

Investigating Pronunciation Accuracy: Word Stress in English Among Tenth Graders at SMK Negeri 4 Yogyakarta

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ARTICLE INFO

Keywords

Accuracy
Word Stress
Linguistic Factors
Pronunciation Ability

ABSTRACT

This paper investigates the accuracy of word stress pronunciation among tenth-grade students at SMK Negeri 4 Yogyakarta in the context of English language learning. Pronunciation accuracy, particularly word stress, poses significant challenges that are influenced by diverse linguistic factors. This study explores how these factors impact students' ability to pronounce English words accurately, with varying syllable counts and stress patterns. This research employed a qualitative design and content analysis of 24 purposively sampled students. Data collection utilized a word stress pronunciation test comprising of 25 words across different parts of speech. The analysis was conducted using PRAAT software, enabling detailed acoustic measurements and comparison with native speaker recordings and phonetic transcriptions. Results indicated an overall mean accuracy rate of 28%, categorizing students at a "fair" ability level according to Tinambunan's criteria. The findings underscored the role of linguistic factors such as segmental and suprasegmental features, phonological rules, and L2 interference in shaping pronunciation difficulties. This study contributes to understanding these complexities, laying the groundwork for future research and targeted pedagogical strategies in pronunciation instruction.

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Damayanti, Riska. 2024. *Investigating Pronunciation Accuracy: Word Stress in English Among Tenth Graders at SMK Negeri 4 Yogyakarta*. S1 Thesis. Yogyakarta: Universitas Ahmad Dahlan.

1. INTRODUCTION

Pronunciation is a fundamental aspect of language learning that significantly impacts communication effectiveness in the English as a Foreign Language (EFL) context. Accurate pronunciation, especially in the placement of word stress, plays a crucial role in distinguishing between words and conveying their intended meanings (Wells, 2006). For Indonesian learners, mastering word stress poses a significant challenge because of the phonological differences between Indonesian, a syllable-timed language, and English, a stress-timed language (Roach, 1982). These differences often result in pronunciation errors that impede mutual understanding between the speakers and listeners.

In Indonesia, pronunciation and other phonetic features of English are not heavily emphasized in English classes. Teachers often prioritize grammar, vocabulary, practical conversation, and improving listening and reading skills over pronunciation (Suciati, 2021). However, this study indicated that awareness of pronunciation aspects, including sounds, stress, and intonation, is critical for enhancing mutual intelligibility. This lack of emphasis on suprasegmental features such as word stress

significantly contributes to students' errors in word stress production. Harmer (2007) suggested that language learners should be aware of pronunciation aspects, including sounds, stress, and intonation, as these significantly affect mutual understanding.

Indonesian speakers frequently apply their native language's stress patterns when speaking English, leading to misplaced stress and misunderstanding (Widagsa et al., 2019). The phonological system of Indonesian, with its syllable-timed rhythm, contrasts sharply with the stress-timed rhythm of English, making it difficult for learners to acquire correct stress patterns in English (Zanten & Goedemans, 2009). Consequently, the frequent misplacement of word stress makes it harder for listeners to comprehend the intended message (Alkhuli, 2002).

Previous research has highlighted various factors that contribute to pronunciation difficulties among Indonesian learners, including language transfer effects from Indonesian phonology (Alghozali & Puspitasari, 2005) and limited exposure to authentic English pronunciation models (Lasut, 2015). Studies by Indrayani and Rizki (2019) and Widagsa et al. (2019) have underscored the persistent challenges Indonesian learners face in adapting to English stress patterns, providing a foundation for further investigation into localized educational contexts.

SMK Negeri 4 Yogyakarta provides a unique setting to explore these challenges among tenth-grade students, particularly those enrolled in Tourism Service Business programs. This study focuses on analyzing the ability of these students to accurately place stress in English words with varying syllable lengths (two to six syllables). By investigating the linguistic factors influencing pronunciation accuracy, this study aimed to provide empirical insights into targeted instructional strategies. These strategies are essential for bridging the phonological gap between Indonesian and English, and fostering clearer and more effective communication skills among students preparing for future careers in various industries.

Furthermore, understanding the factors that influence students' pronunciation accuracy in English word stress is crucial for enhancing language instruction. This study sheds light on how linguistic factors impact students' ability to correctly pronounce word stress in English language classrooms. The findings of this study are expected to contribute to future directions in English language education, particularly in addressing pronunciation challenges and optimizing the learning environments for Indonesian learners. By exploring these linguistic influences, educators can better tailor their approaches to pronunciation teaching, ultimately improving students' proficiency in English pronunciation in classroom settings.

2. METHODOLOGY

This study employed a qualitative research design aimed at comprehensively investigating pronunciation accuracy, specifically focusing on word stress in English among tenth graders at SMK Negeri 4 Yogyakarta. The primary objective was to understand the underlying difficulties faced by these students when pronouncing English words, particularly regarding stress placement. To achieve this, the study utilized content analysis, which allows for a detailed examination of students' pronunciation patterns and the factors influencing them. Content analysis is particularly suitable for this research because it facilitates systematic analysis of qualitative data, providing insights into the complex interplay between linguistic elements and pronunciation accuracy. The research questions guiding this study were as follows: What are the ability levels of students facing varying levels of difficulty in word stress pronunciation? Which linguistic factors contribute to these challenges? By addressing these questions, this study aimed to uncover the nuances of pronunciation difficulties and offer practical insights for improving English language instruction.

A. Research Place and Instrument

The research was conducted at SMK Negeri 4 Yogyakarta, a vocational high school with "A" accreditation, focusing on the Usaha Layanan Pariwisata (Tourism Service Business) program. This setting was chosen because of its relevance and the specific educational context provided. English lessons at this institution are held for four hours per session, with each session lasting 45 minutes. This consistent schedule allows for a comprehensive observation of students' pronunciation practices

over a defined period, specifically from December 19, 2022, to January 18, 2023. The participants were 24 tenth-grade students selected from a total of 36 students based on their average pronunciation abilities. This selection criterion ensured that the study captured a representative sample of students facing varying levels of difficulty in word stress pronunciation.

The primary instrument used in this study was a word stress pronunciation test designed to evaluate students' ability to accurately pronounce English words with different syllable counts. The test included 25 words selected from the Cambridge Dictionary, encompassing a range of two to six syllables, to assess both primary and secondary stress patterns. The test was complemented by non-participant observation, allowing the researcher to record and analyze the students' pronunciation without interfering with their natural speaking behavior. The combination of these methods provided a robust framework for collecting comprehensive pronunciation data.

Table 1. The classification of word

The Classification of Words					
Syntactic Classification	2-Syllable	3-Syllable	4-Syllable	5-Syllable	6-Syllable
Verb	Describe	Correspond	Capitalize		
	Manage				
	Respond				
Preposition	Between				
Adverb	Between			Unfortunately	Systematically
Adjective		Generous	Complicated		
Noun	Future	Division	Encouragement	Congratulation	Accessibility
		Hospital	Entrepreneur	Electricity	Autobiography
		Membership	Inspiration	Implementation	Capitalization
				Representative	Identification

The classification of words according to their syllable count ensured a comprehensive assessment of the students' ability to handle different levels of pronunciation complexity. This method allowed for a detailed examination of how students manage stress in words with varying syllable structures, thus contributing to a deeper understanding of their pronunciation challenges.

B. Data Collection

Data collection was conducted systematically using a multistep process. First, the students participated in the word-stress pronunciation test, where they listened to recordings of native speakers pronouncing the test words and then repeating the words. The pronunciations were recorded and subsequently transcribed for detailed analysis. Non-participant observations were used to gather contextual data on students' pronunciation behaviors and practices during the test. Additionally, relevant documents, such as field notes and instructional materials, were collected to provide further context and support for primary data. This triangulated approach ensured that the data collected were rich, comprehensive, and reflective of students' actual pronunciation abilities.

C. Data Analysis

The data analysis process followed the qualitative framework outlined by Miles and Huberman (1994) and involved three key activities: data reduction, data display, and conclusion drawing/verification. Data reduction was achieved using PRAAT software, which facilitated the detailed examination of audio recordings to identify misplaced and correctly placed stress from students' pronunciations by analyzing audio recordings. The data were then organized into visual formats, such as tables and charts, providing a clear display of pronunciation patterns and accuracy rates. This organization helped to identify trends and common difficulties among students. Finally, conclusions were drawn by synthesizing the findings, categorizing students' pronunciation abilities, and identifying the specific linguistic factors influencing word stress difficulties.

This comprehensive methodology ensures a robust and nuanced understanding of the pronunciation challenges faced by tenth graders at SMK Negeri 4 Yogyakarta, thus contributing to the broader field of English language education. Through all the topics that were found, the researchers identified specific areas and sub-topics, such as students' ability levels in stressing words with two to six syllables and the linguistic factors that influence stress difficulties. These factors include phonological awareness, complexity of syllable structures, and interference of students'

native language phonetics. Understanding these elements helps identify targeted interventions that can aid in improving students' pronunciation skills, ultimately enhancing their overall English language proficiency.

3. FINDINGS

The investigation into the pronunciation accuracy of word stress among tenth graders at SMK Negeri 4 Yogyakarta revealed that students have a fair level of ability, with a mean accuracy of 28% in pronouncing word stress correctly.

Table 2. The result comprises the accuracy of students and the percentages

Stress Pattern	Words	Phonetic Transcription	The Result Accuracy of the Student		The Result Accuracy in Percentage	
			Correct	Incorrect	Correct	Incorrect
2 Syllables	Between	/bi'twi:n/	8	16	33%	67%
	Describe	/di'skraib/	11	13	46%	54%
	Future	/'fju:tʃə(r)/	9	15	38%	62%
	Manage	/'mænidʒ/	14	10	58%	42%
	Respond	/'ri:spɒnd/	5	19	21%	79%
3 Syllables	Correspond	/'kɔ:ə'spænd/	11	13	46%	54%
	Division	/'di:vɪʒn/	16	8	67%	33%
	Generous	/'dʒenərəs/	11	13	46%	54%
	Hospital	/'hɔ:spɪtəl/	5	19	21%	79%
	Membership	/'membərʃɪp/	20	4	83%	17%
4 Syllables	Capitalize	/'kæp.ə.təl.aɪz/	3	21	13%	87%
	Complicated	/'kɒm.plɪ.keɪ.tɪd/	4	20	17%	83%
	Encouragement	/'ɪn.kʌrɪdʒmənt/	3	21	13%	87%
	Entrepreneur	/'ɒn.trə.prə'nɜ:z/	0	24	0%	100%
	Inspiration	/'ɪn.spə'reɪʃn/	9	15	38%	62%
5 Syllables	Congratulation	/'kɒn.grætʃ.ə'leɪ.ʃən/	5	19	21%	79%
	Electricity	/'ɪ.lek'trɪs.ət.i/	4	20	17%	83%
	Implementation	/'ɪm.plə.men'teɪ.ʃən/	5	19	21%	79%
	Representative	/'reprɪ'zentətɪv/	4	20	17%	83%
	Unfortunately	/'ʌn.fɔ:r.tʃən.ət.li/	4	20	17%	83%
6 Syllables	Accessibility	/'æk.ses.ə'bɪl.ə.tɪ/	5	19	21%	79%
	Autobiography	/'ɔ:tə.baɪ'ɒg.rə.fi/	2	22	8%	92%
	Capitalization	/'kæp.ə.təl.ə'zeɪ.ʃən/	0	24	0%	100%
	Identification	/'aɪ.den.tə'fɪ'keɪ.ʃən/	1	23	4%	96%
	Systematically	/'sɪs.tə'mæt.ɪ.kəl.i/	7	17	29%	71%
Mean of 2 syllables			9.4		39%	
Mean of 3 syllables			12.6		53%	
Mean of 4 syllables			20.2		16%	
Mean of 5 syllables			4.4		19%	
Mean of 6 syllables			3		12%	
TOTAL MEAN OF 2-6 SYLLABLES			6.64		28%	

This assessment was determined through a comprehensive analysis of the students' performance on a word stress test, which evaluated their ability to stress words with two to six syllables. The results, summarized in Table 2, indicate varying degrees of accuracy in students' pronunciation across different syllable structures.

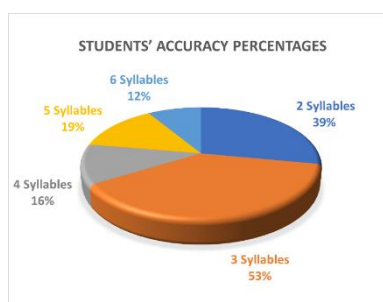


Figure 1. The students' percentage in pronouncing English word stress in 2-6 syllable

Figure 1 presents a visual representation of the percentages of accuracy, showing a detailed breakdown of student performance by syllable count. This figure illustrates the overall challenges faced by the students, particularly in words with more syllables.

A. Students' Ability to Pronounce Word Stress in Two-Syllables

The study primarily focuses on assessing students' ability to correctly pronounce word stress in two-syllable words, highlighting that the mean accuracy for two-syllable words is 39%, indicating a fair level of ability. This conclusion is supported by the data presented in Table 3, which detail the accuracy of students in pronouncing two-syllable word stress.

Table 3. The result of students' stress ability in two-syllables

Word	Stress Patterns	Respondent	Correct	Percentage	Level
Between	•	24	8	33%	Fair
Describe	•	24	11	46%	Fair
Future		24	9	38%	Fair
Manage		24	14	58%	Good
Respond	•	24	5	21%	Poor

According to the data, although some students demonstrated accurate stress placement, many struggled with consistency. The analysis identified 'manage' as the word with the highest accuracy in stress placement, where the majority of students correctly stressed the first syllable. Conversely, 'respond' shows the lowest accuracy, indicating common challenges in stress placement among participants. Specifically, only 21% of the students could correctly stress the second syllable of 'respond,' highlighting a prevalent issue in stress placement for two-syllable words among the students.

B. Students' Ability to Pronounce Word Stress in Three-Syllables

The study evaluated students' proficiency in pronouncing word stress in three-syllable words. The pie chart in Figure 1 showing finding a mean accuracy of 53%, which suggests a good level of ability. This is illustrated in Table 4, which shows that a significant proportion of students could accurately place stress on three-syllable words.

Table 4. The result of students' stress ability in three-syllables

Word	Stress Patterns	Respondent	Correct	Percentage	Level
Correspond	• •	24	11	46%	Fair
Division	•	24	16	67%	Good
Generous		24	11	46%	Fair
Hospital		24	5	21%	Poor
Membership		24	20	83%	Excellent

In three-syllables, the specific words like 'Membership' and 'Division' exhibit varying levels of success. 'Membership' had the highest accuracy with 83% of students correctly placing the stress, indicating strong familiarity with the word. On the other hand, words like 'correspond' and 'generous' showed mixed results, with only 46% of students achieving correct stress placement. This variation highlights the differing levels of difficulty faced by students using different three-syllable words.

C. Students' Ability to Pronounce Word Stress in Four-Syllables

For four-syllable words, the study found that mean accuracy dropped to 16%, indicating a poor level of ability. The findings are detailed in Table 5 and visualized in the pie chart in Figure 1. The data suggests that students face significant challenges in accurately pronouncing four-syllable words.

Table 5. The result of students' stress ability in four-syllables

Word	Stress Patterns	Respondent	Correct	Percentage	Level
Capitalize	• • • •	24	3	13%	Poor
Complicated	• • • •	24	4	17%	Poor
Encouragement	• • • •	24	3	13%	Poor
Entrepreneur	• • • •	24	0	0%	Poor
Inspiration	• • • •	24	9	38%	Fair

Words such as 'inspiration' showed the highest accuracy within this category, with 38% of students correctly placing the stress. However, other words like 'complicated' and 'capitalized' had much lower accuracy rates, with only 17% and 13% of students, respectively, placing the stress correctly. This disparity underscores the complexity and difficulty that students encounter with longer words.

D. Students' Ability to Pronounce Word Stress in Five-Syllables

This study also assessed the ability to pronounce five-syllable words, revealing a mean accuracy of 19%, which is indicative of a poor level of ability. Table 10 and Figure 1 show that most students struggled significantly with these longer words.

Table 6. The result of students' stress ability in five-syllables

Word	Stress Patterns	Respondent	Correct	Percentage	Level
Congratulation	• • • • •	24	5	21%	Poor
Electricity	• • • • •	24	4	17%	Poor
Implementation	• • • • •	24	5	21%	Poor
Representative	• • • • •	24	4	17%	Poor
Unfortunately	• • • • •	24	4	17%	Poor

The five-syllables words such as 'congratulation' and 'implementation' had the highest accuracy rates among the five-syllable words, with 21% of students correctly placing the stress. In contrast, words like 'electricity' and 'unfortunately' had lower success rates, with only 17% of students placing the stress accurately. This indicates that as word length increases, the difficulty in correct stress placement also increases.

E. Students' Ability to Pronounce Word Stress in Six-Syllables

The study analyzed the pronunciation of six-syllable words, where the mean accuracy was found to be 12%, highlighting a poor level of ability. The results are detailed in Table 7 and shown in Figure 1. The data show that students faced the greatest difficulty with the longest words tested.

Table 7. The result of students' stress ability in six-syllables

Word	Stress Patterns	Respondent	Correct	Percentage	Level
Accessibility	• ● • ↘ • •	24	5	21%	Poor
Autobiography	● • • ↘ • •	24	2	8%	Poor
Capitalization	● • • • ↘ •	24	0	0%	Poor
Identification	• ● • • ↘ •	24	1	4%	Poor
Systematically	● • ↘ • • •	24	7	29%	Fair

For six-syllable words, 'systematically' had the highest accuracy at 29%, but other words like 'accessibility' and 'autobiography' had very low accuracy rates, with only 21% and 8% of students, respectively, placing the stress correctly. The word 'identification' had the lowest accuracy, with only 4% of students managing to place the stress accurately, illustrating the pronounced difficulty that students have with very long words.

F. Linguistic Factors Influencing the Pronunciation of Word Stress

Indonesian learners encounter various challenges in mastering English pronunciation, influenced by linguistic factors, including segmental, suprasegmental, vowel and consonant reduction, phonological rules, and second language (L2) interference. First, Indonesian learners struggle with segmental features such as specific English phonemes like [ʒ] and [ʃ], often substituting them with sounds more familiar in Indonesian, leading to mispronunciations. For instance, the English phoneme [ʃ] might be replaced with [s], as seen in words like "measure" becoming "mesure" and "she" becoming "si." This substitution occurs because the Indonesian phonetic system lacks these sounds, compelling learners to resort to the nearest equivalent in their native languages. Furthermore, difficulty with diphthongs like [eɪ] also affects stress placement accuracy in words like 'Capitalization' and 'Complicated.' Indonesian speakers might pronounce 'capitalization' with misplaced stress because of the challenge of accurately producing the [eɪ] sound, impacting overall word stress and intelligibility.

Second, suprasegmental features, particularly stress patterns, significantly affect speech rhythm and intelligibility. Words like 'autobiography,' 'encouragement,' and 'identification' illustrate how misplaced stress alters pronunciation. Indonesian learners often place stress incorrectly, which disrupts the natural flow of their speech and comprehension. Stress patterns are crucial for distinguishing grammatical functions; for instance, the difference between a noun and a verb in English can be indicated by stress, as in 'record' (noun) versus 'record' (verb). Mispronunciation of stress patterns can thus lead to misunderstanding. For example, stressing the wrong syllable in 'identification' can confuse the listener and obscure the speaker's intended meaning, affecting communication efficiency.

Third, Indonesian learners face challenges in Vowel and Consonant Reduction with English schwa [ə] and reductions in vowels and consonants, which affect the natural flow of speech. This difficulty is evident in words like 'accessibility' and 'inspiration,' where learners may fail to reduce unstressed vowels to schwa, resulting in over-pronunciation of each syllable. The Indonesian phonetic inventory does not typically feature such reductions, which means that learners might pronounce 'accessibility' as [ækseɪ' bɪlɪti] instead of [ək, səə' bɪləti], thereby affecting stress placement and word rhythm. This lack of vowel reduction contributes to a more stilted and less fluid speech pattern that deviates from natural English intonation.

Moreover, Phonological processes, such as metathesis and palatalization, further complicate pronunciation. Indonesian speakers may swap sounds or substitute palatalized consonants incorrectly in words like 'between,' 'future,' and 'inspiration,' leading to mispronunciations and stress placement errors. For instance, the tendency to palatalize 'future' as [ˈfjuːtʃər] might be replaced with [futʃər], distorting both the phonetic and stress aspects of the word. Metathesis can also lead to incorrect sound sequences, as seen in 'comfortable' being pronounced as 'comfterable,' which affects the word's stress pattern and overall intelligibility (Setiawan, 2023).

Lastly, second Language (L2) Interferences resulting Pronunciation of the English [r] sound and the [ʒ] sound is significantly affected by the learners' first language (L1), leading to persistent mispronunciations. Words like 'representative' and 'respond' are frequently mispronounced because the Indonesian [r] is characterized by a rolled flap, whereas the English [r] is an alveolar approximant. This phonetic difference results in 'representative' being pronounced with a trilled [r], affecting both stress and comprehensibility. Similarly, the voiced postalveolar fricative [ʒ], found in words like 'division' (/dɪ'vɪʒən/), poses difficulties due to its absence in the Indonesian phonetic inventory. Indonesian speakers tend to replace [ʒ] with [z] or [s], resulting in words being pronounced with altered stress and sometimes different meanings

These findings underscore the complexity of accurate English pronunciation acquisition for Indonesian learners, highlighting the need for targeted instructional strategies to address specific phonetic and phonological challenges. By understanding these linguistic factors, educators can better support learners in achieving a more accurate and comprehensible English pronunciation.

4. CONCLUSION

In conclusion, this study on word stress accuracy among tenth graders at SMK Negeri 4 Yogyakarta found an overall mean accuracy rate of 28% indicating a "fair" level of ability. This mean accuracy rate demonstrated intermediate accuracy with occasional errors or inconsistencies, indicating a foundational grasp of stress patterns across syllable lengths: 39% for two-syllable words, 53% for three-syllable words, 16% for four-syllable words, 19% for five-syllable words, and 12% for six-syllable words. Despite these differences, students generally demonstrated a foundational understanding of stress patterns, with occasional errors. Factors such as segmental and suprasegmental features, vowel and consonant reduction, phonological rules, and L2 interference were identified as significant contributors to the pronunciation challenges. These insights have valuable implications for educational strategies aimed at improving English pronunciation proficiency among language learners.

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