
**EFL STUDENTS' SCHWA (/ə/) PRONUNCIATION ERRORS IN
PHONETICS AND PHONOLOGY LEARNING****Ade Putri Ifanny¹, Yuli Herman², Risza Dwiputri³, Afdaleni⁴**¹Universitas Mahaputra Muhammad Yamin
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Email: afdaleni_09@yahoo.com**ABSTRACT**

The schwa vowel (/ə/) is the most frequently occurring vowel in English and plays an important role in natural speech. Although previous studies have examined schwa pronunciation among Indonesian EFL learners, few have analyzed errors based on word position and error type, particularly among students who have studied phonetics and phonology. This study aimed to analyze students' schwa pronunciation errors according to word position and error category. A descriptive quantitative design was employed involving 15 fourth-semester students of the English Education Department at Universitas Mahaputra Muhammad Yamin, Solok. Using total sampling, data were collected through a pronunciation test consisting of 30 English words containing schwa sounds in initial, medial, and final positions. The data were analyzed using error analysis procedures. The results showed that pronunciation errors occurred in all word positions, with the highest error rate in medial-position schwa (37%), followed by final-position (29%) and initial-position schwa (13%). Substitution was the most frequent error type (25%), while omission errors were rare (2%) and no addition errors were found. These findings indicate that students' pronunciation difficulties were mainly influenced by first-language interference, limited phonological awareness, and inadequate understanding of English stress patterns. Further studies with larger and more diverse samples are recommended.

Keyword : *Schwa vowel, vowel reduction, error analysis, EFL pronunciation, phonological awareness*

INTRODUCTION

Pronunciation is a fundamental component of English oral communication because it directly affects intelligibility and comprehensibility. Learners who possess adequate grammatical and lexical knowledge may still experience communication breakdowns when pronunciation is inaccurate. According to Derwing and Munro (2015), pronunciation plays a

crucial role in successful communication because listeners rely heavily on accurate speech sounds to interpret meaning. In English as a Foreign Language (EFL) contexts, pronunciation remains one of the most challenging aspects of language learning due to the complex relationship between English spelling and sound systems. For Indonesian learners, these difficulties are often intensified by differences between English and Indonesian phonological systems.

One of the most persistent pronunciation challenges for EFL learners is the production of the schwa vowel (/ə/). Schwa is the most frequent vowel sound in English and typically occurs in unstressed syllables (Roach, 2009). It plays an essential role in maintaining English rhythm, stress patterns, and natural connected speech. Unlike English, Indonesian vowels are generally pronounced clearly regardless of stress, making vowel reduction uncommon. Consequently, Indonesian learners often pronounce words according to spelling rather than phonological rules, resulting in inaccurate realization of schwa sounds. Failure to produce schwa appropriately may affect both intelligibility and the naturalness of speech.

Several studies have examined schwa pronunciation among EFL learners. Ariyani (2019) reported that Indonesian university students frequently substituted schwa with full vowel sounds because of orthographic influence. Similarly, Yanita and Dewanti (2024) found that even English teachers experienced difficulties producing schwa accurately due to first-language interference and limited exposure to authentic pronunciation models. Wahyuni, Bram, and Upor (2024) further emphasized that schwa production is strongly associated with stress placement and vowel reduction. Although these studies consistently identified schwa as a problematic sound, they primarily focused on general pronunciation difficulties and factors influencing pronunciation performance.

Despite these contributions, two important limitations remain. First, previous studies have rarely examined schwa pronunciation errors systematically according to word position (initial, medial, and final). Second, limited attention has been given to learners who have formally completed phonetics and phonology instruction. Consequently, little is known about whether students who have studied phonetics and phonology still experience difficulties producing schwa and which positions are most problematic. Furthermore, previous studies have seldom combined position-based analysis with classification of pronunciation error types, such as substitution, omission, and addition. This gap indicates the need for a more detailed investigation of schwa pronunciation errors within formal phonetics and phonology learning contexts.

Therefore, this study aimed to analyze students' pronunciation errors of the schwa vowel (/ə/) in terms of word position and error type among fourth-semester students enrolled in a Phonetics and Phonology course. Specifically, the study addressed the following research questions: (1) In which word positions do students most frequently make schwa pronunciation errors? and (2) What types of pronunciation errors are most frequently produced when pronouncing schwa sounds?

This study is expected to contribute both theoretically and practically. Theoretically, it enriches the growing body of research on English pronunciation, particularly schwa production among Indonesian EFL learners. Practically, the findings may assist lecturers in developing more effective pronunciation instruction by emphasizing vowel reduction, stress patterns, and phonological awareness. In addition, the findings may help students improve their pronunciation accuracy and achieve more natural spoken English.

METHOD

Research Design

This research employed a descriptive quantitative design because the study aimed to describe students' pronunciation errors systematically using numerical data analysis. According to Sugiyono (2017), quantitative research is used to obtain measurable data that can be analyzed statistically in order to provide objective descriptions of particular phenomena. In this study, the researcher focused on analyzing the pronunciation errors made by fourth-semester students in producing the schwa vowel (/ə/) during phonetics and phonology learning.

Population and Sample

The population of this study consisted of all fourth-semester students of the English Education Department at Universitas Mahaputra Muhammad Yamin (UMMY), Solok, who were enrolled in the Phonetics and Phonology course during the 2024/2025 academic year. The total population comprised 15 students. These students were selected as the target population because they had received formal instruction in English phonetics and phonology and were expected to demonstrate knowledge of English sound production, including the schwa vowel (/ə/).

This study employed a total sampling technique, in which all members of the population were included as research participants. Total sampling is appropriate when the population size

is relatively small and all members meet the characteristics relevant to the research objectives (Creswell , 2018). Therefore, all 15 students participated in the pronunciation test and recording sessions.

Although the sample size was limited, the use of total sampling ensured complete coverage of the accessible population and enabled a detailed examination of schwa pronunciation errors within this specific learning context. The purpose of the study was not to make statistical generalizations to broader populations of Indonesian EFL learners, but rather to provide an in-depth description of pronunciation error patterns among students who had formally studied phonetics and phonology. As noted by Cohen, Manion, and Morrison (2018), small-scale educational studies can provide valuable preliminary evidence and contribute to the understanding of specific linguistic phenomena in particular instructional settings.

Nevertheless, the relatively small sample size and the inclusion of participants from only one institution represent important limitations of this study. Consequently, the findings should be interpreted cautiously and should not be generalized beyond the participants involved in the research. Future studies involving larger and more diverse samples from multiple institutions are recommended to enhance the generalizability of the findings.

Instrumentation

Two instruments were used in this study: a pronunciation test and video recordings. The pronunciation test was designed to identify students' errors in producing the schwa vowel (/ə/) in different word positions, while the video recordings served as supporting data for detailed phonetic analysis and evaluator verification.

The pronunciation test consisted of 30 English words containing the schwa vowel (/ə/), divided into three categories: ten words with schwa in the initial position, ten words with schwa in the medial position, and ten words with schwa in the final position. The test items were selected based on their frequency of occurrence in English and their relevance to the phonetic characteristics of schwa described by Roach (2009). Representative examples of the test items included *about*, *around*, *ago*, and *above* (initial position); *banana*, *animal*, *support*, and *today* (medial position); and *teacher*, *doctor*, *actor*, and *farmer* (final position). The indicators of the test are presented in Table 1.

Table 1: Indicators of the Test

No	Indicator	Number of Items
1.	Schwa Vowel (/ə/) in Initial Position	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2.	Schwa Vowel (/ə/) in Medial Position	11, 12, 13, 14, 15, 16, 17, 18, 19, 20

3.	Schwa Vowel (/ə/) in Final Position	21, 22, 23, 24, 25, 26, 27, 28, 29, 30
4.	Types of Errors (Substitution, Addition, Omission)	All Items Evaluated

The pronunciation model adopted in this study was British English because the target phonetic transcriptions were based on the pronunciation descriptions and IPA transcriptions presented by Roach (2009). Therefore, all students' pronunciations were compared with British English phonetic standards during the assessment process.

The pronunciation test was administered individually. Each participant was asked to read and pronounce all 30 words aloud while being recorded. Based on the test design and the number of items, each session required approximately ten minutes. The recordings were conducted in a quiet classroom environment to minimize background noise and ensure audio clarity for subsequent transcription and analysis.

Students' pronunciations were evaluated using three assessment criteria: (1) accurate production of the schwa vowel (/ə/) according to the target phonetic transcription, (2) correct realization of vowel reduction in unstressed syllables, and (3) consistency with the selected British English pronunciation model. A pronunciation was classified as correct when the schwa sound was produced accurately according to the target transcription. Conversely, a pronunciation was classified as incorrect when the schwa vowel was substituted with another vowel sound, omitted, or produced with an additional vowel sound.

Video recordings were used to support the scoring process and improve analytical accuracy. As suggested by Weigle (2012), recordings allow repeated observation of speech performance and facilitate more reliable pronunciation assessment. The recordings enabled the researcher and evaluators to review students' pronunciations multiple times before determining the final classification of each response.

Validity

The validity of the pronunciation test was established through content validity using expert judgment. Content validity is widely recommended in educational and language assessment research because it ensures that instrument items adequately represent the construct being measured (Polit & Beck, 2006; Yusoff, 2019). In this study, content validity was employed to determine whether the test items appropriately represented the pronunciation of the schwa vowel (/ə/) in initial, medial, and final word positions.

Three validators with expertise in English phonetics, phonology, and pronunciation instruction reviewed all 30 test items. Expert validation is considered an important procedure in language assessment because it helps ensure that the instrument content aligns with the objectives of the study and adequately reflects the targeted linguistic features (Cohen et al., 2018). Each validator evaluated whether an item was “essential,” “useful but not essential,” or “not necessary” for assessing students’ schwa pronunciation ability. The analysis of validity was conducted using the Content Validity Ratio (CVR) proposed by Lawshe (1975). The formula is presented as follows:

$$CVR = \frac{n_e - \left(\frac{N}{2}\right)}{\frac{N}{2}}$$

Explanation:

- n_e = Number of expert who say essential items
- N = Number of expert

The interpretation of the CVR values is shown in Table 3.2.

Table 2: Interpretation Table of Validation Result

Numbers of Validators	CVR Value	Interpretation
3 out of 3 validators	1	Valid
2 out of 3 validators	0,33	Not Valid
1 out of 3 validators	-0,33	Not Valid
0 out of 3 validators	-1	Not Valid

Adapted from Lawshe (1975)

Explanation:

- If $CVR \geq 1.00$ = the item is considered valid.
- If $CVR < 1.00$ = the item is considered not valid.

Based on the table, only items that obtain a CVR value of 1.00 (agreed by all validators) will be declared valid and suitable for use in the test instrument. Items that do not reach the minimum value must be revised or deleted. Thus, the application of logical validity through content validity and CVR analysis is expected to ensure that the instrument in this study is truly valid, representative, and appropriate for measuring students' pronunciation errors of the schwa vowel accurately and objectively. The results of the logical validity test are presented in Table 3.

backgrounds in English phonetics, phonology, and pronunciation instruction. Before conducting the assessment, the evaluators participated in a calibration session to discuss the scoring criteria, review the target phonetic transcriptions, and evaluate several sample recordings to establish a common understanding of the assessment standards (Stemler, 2004). To determine the consistency of the evaluators' judgments, inter-rater reliability was calculated using the Intraclass Correlation Coefficient (ICC). According to McGraw and Wong (1996) and Koo and Li (2016), ICC is an appropriate statistical measure for evaluating agreement among multiple raters who assess the same performance. The ICC (3,1) model, a two-way mixed-effects model with absolute agreement, was used in this study because the same fixed group of evaluators assessed all participants.

The ICC formula proposed by Koo and Li (2016) is presented as follows:

$$ICC (3,1) = \frac{MS_R - MS_E}{MS_R + (k - 1)MS_E}$$

Explanation

MS_R = Variation Between Assessed Objects

MS_E = Residual Variations / Errors

k = Number of Assessors (Validators)

In this reliability, three validators from relevant scientific fields in this study assessed each instrument using a four-point scale, where (1) will indicate not relevant, (2) will indicate less relevant, (3) will indicate quite relevant, and (4) will indicate very relevant. The assessment data was then calculated manually using the ICC (3.1) formula based on the variance and mean square values calculated from the table. In this way, reliability testing was performed mathematically with Microsoft Excel. The following table shows the criteria that Koo and Li (2016) will use as a basis for interpreting the ICC value in this study:

Table 4: Reliability Interpretation

Reliability Coefficient	Interpretation
< 0,50	Poor
0,50 - 0.75	Fair
0,75 - 0,90	Good
> 0,90	Excellent

Adapted from Koo and Li (2016)

Using this method, the ICC value could be calculated to indicate the strength and stability of the validator's agreement on each component of the instrument. If the ICC value falls between the good and excellent categories (at least 0.75), the instrument is considered highly reliable and suitable for use in research data collection. The ICC indicates that the

assessment was conducted consistently and that the instrument can be trusted to objectively measure variables using relevant expert opinion. Therefore, this method could offer statistical assurance of the quality and reliability of the research instrument. The results of the reliability calculation are presented in Table 3.5.

Table 5: The Results of Test Instrument Reliability Calculation

Component	ICC Value
MSR	6,666666667
MSE	0,042911877
k-1	2
ICC (3.1)	0,981333
Interpretation	Excellent Reliability

Based on Table 5, the reliability calculation using the ICC (3,1) formula produced a coefficient value of 0.981333. According to Koo and Li (2016), an ICC value above 0.90 indicates excellent reliability. This result shows that the pronunciation test instrument had a very high level of consistency among assessors. Therefore, the schwa vowel (/ə/) pronunciation test instrument was considered reliable and appropriate for use in measuring students' pronunciation errors objectively and consistently.

Technique of Data Collection

Data were collected through an individual pronunciation test and video recording sessions. Prior to the data collection process, all participants were informed about the objectives of the study, the assessment procedures, and the use of recordings for research purposes. Participation was voluntary, and informed consent was obtained from all participants. To protect participants' privacy, personal identities were anonymized during transcription, analysis, and reporting. Ethical considerations are important in educational research because they ensure participants' rights, confidentiality, and voluntary participation throughout the research process (Israel & Hay, 2006)

The participants were fourth-semester students who had completed formal instruction in the Phonetics and Phonology course. Consequently, they had previously been introduced to English speech sounds, phonetic symbols, stress patterns, and basic pronunciation concepts. This background was considered relevant because the study aimed to investigate schwa pronunciation among learners who had already received phonological instruction rather than among beginner learners.

The pronunciation test was administered individually in a quiet classroom environment to minimize external noise and ensure adequate recording quality. According to Mackey and Gass (2022), controlled recording conditions are essential for obtaining accurate speech samples and reducing the influence of environmental factors on pronunciation analysis. Each participant was asked to read and pronounce 30 English words containing the schwa vowel (/ə/) in initial, medial, and final positions. Based on the number of test items, each session lasted approximately ten minutes.

During the assessment, students were allowed to read each word only once in order to capture their natural pronunciation performance. All pronunciation productions were recorded using a digital video recorder to facilitate repeated observation and verification during the analysis stage. Recording spoken performances is recommended in pronunciation research because it allows researchers and evaluators to review speech samples multiple times and improve scoring accuracy (Isaacs, 2018; Levis, 2020).

After the recording process was completed, the collected recordings were organized and coded according to participant identification numbers. The recordings were then submitted to the evaluators for independent assessment before proceeding to phonetic transcription and error analysis.

Technique of Data Analysis

The collected pronunciation recordings were analyzed using a systematic error analysis procedure. Error analysis is widely employed in second language acquisition research to identify patterns of learner errors and to provide insights into the linguistic difficulties experienced by language learners (Ellis & Barkhuizen, 2005). In the present study, the analysis focused on identifying students' pronunciation errors involving the schwa vowel (/ə/) according to word position and error type.

The first stage of analysis involved reviewing all video recordings and transcribing students' pronunciations using the International Phonetic Alphabet (IPA). Phonetic transcription is an essential procedure in pronunciation research because it provides a systematic representation of speech sounds and facilitates the identification of pronunciation deviations from the target form. The transcription process followed the British English pronunciation model presented by Roach (2009), which served as the reference standard throughout the study. The use of a single pronunciation model was intended to ensure consistency in the evaluation and interpretation of students' speech productions.

After transcription, each student's pronunciation was compared with the target phonetic transcription of the corresponding word. The comparison was conducted independently by the three evaluators, who assessed whether the schwa vowel (/ə/) was produced accurately according to the target pronunciation. To enhance scoring credibility and consistency, the evaluators reviewed the recordings repeatedly when necessary. In cases of disagreement, the evaluators discussed the pronunciation and determined the final classification based on majority agreement. Such procedures are recommended in pronunciation assessment research to improve scoring reliability and reduce subjective bias (Isaacs, 2018).

The identified pronunciation errors were classified into three categories adapted from error analysis frameworks proposed by James (2013). The first category was substitution, which occurred when a student replaced the schwa vowel (/ə/) with another vowel sound, such as /a/, /e/, /i/, /o/, or /u/. The second category was **omission**, which occurred when the schwa vowel was deleted and not articulated in the pronunciation of a word. The third category was **addition**, which occurred when an extra vowel sound was inserted into the target word, resulting in a pronunciation that differed from the standard form. Pronunciations that matched the target phonetic transcription were classified as correct pronunciations. To determine the frequency and percentage of pronunciation errors, the following formula adapted from Sudijono (2018) was used:

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

With description :

P = percentage of a particular types of errors

F = frequency of a particular types of errors

N = total number of errors that occurred

The final step was to explain the data using the calculation results. Researchers studied the most common error patterns, both in terms of position and type of schwa pronunciation errors. These findings were interpreted theoretically by referring to relevant literature on phonetics and phonology. The aim of this study was to provide an accurate picture of the pronunciation errors faced by students and to provide a basis for suggestions for improving phonetics and phonology learning.

FINDINGS AND DISCUSSION

Findings

Students' Schwa Pronunciation Errors by Position

For the schwa vowel pronunciation data at the initial of a word, this analysis aimed to determine the extent to which students can identify and pronounce the schwa vowel when it appears in the first syllable. The pronunciation test generated a total of 450 pronunciation opportunities, consisting of 30 test items pronounced by 15 students. To examine the distribution of errors across schwa positions, the data were grouped into three categories: initial position, medial position, and final position. Each category contained ten test items, resulting in 150 pronunciation opportunities per position (10 words × 15 students). The analysis also focuses on students' tendency to maintain the weak nature of the schwa sound. These results could be described as follows:

Table 6: Errors Based on the Position of Schwa (/ə/)

No	Position of Schwa	Frequency	Percentage
1	Initial	20	13%
2	Medial	56	37%
3	Final	44	29%

As shown in Table 1, the medial position produced the highest number of pronunciation errors (56 errors, 37%), followed by the final position (44 errors, 29%) and the initial position (20 errors, 13%). These percentages were calculated independently within each position category using 150 pronunciation opportunities as the denominator. Therefore, the percentages are not intended to sum to 100%.

The findings indicate that schwa vowels occurring in medial syllables were considerably more problematic than those occurring in initial and final positions. One possible explanation is that medial schwa frequently appears in unstressed syllables embedded within multisyllabic words. Indonesian learners often tend to articulate vowels clearly and fully, reflecting the relatively transparent vowel system of Indonesian. Consequently, learners may have difficulty applying vowel reduction, a fundamental characteristic of English schwa production. For example, the word *banana* /bə'nɑ:nə/ was frequently pronounced as /ba'nana/, in which the schwa vowel /ə/ was replaced by the full vowel /a/. Similarly, the word *support* /sə'pɔ:t/ was often pronounced as /su'pɔ:t/, indicating that students tended to substitute schwa with a more familiar vowel sound. These findings

suggest that learners experienced difficulty reducing unstressed vowels to the centralized schwa sound.

Students' Schwa Pronunciation Errors by Error Type

The identified pronunciation errors were classified into substitution, omission, and addition errors. The percentages were calculated based on the total 450 pronunciation opportunities generated by all participants and test items.

Table 7: Errors Based on the Types of Errors

No	Type of Error	Frequency	Percentage
1	Substitution	113	25%
2	Omission	7	2%
3	Addition	0	0%
4	Correct Pronunciations	330	73%
5	Total Opportunities	450	100%

Table 2 indicates that substitution was overwhelmingly the dominant error type, accounting for 111 occurrences (24.7%). Omission occurred only seven times (1.6%), while no addition errors were identified. The remaining 73.8% represented correct pronunciations.

The dominance of substitution errors indicates that students generally attempted to pronounce every vowel but frequently failed to produce the schwa sound accurately. Rather than deleting sounds, they replaced schwa with vowels that were more familiar within their native phonological system. This pattern suggests that the primary challenge was not sound omission but difficulty in applying vowel reduction.

Linguistically, these findings indicate that students tended to rely on orthographic representations rather than phonetic realization. English spelling often encourages learners to pronounce written vowels as full vowels, whereas natural English pronunciation frequently reduces unstressed vowels to schwa. Consequently, learners pronounced words according to spelling rather than according to phonological rules governing stress and vowel reduction.

Discussion

The present study investigated schwa vowel (/ə/) pronunciation errors among fourth-semester students enrolled in a Phonetics and Phonology course. The findings revealed that substitution was the most frequent error type, while the medial position produced the highest number of pronunciation errors. These patterns suggest that schwa production remains a

challenging aspect of English pronunciation for Indonesian EFL learners despite prior exposure to phonetics and phonology instruction. The findings can be interpreted through the concepts of stress timing, phonological reduction, articulatory simplification, and interlanguage phonology.

One of the most prominent findings was the dominance of substitution errors. Students generally attempted to pronounce all vowels in the target words but frequently replaced schwa with full vowels such as /a/, /e/, or /u/. This pattern can be explained by the substantial phonological differences between Indonesian and English. English is characterized as a stress-timed language in which unstressed vowels are frequently reduced to schwa as part of natural speech rhythm, whereas Indonesian generally maintains more stable vowel realization regardless of stress placement (Levis, 2024; Saito, 2021). Consequently, Indonesian learners often transfer pronunciation patterns from their first language and produce vowels more explicitly than required in English.

From the perspective of interlanguage phonology, these substitution errors indicate that learners are developing an intermediate phonological system influenced by both Indonesian and English. According to recent second-language pronunciation research, learners frequently rely on familiar vowel categories from their first language when encountering unfamiliar target sounds, particularly when the target language contains phonological features absent from the native language (Nagle, 2022; Saito & Plonsky, 2022). Since Indonesian does not employ vowel reduction to the same extent as English, learners tend to pronounce written vowels as full vowels rather than reducing them to schwa. As a result, words such as *about* /ə'baʊt/ may be pronounced as /a'baʊt/, reflecting the influence of Indonesian phonological patterns.

The finding that medial schwa positions generated the greatest number of errors deserves particular attention because it represents the most significant pattern identified in the study. Medial schwa commonly occurs in unstressed syllables within multisyllabic words, requiring learners to simultaneously recognize word stress and apply vowel reduction. This dual demand increases both cognitive and articulatory complexity. Research on second-language pronunciation has shown that unstressed vowels are often more difficult to perceive and produce because they have reduced acoustic prominence and receive less listener attention than stressed syllables (Thomson, 2023; Kang, 2021). Consequently, learners may fail to recognize that the vowel should be reduced and instead pronounce it using a full vowel quality.

Another explanation relates to articulatory simplification. Schwa is produced with a centralized tongue position and minimal muscular effort, making it one of the most neutral vowels in English. For learners whose first language favors clearer and more stable vowel articulation, producing such a reduced vowel may feel less natural than producing a full vowel. Therefore, learners often substitute schwa with vowels that have more distinct articulatory targets. This tendency appears particularly strong in medial syllables because they frequently occur in phonological environments where vowel reduction is obligatory in English pronunciation.

The complete absence of addition errors is also noteworthy. While studies involving consonant production among Indonesian EFL learners often report epenthesis or sound insertion as a strategy for resolving unfamiliar sound combinations, the present study found no evidence of vowel addition. This finding suggests that students generally preserved the original syllable structure of the target words. Their primary difficulty was not creating additional syllables but accurately realizing the schwa vowel. The absence of addition errors therefore indicates that learners possessed adequate awareness of English word structure but experienced difficulties with vowel quality and reduction. This finding contributes to the growing body of pronunciation research by suggesting that schwa-related difficulties among Indonesian learners are primarily associated with vowel realization rather than syllable restructuring.

The findings of this study are consistent with previous Indonesian studies that reported frequent schwa pronunciation errors among EFL learners (Ariyani, 2019; Yanita & Dewanti, 2024; Wahyuni et al., 2024). However, the present study extends previous research by providing a systematic position-based analysis of schwa pronunciation and demonstrating that pronunciation difficulties vary according to schwa position within a word. Furthermore, the results support international research emphasizing the critical role of stress patterns, vowel reduction, and phonological transfer in second-language pronunciation development (Saito, 2021; Nagle, 2022; Thomson, 2023). These findings suggest that schwa pronunciation difficulties are not merely individual learner problems but reflect broader phonological differences between Indonesian and English.

The findings also have important pedagogical implications. Since medial-position schwa produced the highest error frequency, pronunciation instruction should place greater emphasis on stress awareness and vowel reduction. Evidence-based pronunciation teaching techniques such as prosodic mapping, shadowing activities, phoneme-awareness training, and

guided IPA transcription can help learners identify relationships between stress placement and vowel quality (Foote, 2022; Murphy, 2024). In addition, minimal-pair practice contrasting schwa with full vowels, such as /ə/ and /a/, may increase learners' sensitivity to subtle vowel distinctions and improve pronunciation accuracy (Baker, 2023). Integrating these techniques into Phonetics and Phonology courses may facilitate learners' understanding of English stress patterns and support more accurate schwa production.

Several limitations should be acknowledged. First, the study involved only fifteen students from a single Phonetics and Phonology class at one institution, which limits the transferability of the findings to broader EFL populations. Second, the study adopted a cross-sectional design and therefore examined pronunciation performance at only one point in time. Third, the analysis relied primarily on auditory evaluation and phonetic transcription without acoustic measurement of vowel quality. Future studies involving larger participant groups, longitudinal designs, learner background variables, and acoustic analysis software such as Praat may provide a more comprehensive understanding of schwa production among Indonesian EFL learners.

CONCLUSION AND SUGGESTION

This study found that fourth-semester EFL students experienced schwa (/ə/) pronunciation errors in all word positions, with the highest frequency occurring in medial-position schwa. Substitution was the most common error type, indicating that students tended to replace schwa with full vowels influenced by their first language and their limited understanding of English stress patterns and vowel reduction. These findings highlight the importance of integrating stress awareness and vowel reduction into pronunciation instruction through systematic practice and exposure to authentic spoken English. Although this study provides insights into schwa pronunciation among Indonesian EFL learners, its findings are limited by the small sample size and single-institution setting. Therefore, future research should involve larger and more diverse samples, examine schwa production in connected speech, and explore factors such as phonological awareness, language exposure, and regional dialect to gain a more comprehensive understanding of learners' pronunciation development.

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