

CHAPTER I

INTRODUCTION

1.1 Background

In the ever-evolving global English communication setting, pronunciation proficiency stands out as a powerful competence. Intelligible pronunciation facilitates successful communication, as unclear pronunciation hinders one's intended meaning (Gilakjani, 2016). Pronunciation functions as a major factor in how speakers are judged and assessed in other skills (Fraser, 2000). Accordingly, the awareness of phonation features that include segmental (vowels, consonants) and supra-segmental (stress, intonation, rhythm) should not be underestimated. However, it remains worth noting that the ultimate goal of enunciation is not pursuing a 'perfect' or 'nativeness' model, in favor of achieving intelligibility. Isaacs and Trofimovich (2012) state that in many contexts of L2 implementation, the speaker's ability to be understood matters more than the quality or nativelikeness of the accent. By involving the basic elements of speech, the issues of phonological errors can be diminished.

At present, one of the salient challenges that is still faced by Indonesian EFL learners has been the pronunciation errors of segmental features. In Zahro's study (2021) found that the majority of Indonesians tend to show consonant errors. He further mentioned six factors that influence listeners' perception of speakers' pronunciation deviations, which include aspiration, orthographic system, blended segments, absent phonemes, different articulation, and homophony. Consistent with the researcher's observations, English learners continue to struggle with the proper vowels and consonants, implying the need for phonetic training. Reed and Levis (2019), thus, assert that segmental features should be prioritized in pronunciation pedagogy, whilst Collins and Mees (2013) contend that supra-segmentation (stress and intonation) surpasses segmentation in intelligibility.

Beyond segmental issues, EFL learners also grapple with supra-segmental concerns notably stress. As Lasut (2015) pointed out, they tend to place stress on syllables randomly, which leads to unintended meaning changes. Importantly, they commonly posit the same strength, length, and tone to each syllable, thus failing to differentiate the syllables. Suciati and Diyanti (2021) also discovered that learners either incorrectly placed stress within syllables or omitted stress entirely at the sentence level. This phenomenon occurs as the Indonesian stress pattern, syllable-timed, diverges from the stress-timed of English, and stress is a neglected aspect of



rarely being explicitly addressed in teaching and learning. Stress distorts the phonological structure of the word, thus obscuring the lexeme in communication (O'Connor, 2006). This has prompted many researchers to carry out investigations to better grasp the nature of this linguistic phenomenon.

Despite years of formal English education, many EFL learners still struggle with segmentation and suprasegmentation as discussed earlier. Errors are indeed an inevitable part of the learning process. Nevertheless, the real priority in effective communication is to ensure intelligibility, not perfection or nativelikeness. In order to explore this phenomenon further, the researcher will carry out a study at SMA Negeri 21 Makassar.

This study aims to conduct a comprehensive exploration of segmental (vowels and consonants) and supra-segmental (stress) errors at the lexical level employing GA and RP transcriptions. Errors in segmentation will be categorized according to Derwing and Munro's scheme. The significance of this study lies in its comprehensive analysis of pronunciation errors which will shed some lights on the common error patterns and types. By identifying these issues, this research will yield data-driven insights that are expected to develop the English curriculum for EFL learners to achieve intelligible pronunciation. Lastly, this study not only enhances pedagogical practices but also fosters cultural awareness and appreciation for linguistic diversity, making it an important contribution to the field.

1.2 Identification of the Problems

1. Indonesian EFL learners frequently commit segmental errors across vowels and consonants.
2. Indonesian EFL learners repeatedly commit pronunciation errors of the supra-segmental features of word and sentence stress.

1.3 Scope of the Research

This research focuses on the analysis of segmental (monophthong, diphthongs, fricatives, nasal, clusters) and supra-segmental (stress) errors at the lexical level produced by high school learners, specifically class XI learners of SMA 21 Makassar.

1.4 Research Questions

1. What are the kinds of pronunciation errors made by EFL learners on selected English vowels and consonants?
2. What are the types of pronunciation of stress on selected English words made by EFL learners so that they are considered errors?

1.5 Research Objectives

1. To describe the kinds of pronunciation errors of selected vowels and consonants made by EFL learners.
2. To describe the types of pronunciation errors of stress made by EFL learners.



1.6 Significance of the Research

1.6.1 Theoretical Significance

This study is projected to have the potential to contribute to the scope of phonetics and phonology through the investigation of lexical-level pronunciation errors made by non-native speakers.

1.6.2 Practical Significance

a. English Educators

The insights from this study can be beneficial to equip educators with better strategies in assisting students to overcome pronunciation difficulties.

b. English Learners

This study aspires to provide English learners with a comprehensive understanding of common pronunciation errors and its types which can assist learners in identifying specific areas that require improvement, such as mastery of challenging phonemes and stress patterns, thus improving their phonation skills.

c. Future Researchers

The findings of this study are expected to serve as a valuable dataset for future linguistic and educational research.

1.7 Previous Studies

The first study by Datu (2025) with the title “Achieving Speaking Proficiency for Professionals: Segmental and Suprasegmental Challenges”, aims to examine the segmental and supra-segmental challenges faced by 235 Indonesian professionals in achieving English-speaking proficiency within business context. This study employs a descriptive qualitative method and the data were gathered through questionnaires and voice recordings, which were then analyzed by phonological error analysis. The findings revealed difficulties with the fricatives /v/ and /θ/ sounds, misplacement of word stress, intonation errors, and substitution of consonants.

The next study carried out by Nuraini, et al. (2024) entitled “Decoding the Suprasegmental Aspect: A Deep Dive into Word Stress Errors in English Pronunciation”. This study explores the challenges students face in placing stress in pronunciation, specifically identifying the word categories, the syllable positions, and the predominant types of errors that posed the most difficulties. Using a quantitative



he researchers sampled 35 students from Tadulako University in pronunciation tests. The results revealed that verbs were the category, with 53 errors. For the syllable position, the ultimate was the most difficult in placing stress. Regarding linguistic category, nouns, verbs, and adjectives. This study emphasized that students struggle with stress placement due to their native language influence.

Another study done by Junn (2024) explored “Segmental and Suprasegmental Pronunciation Patterns of Japanese Learners of English”. This study investigates the pronunciation patterns of two Japanese learners of English who have been exposed to American English, focusing on segmental and suprasegmental features compared to the General American (GA) model. Using pre-determined dialogues, this study analyzes the participants’ pronunciation based on GA model and highlights common pronunciation errors encountered by them. The findings show that while segmental and supra-segmental errors still exist, early exposure to English and additional English education had a positive impact, which enables the learners to overcome some challenges typically faced by other Japanese learners.

Besides, the exploration conducted by Purnama, et al. (2023) under the title “Detecting Mispronunciations of Non-Native (L2) Post-Graduate Students of English Language Education in Indonesia” aimed to identify the mispronunciations committed by 70 non-native postgraduate students enrolled in English Department, Indraprasta PGRI University. The researchers employed a qualitative method, utilizing content analysis techniques to investigate phoneme errors. The data were collected through video recordings, semi-structured interviews, and reading tasks, with participants drawn from second and third-semester students. The main findings revealed that 61% of the students exhibited pronunciation deviations, with errors occurring in vowels, consonants, diphthongs, and consonant clusters.

In addition, the study undertaken by Huda and Dewanti (2022) with the title “Analyzing Mispronunciation Errors in English Learning and Teaching” aims to examine mispronunciations committed by EFL teachers, especially in English vowel sounds, and identify the causes of such mispronunciations. It is a qualitative descriptive research, which analyzes the pronunciation of a selected elementary school English teacher in Pandeglang, who was asked to pronounce 62 English words and fill out a questionnaire on external factors affecting pronunciation errors. The findings revealed that the teacher mispronounced vowels (monophthongs, diphthongs, and triphthongs) because of interlingual transfer, intralingual transfer, grapheme-sound differences, hypercorrection, and word similarity. The external factors of errors involve educational background and lack of practice.

The last study by Awololon, et al. (2021) titled “Segmental Pronunciation Errors Made by the Lamaholot Speakers of Junior High School Students” aimed to investigate how pronunciation errors were made and the factors causing such errors among Lamaholot-speaking junior high school students. The researchers utilized the Simak Libat Cakap method with bait questions to elicit how the students pronounced basic English words.

In addition, an observation was applied to observe the students’ pronunciation was utilized to analyze the phonological contrastive Lamaholot language and English. The findings indicated that to make more errors in pronouncing consonants than vowels, consonants /v/, /θ/, /ð/, /ʃ/, /ʒ/, and /z/, which do not exist in the inventory. Furthermore, the students consistently failed to



pronounce the /p/ and /d/ in word-final consonant clusters, which are not recognized in the Lamaholot syllable structure.

The current study offers several distinctions compared to prior research above: unlike previous studies, this study combines General American (GA) and Received Pronunciation (RP) phonetic transcripts as a reference for pronunciation errors; in addition, this study is pioneering in its application of Derwing and Munro's concept, which has not been utilized in earlier research to analyze segmental errors; and finally, the focus of this study narrowed to selected segmental such as monophthong, diphthongs, fricatives, nasal, and clusters, as well as supra-segmental namely stress at the lexical level, setting it apart from previous studies.

1.8 Theoretical Background

1.8.1 Phonetics

Phonetics is considered as a branch of descriptive linguistics, as it emphasizes the systematic observation and analysis of sounds. The field of phonetics concentrates on the sounds used in speech, including how they are produced, transferred as sound waves from the speaker to the listener, and perceived by the listener (Rogers, 2000). In other words, phonetics is the study of how we make and hear speech sounds, which helps us understand how different sounds form words. To be more specific, Crystal (2008) divided phonetics into three branches:

- a. Articulatory phonetics deals with the production of sounds. It examines the role of different speech organs, such as tongue, lips, vocal cords, and other speech organs.
- b. Acoustic phonetics explores the physical properties of sounds as they transmit through the air as sound waves. It includes features like frequency, amplitude, and duration of sounds.
- c. Auditory phonetics investigates how speech sounds are perceived by the ear and processed by the brain.

Moreover, in phonetics, there are many important functions, but two essential ones related to this study are enhancing communication and advancing language study. First, phonetics sharpens communication by analyzing speech sounds. It improves the intelligibility of pronunciation, fosters better understanding of accent, and facilitates interaction across languages as well as dialects. Secondly, phonetics advances the study of language by offering a systematic understanding of sound systems, assisting linguists in documenting languages and exploring dialectical



of how sounds are organized into patterns and systems within 13; Davenport & Hannahs, 2010). In other words, phonology is of theoretical linguistics, as it deals with abstract rules and how sounds are organized in languages. Phonology sheds light

on how speech sounds are combined to form words by outlining the boundaries that determine which combinations are possible and natural in a language. For instance, English allows consonant cluster like /tr/ in “trial”, “trophy”, or “triangle. However, no word in English begins with /tl/, as English phonotactic rules do not allow the sequence /tl/ at the beginning of a word. Phonology also includes variations in pronunciation. For example, the English plural suffix -s/es, pronounced as /s/ in *books* /bʊks/ (after unvoiced sound /k/). When it follows a voiced consonant like /m/, it is pronounced as /z/, as in *dreams* /dri:mz/. Lastly, it is pronounced /ɪz/ in *watches* /wɑ:tʃɪz/ (after sibilant sounds /ch/). These breakdowns show how phonological rules shape word structure and how pronunciation can adapt to make pronunciation easier and more natural.

In phonology, there is a unit called syllable, which described as the combination of vowels and consonants that form various sequences (Richards & Schmidt's, 2010). A syllable consists of three parts, which are the onset, the nucleus or peak, and the coda or final. The onset is the consonant that appears at the beginning of the syllable, the nucleus is typically a vowel that forms the core of the syllable, and the coda is made up of any consonant that appears at the end of the syllable. The basic structure of a syllable is represented as CVC, where 'C' shorts for consonants and 'V' for a vowel. For example, in the word *sun* /sʌn/, the onset is /s/, the nucleus is /ʌ/, and the coda is /n/, making it a CVC syllable.

1.8.3 Pronunciation

Pronunciation integrates the insights of both phonetics and phonology, as it relates to the way sounds, words, and sentences are produced. Pennington and Rogerson (2019) mention that pronunciation is the most fundamental thing in conveying a message. Accurate pronunciation ensures that the speaker's intended message is understood clearly by the listener, which reduces the likelihood of misunderstandings or communication breakdowns. This is why pronunciation serves as a communicative resource in communication.

English pronunciation varies across accents, showing the diversity of phonetic systems. Two well-known English accents have been Received Pronunciation (RP) and General American (GA). Traditionally, RP is associated with prestige in British English, as Laver (1994) mentions that the word 'Received' in Victorian times as 'received in polite community', provides a historical perspective into the roots of the RP accent. GA, meanwhile, is the standard accent in the United States, mainly outside the East and South regions. The major difference can be identified between RP and GA accents on the word *garage* which is pronounced /gær.tɪdʒ/ or /'gær.ɑ:ʒ/



in GA, it is pronounced /gə'reɪʒ/. The pronunciation differences of GA bring out variations in vowel, consonant articulation, and these differences prove the complexity of pronunciation, which are all suprasegmental features.

1.8.4 Segmental Features

Segmental features are the properties of individual segments (sounds) such as vowels and consonants. These features have a greater impact in shaping speech intelligibility as they distinguish one sound from another, allowing the speaker to form words and convey meaning. In addition, these sounds are categorized according to their articulatory and acoustic characteristics, such as their manner and place of articulation.

a. Vowels

The sound of vowels is produced when air flows freely from the larynx to the lips without any obstruction (Roach, 2009), simply described as speech sounds produced with an open vocal tract. Vowels are created by shaping sound through the precise positioning and movement of the tongue, lips, and jaw within the vocal tract. Moreover, there are three types of vowel sounds:

- 1) Monophthongs, which are pure vowels that remain stable and do not glide like the /i:/ phoneme in a word *field* /fi:ld/.
- 2) Diphthongs, which glide between two vowels within the same syllable as in *high* /haɪ/ and *now* /naʊ/.
- 3) Triphthongs, which are a sequence of three vowels in a single syllable, for instance, /aɪə/ in *quiet* /'kwaɪət/.

b. Consonants

Consonants are sounds produced by partially or completely obstructing the stream of air through the vocal tract. Unlike vowels, which are shaped with the open vocal tract, consonants are often formed by the interaction of speech organs such as the tongue, throat, teeth, or lips. According to Carley and Mees (2020), the concept of consonants is based on three factors:

1) Voicing

The term voicing points to the action of the vocal cords when producing a consonant. It can be categorized by whether the vocal cords vibrate (voiced) or not (voiceless). Voiced sounds occur when the vocal cords vibrate as air flows through them, producing voiced sounds like /b/, /dʒ/, /g/. While voiceless sounds occur when the vocal cords do not vibrate, creating voiceless sounds such as /p/, /tʃ/, /k/.

2) Place of Articulation

Place of articulation refers to the particular area in the vocal tract where articulation occurs once a consonant sound is produced. It engages action between an active articulator (the tongue, lips, or glottis) and a passive articulator (the teeth, ridge, or palate).



Table 1. Places of articulation

Place	Active articulator	Passive articulator	Consonants
Bilabial	Lower lip	Upper lip	/p b m/
Labio-dental	Lower lip	Upper incisors	/f v/
Dental	Tongue-tip	Upper incisors	/θ ð/
Alveolar	Tongue-tip	Alveolar ridge	/t d n s z l/
Post-alveolar	Tongue-tip	Rear of alveolar ridge	/tʃ/
Palato-alveolar	Tongue-tip, blade, and front	Alveolar ridge and hard palate	/tʃ dʒ ʃ ʒ/
Palatal	Front of tongue	Hard palate	/j/
Velar	Back of tongue	Soft palate	/k g ŋ/
Glottal	Vocal folds	Vocal folds	/h/
Labial-velar	Back of tongue	Soft palate	/w/
	Lips	Lips	

Source: Carley & Mees, 2020

3) Manner of Articulation

Manner of articulation describes how the airstream is manipulated by the vocal tract to produce a consonant. This involves the interaction between different speech organs such as the lips, teeth, tongue, and velum, and how they work together to control airflow. Depending on how much the airflow is blocked, different types of sounds are created.

Table 2. Manner of articulation

Manner of Articulation	Description	Examples
Stops (Plosives)	airflow is completely stopped momentarily and the released	[p], [b], [t], [d], [k], [g]
Fricatives	airstream is forced through a narrow constriction, causing turbulence	[e], [f], [v], [θ], [ð], [s] [z], [ʃ], [ʒ], [h]
Affricates	an immediate stop of air and followed by a fricative release	[tʃ], [dʒ]
Nasals	air escapes via the nose due to a closed mouth/the lowering of the velum	[m], [n], [ŋ]
Approximants	articulators (tongue and palate) come close to each other, but do not create turbulence	[r], [l], [j], [w]

Furthermore, not only regular consonants and vowels that belong to segmental features, but also consonant clusters, which are sequences of two or more consonants that appear in the same syllable without a vowel separating them. In



Clusters can be found at different positions in a word. Beginning start of a word, such as *gr* in *green*, *spr* in *spring*, or *tr* in *tree*. ar between vowels in a word, like *ld* in *building*, *lk* in *walking*, or nd clusters occur at the end of a word, such as *sk* in *task*, *lf* in

1.8.5 Supra-Segmental Feature (Stress)

Supra-segmental features include elements such as intonation, rhythm, and stress. Among these, stress at the lexical level is crucial for intelligibility in English as a Second Language (ESL) and English as a Lingua Franca (ELF) settings (Levis, 2018). For ESL/EFL learners, mastering word-level stress will elevate their speaking ability, which is necessary for effective communication in multicultural interactions. Besides, in ELF contexts, where speakers come from diverse linguistic backgrounds, maintaining accurate stress patterns is vital for mutual comprehension. Therefore, misplaced stress can cause communication barriers, as it might change the meaning of words or confuse the listeners.

Stress has several different functions in English. First thing first, stress plays an important role in distinguishing between words with identical spellings but differ in pronunciation and meaning. To give an example, the noun *project* (a planned work) is pronounced as /'prɒdʒekt/, contrasts with the verb *project* (to throw something to fall forward or to estimate) articulated as /prə'dʒekt/. Secondly, Ladefoged and Johnson (2011) argue that stress also has a syntactic function in differentiating between compound nouns and phrases (adjective followed by nouns). In English, compound nouns generally have primary stress on the first element like **'greenhouse** (a glass building for growing plants), while phrases generally have stresses on the second element or both elements **'green 'house** (a house painted green). As such, the syntactic functions of stress help clarity and comprehension in spoken language.

Stress in syllables can be identified by the speaker's production and listener's perception. The first way involves the "production" of stress, where the speaker requires more muscular tension compared to unstressed syllable. The second way focuses on the "perception", where listeners perceive stressed syllables as more salient based on their prominence. Moreover, Roach (2009) states that all stressed syllables share the characteristic of prominence, which is produced by four primary factors:

- a. Loudness: Stressed syllables are remarked as louder than unstressed ones.
 - b. Length : The length of a syllable plays a significant role in its prominence. If one syllable in a sequence is longer, it tends to be heard as stressed.
 - c. Pitch : Pitch is related to the frequency of vocal fold vibrations that affects stress perception.
 - d. Quality : A syllable with a distinct vowel quality from its neighbors tends to be perceived as stressed.
- all of these factors determines stress, with pitch often playing a ng stress, as it provides clear signal through variations in vocal



ally classified into different levels according to its prominence, s, which is the strongest type of stress, that makes the syllable

most prominent; secondary stress, which is a weaker form compared to primary stress but still more prominent than unstressed syllables; and unstressed syllables, which are the least prominent, usually featuring a reduced vowel.

1.8.6 Errors in Pronunciation

When a speaker misarticulates a sound or a word that deviates from the standard or received form, it is called mispronunciation or pronunciation error. However, it is crucial to differentiate between errors and mistakes. Edge's (1989) argued that errors are incorrect forms that are beyond a learner's ability to correct. This means that mistakes are incorrect forms that the learner can correct. Richards and Schmidt's (2010) state that errors derive from gaps in knowledge, while mistakes made by learners result from inattention, exhaustion, carelessness, or other performance factors. Therefore, errors in pronunciation indicate learner competence, whereas mistakes represent performance limitations.

Many causes contribute to pronunciation errors in language learning, but the common ones are interlingual transfer and intralingual transfer. One common cause is the interlingual transfer or L1 interference which occurs when a learner's native language interferes with their pronunciation in the target language. On top of that, Brown (2014) argues that intralingua transfer is also one of the major causes in second language acquisition (SLA) and its negative counterparts which is known as overgeneralization often leads to difficulties. Intralingual transfer occurs from the incorrect generalizations within the target language itself. For example, an EFL learner might incorrectly pronounce the past tense *called* as /kɔ:lɪd / instead of /kɔ:ld/. This happened because they have generalized the "-ed" ending to always be articulated as /ɪd/. In short, the interlingual reflects the impact of the learner's mother tongue, while the intralingual highlights the misapplied linguistic rules within the target language, often manifests as overgeneralization.

1.8.7 Error Analysis

Error analysis is defined by Crystal (2008) as a technique for identifying, classifying, and interpreting the incorrect forms produced by foreign language learners, guided by linguistic tenets and procedures. This comprehensive method can provide a better understanding into the gap between learners' interlanguage (a transitional system blending native and target language elements) and the linguistic norms of English as the target language. Therefore, error analysis is a diagnostic and pedagogical tool in understanding second language acquisition by examining the errors learners make.



Error analysis serves as a critical foundation for improving language teaching. Insights gained from error analysis allow educators to pinpoint challenges and refine their teaching methods effectively. It also informs the development of language learning strategies, assisting learners to build competence in oral communication. Ultimately, error analysis provides critical insights with practical applications enabling educators, whether to explore the intricacies of pronunciation issues.

1.8.8 Classification of L2 Segmental Errors

Classification of L2 (second language) segmental errors, proposed by Derwing and Munro (2015), is a framework employed for sorting mispronunciation of segmental. In the realm of linguistics, it allows a detailed analysis of segmental errors such as vowels and consonants. This basis aids in distinguishing the precise types of errors committed by ESL/EFL learners, which can then inform teaching and learning strategies to improving intelligibility and comprehensibility. Derwing and Munro classify segmental errors into several categories:

Table 3. Classification of L2 segmental errors

Type	Description	Examples
Insertion	including a segment not present in the target form	/lɪvəd/ for 'lived' (/lɪvd/)
Deletion	not including a segment that is present in the target form	/sɪk/ for 'six' (/sɪks/)
Substitution	replacing a segment in the target form with a segment from a different phonemic category	/kæt/ for 'cat' (/kæɪt/)
Distortion	producing a segment in the target form in a way that may be noticeably non-target, but which does not change the phonemic category of the segment	/k/ in 'caught' ([kʰɑt]) produced with audible but short aspiration instead of target-like (longer) aspiration

Source: Derwing & Munro, 2015

Moreover, classifying segmentation errors is important as they are a major source of intelligibility problems. Errors such as sound insertion, sound deletion, sound substitution, and sound distortion disrupt the expected phonological patterns in speech perception. Not only are those types of errors the cause of intelligibility problems, but also links between words, the use of stress, rhythm, and intonation (Kenworthy, 1988).

1.8.9 Intelligibility

Intelligibility is defined by Munro et al. (2006) as the degree to which an interlocutor's words are genuinely understood. In the traditional sense, Levis (2018) defines intelligibility as how well the speaker can utter decodable speech for the listener. Accordingly, the researcher inferred that intelligibility is a two-way process involving both the speaker's clarity and the listener's comprehension. It reflects how well the speaker produces decodable speech and how successfully the listener understands it. Factors such as the speaker's pronunciation, the listener's knowledge, language skills, and sociolinguistic influences all affect understanding in communication.



strongly correlated with accuracy, though this does not imply
nds must be perfectly accurate. Instead, the perception and
nts need to be sufficiently accurate to trigger the intended
ner's mind (Levis, 2018). Intelligibility differs from nativelikeness
nunciation components, such as proper accent, segments,
nd stress. Nativelikeness aims to mirror the nuanced details of
as a standard for advanced learners, although it is not always

necessary for successful communication. Hence, intelligibility principle highlights that not all pronunciation elements are equally crucial for being understood, meaning that communicative success is more important than nativeness (Levis, 2020). Align with Levis' work (2018) noting that only segmental features and word stress have a high likelihood of affecting intelligibility at the lexical level.

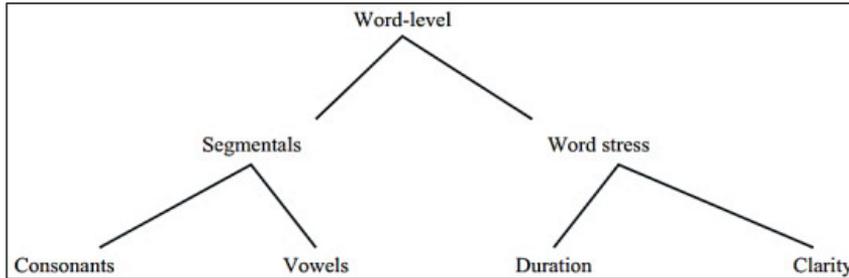


Figure 1. Word-based features important of intelligibility

Source: Levis, 2018



CHAPTER II

RESEARCH METHODOLOGY

2.1 Research Design

This study applies a qualitative research design. A qualitative design is considered as an inquiry paradigm that explores phenomena within their natural settings, emphasizing the researcher's interpretation of the data. In addition, data analysis within this framework is inherently inductive, as the researcher identifies patterns and concepts that emerge from the data collected, instead of testing a pre-existing hypothesis.

Qualitative research employs various methods to collect and interpret non-numerical data. First, interviews, either in-depth, semi structured, or unstructured interviews to gain personal insights. Second, focus groups, guided discussions to explore shared experiences and group dynamics. Third, observation, the study of participant or non-participant behaviors in real-group settings. Fourth, examination of written, visual, or audiovisual materials. Finally, case study, an in-depth investigation of an individual, group, or organization.

2.2 Research Instruments

A research instrument is a systematic tool or technique designed to collect, measure, and analyze data relevant to the objectives of a study. The research instruments employed in this study encompassed the researcher, an audio recording device (Voice Memo), and an oral production test featuring selected vocabulary list. The list comprises *18 words for segmental* and *8 words for stress*. These vocabularies were thoughtfully selected for their balanced complexity, offering both challenge and accessibility for EFL learners. Additionally, these lexical items demonstrate relevant phonological characteristics, which makes them suitable for comprehensive linguistic analysis. The following tables present a list of 26 words:

Table 4. Segmental words list

Segmental	Words	RP	GA
Monophthong /ə/	Upon	ə'pʊn	ə'pɑ:n
	Cousin	'kʌz.ən	'kʌz.ən
Diphthongs /eɪ/	Coat	kəʊt	kout
	Evoke	ɪ'vəʊk	ɪ'vouk
	Asia	'eɪ.ʒə	'eɪ.ʒə
	Break	breɪk	breɪk
	Throat	θrəʊt	θrou̯t
	Three	θri:	θri:
	Shop	ʃɒp	ʃɑ:p
	Cash	kæʃ	kæʃ
	Music	'mju:zɪk	'mju:zɪk



	Scissor	'sɪz.əʃ	'sɪzə
Nasal /ŋ/	Finger	'fɪŋ.gə	'fɪŋ.gə
	Anger	'æŋ.gə	'æŋ.gə
Clusters /θr/, /nt/	Thrill	θrɪl	θrɪl
	Thread	θred	θred
	Paint	peɪnt	peɪnt
	Plant	plɑ:nt	Plænt

Table 5. Suprasegmental (stress) words list

Supra-Segmental	Words	RP	GA
Verbs	Record	rɪ'kɔ:d	rɪ'kɔ:rd
	Donate	dəʊ'neɪt	'dɔʊ.neɪt
	Address	ə'dres	ə'dres
	Frustrate	frʌ'streɪt	'frʌstreɪt
Nouns	Puzzle	'pʌz.əl	'pʌz.əl
	Epiphany	ɪ'pɪf.ən.i	ɪ'pɪf.ən.i
	Buffet	'bʊf.ɪ	bə'feɪ
	Leisure	'leɪ.əʃ	'li:.ʒə

2.3 Sources of Data

The data source for this study was the pronunciation of 18 selected participants. The pronunciation recordings of the participants served as the primary data. These participants were carefully chosen using purposive sampling, a technique that allows researcher to intentionally select individuals who are most relevant to the study's objectives. Purposive sampling, also known as judgmental, selective, or subjective sampling, is a non-probability sampling technique employed in qualitative study. It involves the deliberate selection of participants, groups, or settings based on their relevance to the study's research questions and objectives.

To ensure consistency and relevance in the data collection, the researcher established several criteria for the participants. First, all participants were required to be high school students from Class XI to maintain uniformity in their educational background. Second, participants were chosen based on the number of years they had studied English, starting from elementary school to high school. This criterion ensures that all participants have undergone a relatively similar duration of formal English instruction.



In addition to the primary data, this study also draws upon secondary data. The secondary data is obtained from existing literature, previous studies, and other sources relevant to segmentals and suprasegmentals. These sources provide support and comparative insights, thus enriching the interpretation of the primary findings.

2.4 Methods of Data Collection

1. Participant Recruitment

Initially, participants will be selected based on the predefined criteria. Once selected, they will be provided with detailed information regarding this study. Those who agree to participate will be scheduled for individual meetings with the researcher on a rolling basis. During these sessions, the participants will be introduced to the task that requires them to read aloud 26 selected words.

2. Oral Production Test

Prior to the reading task, the participants will be instructed to carefully review the words to familiarize themselves with the pronunciation. They will then read each word aloud while the researcher record their oral production using Voice Memos.

3. Transcribing Data

The recorded pronunciations will be carefully transcribed into phonetic transcripts by the researcher, using the standard conventions of Received Pronunciation and General American as measurement criteria.

2.5 Methods of Data Analysis

Data were analyzed according to Crystal's (2008) analysis, with *segmental* involving identification, classification (Derwing and Munro's classification of segmentation errors) and interpretation, whereas *supra-segmental* was limited to identification and interpretation.

2.5.1 Segmental Analysis

1. Tabulating the Transcribed Data

There were five tables representing monophthong, diphthongs, fricatives, nasal sound, and consonant clusters. Each table contains the participant's transcribed pronunciation and phonetic transcripts of RP and GA.

2. Identifying Pronunciation Errors

At this stage, errors are identified by comparing participants' production of segmental sounds with standardized reference models, namely RP and GA.

3. Classifying Pronunciation Errors &

Pronunciation errors made by participants will be categorized according to Derwing and Munro's classification, which includes insertion, deletion, or distortion.

Identifying Pronunciation Errors

In this stage, the researcher carried out a comprehensive analysis of the participants' pronunciation errors of the selected segmental features.



2.5.2 Supra-Segmental (Stress) Analysis

1. Tabulating the Transcribed Data

The transcribed pronunciations of the participants were organized into two tables, one for nouns and the other for verbs. Each table features the participants' pronunciations along with the phonetic transcripts in RP and GA.

2. Identifying Pronunciation Errors

At this stage, the researcher identified word stress errors by analyzing the transcribed speech samples of EFL learners and comparing them with standard word pronunciations according to RP and GA phonetic transcript references.

3. Interpreting Pronunciation Errors

The researcher will interpret and explain how EFL learners make stress pronunciation errors at the lexical level of verbs and nouns. This analysis will focus on the patterns and tendencies in their stress placement.

