to become immersed in the participants' experiences and identify meaningful patterns related to pronunciation difficulties.

2. Generating Initial Codes

In the second step, the researcher began organizing the data by identifying and marking specific segments of the participants' interview transcripts that were relevant to the research objectives. The researcher applied a colour-coding technique to differentiate each aspect mentioned by participants regarding pronunciation difficulties, L1 influence, stress and intonation issues, learning strategies, and motivation. This process generated a collection of initial codes, capturing important points raised in the interviews.

Table 1 Generating Initial Codes

Extracts	Initial codes
P1: Menurut Eka pengucapakan bahasa Inggris terasa sulit karena pertama, bahasa Inggris bukanlah bahasa kita yakni bahasa asing. Faktor yang keduanya mungkin karena dari bahasa daerahnya Eka. Jadi memang penuturan bahasanya ada kata-kata yang memang agak	Pronunciation difficulty due to foreign language status.

susah di pengucapan dengan bahasa Inggris sendiri.	
P4: kalo saya menggunakan bahasa ibu saya, Sunda tu lembut, nah bahasa saya tu lembut ya kemudia ritme/intonasinya juga santai datar, ketika beralih ke dalam bahasa Inggris tentunya ada perubahan dan bahkan ketika berbicara bahasa Inggris pun logatnya itu kaya ada Sundanya gitu. Jadi, em intonasinya cenderung datar ketika berbicara bahasa Inggris karena memang terbiasa menggunakan bahasa Sunda dari kecil.	Influence of L1 intonation
P3: Kalau saya mengucapkan *this*, itu kan /ðɪs/ ya itu menurut saya lebih gampang karena bunyinya deh gitu, tapi kalau *think* itu agak sulit karena apa namanya phoneticnya itu pakai /θ/ gitu, itu agak sulit. Atau mungkin kadang ketika lupa suka tink tink gitu bacanya.	Phoneme substitution (/θ/ to /t/)
P3: Menurut saya sebenernya banyak cara misalnya tuh nyanyi bahasa Inggris, kita kan dengerin dulu nih cara bacanya gimana, nah nanti kita kan ikutan nyanyi terus berulang ulang.	Learning strategy: repetition/drilling
P2: Dulu ketika saya menjadi siswa, ketika di bangku perkuliahan dosen biasanya memberikan apresiasi ketika bisa mengucapkan pronunciation yang baik dan benar. Ketika saya menjadi pengajar pun ketika ada siswa yang mampu melafalkan kata dengan baik saya juga memberi apreasiasi kepada siswa tersebut. Bisa dengan memujinya secara langsung atau mengajak siswa lain untuk *give applause* sehingga dia semakin bersemangat untuk meningkatkan kemampuan bahasa Inggrisnya. Saya juga merasa malu sebagai pengajar jika pronunciation saya salah, yang mana hal tersebut juga bisa ditiru oleh siswa, jadi saya harus mencari tahu penyebutan yang benar.	Motivation to pronounce correctly

Note: Extracts in this table paraphrased for clarity and brevity; full participant quotations are presented in Chapter IV.

The researcher identified 38 initial codes in total, each representing different aspects highlighted by the pre-service English teacher students in the participants' interview transcriptions. These codes captured patterns in pronunciation difficulties, segmental and suprasegmental challenges, learning strategies, and motivational factors. These codes encapsulated various themes

and patterns observed in the data, providing a comprehensive framework for further analysis and interpretation of the participants' experiences and insights.

Table 2 Calculating initial codes

NO.	Initial Codes	Total
1.	Pronunciation difficulty	9
2.	Phoneme substitution	10
3.	Stress, rhythm, and intonation issues	4
4.	Learning strategies	8
5.	L1 accent influence	5
6.	Motivation	2

3. Searching for themes

The third step, the researcher grouped related codes into broader potential themes. Similar codes, such as difficulties distinguishing English phonemes and replacing them with native equivalents, were clustered together under potential themes.

Table 3 Searching for themes

Initial Codes	Potential Themes
Pronunciation difficulty	Perceived Pronunciation Difficulties and Language Awareness
Phoneme substitution	Difficulty with English Phonemes Not Present in L1
Stress, rhythm, and intonation issues	Influence of L1 Stress and Rhythm, and Intonation
Learning strategies	Pronunciation Learning Strategies and Classroom Practice
Motivation	Motivation in Learning Pronunciation

4. Reviewing themes

In the fourth step, the researcher reviewed all potential themes to ensure they accurately reflected the coded data and the overall research aim. Any overlapping or unclear themes were refined. The final themes were agreed upon based on their clarity and relevance to the research questions.

5. Defining and Naming Themes

In the fifth step, the researcher clearly defined what each theme represented and gave each one an appropriate, concise name.

Table 4 Defining and Naming Themes

No.	Themes
1	Perceived Pronunciation Difficulties and Language Awareness
2	Difficulty with English Phonemes Not Present in L1
3	Influence of L1 Stress, Rhythm, and Intonation on English Pronunciation
4	Pronunciation Learning Strategies and Classroom Practice
5	Motivation in Learning Pronunciation and Additional Formant Analysis Findings

6. Producing the Report

The final step, the researcher organized the results based on the finalized themes. The findings were presented and discussed in Chapter IV, supported by direct quotes from the participants, related literature, and acoustic evidence through Praat formant analysis. Praat is a computer software used for speech analysis, particularly for examining the acoustic properties of spoken language. It allows researchers to measure features such as formant frequencies (F1 and F2), reinforcing the role of L1 interference in shaping pronunciation difficulties. Formant analysis in Praat measures the frequency values of F1 and F2, which indicate the position of the tongue and the openness of the mouth during vowel articulation. The reason for using Praat in this study is because it provides

objective, quantitative data to support the qualitative interview findings, confirming the extent of pronunciation deviation caused by L1 interference. This acoustic analysis strengthens the validity of the research findings by offering measurable evidence of how students' L1 affects their English vowel production.

F. Research Steps

Table 5 Research Steps

Step	Description
1	Conducted interviews with four pre-service English teacher students from different L1 backgrounds.
2	Transcribed all audio-recorded interviews.
3	Familiarized with the data by repeatedly reading the transcripts.
4	Generated initial codes using a color-coding method.
5	Grouped related codes into potential themes.
6	Reviewed and refined themes to ensure consistency and clarity.
7	Defined and named the finalized themes.
8	Conducted formant analysis using Praat for additional acoustic data.
9	Produced the findings and discussion chapter based on the final themes.
10	Concluded and reflected on the research based on qualitative and acoustic results.

G. Time and Place of the Research

This research was conducted virtually via Zoom, involving Pre-service English Teacher students from various universities across Indonesia. The data collection took place between January to March 2025, providing a flexible and practical setting for gathering qualitative data from participants in different regions.

Table 6 Research Schedule

Activities	Month											
	Agt 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025
Research Proposal Writing			■	■								
Research Proposal Examination					■							
Data Collection						■	■					
Data Analysis								■				
Report									■			
Thesis Research Seminar										■		
Thesis Examination												■