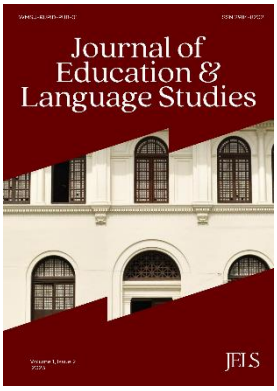


Journal of Education & Language Studies

Volume 2, Issue 1 / July 2025

Word Stress and L1 Transfer: A PRAAT-Assisted Study of Kolibugan English Learners

Dea Novieann T. Oliveros

Department of Education, Philippines

Abstract

This study investigates the pronunciation of word stress among Kolibugan learners of English at a particular high school in Sirawai, Zamboanga del Norte, Philippines. The Kolibugan learners, an Indigenous Muslim ethnolinguistic group facing distinctive obstacles in mastering English stress patterns, primarily due to the phonological characteristics of their first language, do not prioritize stress in the same manner as the proficient English language speakers. The study combines acoustic analysis using PRAAT software with learner interviews to evaluate stress placement accuracy and the factors influencing learners' performance and perception. Findings reveal that stress misplacement is common, particularly in multisyllabic words, with a noticeable decline in accuracy as word length increases. These errors suggest negative transfer from the learners' native prosodic rules. The study highlights the significance of teaching suprasegmental features, such as word stress, within English language instruction. It also calls for culturally and linguistically responsive pedagogical strategies to improve pronunciation outcomes among learners from diverse linguistic backgrounds.

Article Info

Article History:

Received:
May 13, 2025

Accepted:
July 25, 2025

Keywords:

Word stress , Kolibugan learners English pronunciation, contrastive analysis hypothesis, generative phonology

*Corresponding author

E-mail: deainfinity08@gmail.com

Cite as:

Oliveros, D. N. T (2025). Word stress and L1 transfer: A PRAAT-assisted study of Kolibugan English learners, *Journal of Education and Language Studies, 2* (1), 112-138. https://wmsu.edu.ph/jels/articles.html

Introduction

In the realm of second language acquisition, pronunciation remains a core component of communicative competence, significantly influencing a learner's ability to be understood and accepted in various social and academic contexts. Many individuals who frequently use English language may view it as impressive hence, it is necessary for communication and study across the contemporary global context.

English has become an integral part of the curriculum. Thus, to become proficient in English, learners must develop competence in the four fundamental language skills: listening, reading, speaking, and writing. Rao (2019) stated that speaking is the most important skill to master among the four main skills required for learning a foreign or second language. Moreover, mastery of various micro-skills including pronunciation is equally important. In fact, among the elements of pronunciation, word stress plays a particularly crucial role in shaping the rhythm and intelligibility of spoken English.

Stress is primarily influenced by four key features: pitch prominence, loudness, duration, and vowel quality. Typically, stressed syllables exhibit greater pitch variation, are louder and longer, and contain a full vowel compared to their unstressed counterparts. In addition, stress occurs when a syllable is given an additional force of energy (Roach, 2012). It is one of the elements that needs emphasis in teaching-learning process. This idea is akin to the quest for language research that must be addressed in the present study.

At Sirawai National High School, a significant 85% of the student population comprises Kolibugan learners—an indigenous Muslim group from

Zamboanga del Norte. These students' linguistic and cultural backgrounds likely influence the way they acquire and apply word stress in English. According to Adiana (2019), non-native English speakers often perceive and produce English sounds through the phonological structures of their first language, even when there are substantial differences between the two languages. This phenomenon is particularly evident when learners encounter sounds in English that do not exist in their native language. As a result, they may struggle to produce certain English phonemes or stress patterns accurately, often applying familiar but inappropriate patterns from their mother tongue, leading to mispronunciations.

Research on pronunciation, particularly in the context of word stress, has highlighted similar challenges faced by non-native learners. For example, Algifari (2017) examined pronunciation difficulties among students at the State Islamic University of Makassar, noting that learners frequently encounter challenges when attempting to master English stress patterns due to the influence of their first language. This study's findings resonate with the experiences of Kolibugan students, whose native languages which is typically syllable-timed that do not share the stress-timed structure of English. The Kolibugan learners, thus, may find it particularly challenging to acquire the nuanced stress patterns required for intelligible English pronunciation.

Further compounding these challenges, the SY: 2024-2025 Phil-IRI School Consolidation on the Learner's Reading Level reported that 35.66% of students were categorized as being at a frustration level in word reading. This frustration was attributed largely to difficulties in pronunciation, especially in the correct placement of stress on multisyllabic words. Such statistics underscore the pressing need for tailored instructional strategies that can address the specific phonological challenges Kolibugan students face, particularly when it comes to mastering English stress patterns. As Field (2005) emphasizes, pronunciation difficulties, especially in stress and rhythm, can hinder overall language fluency and intelligibility, further highlighting the urgency of addressing these issues in the classroom.

While L1 Transfer Theory explains much of the difficulty learners face, it offers a rather linear explanation, attributing stress errors to the direct application of native prosodic rules. Although useful for identifying negative

transfer, this theory is often criticized for oversimplifying language acquisition and ignoring learner development, variability, and adaptability over time (Odlin, 1989). In contrast, Optimality Theory (OT) (Prince & Smolensky, 1993) provides a constraint-based model of phonology that accounts for variability in learner output. OT posits that surface pronunciations arise from the interaction of ranked constraints. From this perspective, Kolibugan learners' stress errors may reflect not just transfer, but a developing interlanguage grammar where certain markedness constraints (e.g., favoring stress on early syllables) override English-specific prosodic rules.

However, OT's abstract nature and lack of explicit developmental mechanisms limit its practical applicability in L2 learning contexts. Cognitive-based models such as the Speech Learning Model (SLM) (Flege, 1995) and the Perceptual Assimilation Model (PAM) (Best, 1995) provide deeper insight into how learners perceive and internalize L2 phonological features. These models argue that accurate L2 pronunciation depends on how learners perceive and categorize new sounds relative to their L1 system. For Kolibugan learners, the inability to perceptually distinguish lexical stress in English may result in persistent misproduction, regardless of exposure or instruction. While these models explain why certain errors persist despite practice, they are often too theoretical for direct application in classroom strategies.

By comparing these perspectives, it becomes evident that no single theory can fully capture the complexities of stress acquisition among Kolibugan learners. L1 transfer highlights structural interference, Optimality Theory models constraint-driven variability, and SLM/PAM illuminate the cognitive and perceptual dimensions of L2 phonology. Taken together, they underscore the need for an integrated approach which one that considers not only linguistic background but also learner perception, developmental trajectories, and sociolinguistic context.

Moreover, many existing studies on Filipino English learners (e.g., Gonzalez, 1998; Tayao, 2008) focus primarily on segmental features like vowels and consonants, with limited attention to suprasegmentals such as stress,

rhythm, and intonation. More critically, these studies often generalize findings without addressing the unique challenges of indigenous learners such as the Kolibugan, who frequently face educational inequities, limited access to resources, and sociolinguistic marginalization (Norton, 2013; UNESCO, 2016). This research, therefore, contributes not only to the growing body of work on suprasegmentals in L2 learning but also to the development of culturally responsive pedagogies that recognize and adapt to learners' linguistic realities.

Nowadays, teachers may lack the training or awareness to identify and address these specific pronunciation issues, particularly when curriculum design is oriented toward urban, majority-language learners. Furthermore, the prevailing teaching methods often neglect suprasegmental instruction, prioritizing grammar and vocabulary at the expense of features crucial for oral communication (Celce-Murcia et al., 2010). This lack of focused instruction on stress patterns contributes to the persistence of stress misplacement among learners, potentially reinforcing negative language attitudes and hindering learners' confidence in spoken English.

Given this backdrop, it becomes imperative to investigate the nature and patterns of word stress pronunciation among Kolibugan learners. Doing so can not only illuminate the phonological processes underlying their speech but also provide insights into how their multilingual backgrounds influence English stress assignment. It is particularly important to examine whether the Kolibugan learners' stress patterns align more closely with the prosodic rules of their heritage languages rather than with standard English norms. Languages such as Subanen and Tausug have different prosodic structures that may not rely on stress in the same way as English, leading to systematic misplacement of stress by Kolibugan learners.

Despite the compelling rationale for such research, there remains a conspicuous gap in the academic literature concerning suprasegmental features particularly word stress among Kolibugan learners. While some studies have investigated pronunciation issues among Filipino English learners (e.g., Bernardo, 2017; Tayao, 2008), they tend to focus broadly on segmental phonology or general characteristics of Philippine English without disaggregating findings for indigenous groups such as the

Kolibugan. Furthermore, existing research that examines indigenous learners often prioritizes access and inclusion over detailed linguistic analysis (McCarty & Lee, 2014; UNESCO, 2016). No comprehensive empirical study to date has specifically explored how Kolibugan students perceive and produce word stress, a critical prosodic element in English that impacts intelligibility (Derwing & Munro, 2005; Hahn, 2004).

This omission represents a significant blind spot in both linguistic research and applied language pedagogy. As noted by Norton (2013), language learning is deeply tied to identity, and overlooking the linguistic realities of marginalized learners risks reinforcing systemic inequities. Without an understanding of the unique phonological and prosodic challenges faced by Kolibugan learners who often come from multilingual and culturally distinct backgrounds, educators may unintentionally apply generic instructional strategies that fail to address specific learner needs. As such, there is an urgent need for research that not only documents but also analyzes the stress-related pronunciation patterns of this underrepresented group to inform more inclusive and effective teaching practices. This research aimed to address this gap by conducting a detailed analysis of the word stress patterns observed among Kolibugan learners of English.

This study employs a combination of phonetic analysis using PRAAT software with semi-structured learner interviews to investigate English word stress among Kolibugan learners. The phonetic analysis aims to document the most common types of stress misplacement, while the interviews explore learners' awareness and understanding of English stress rules. To gain deeper insights into the challenges they face, participants were asked to describe any difficulties they experience when trying to pronounce English words with the correct stress. They also identified the types of words or communicative situations they find most challenging in terms of stress placement and explained why. Furthermore, participants were invited to share instances where they had been misunderstood due to incorrect stress, offering specific examples where possible. The study also investigates whether learners believe their native language influences how they stress English words. Finally, learners reflected on their level of confidence when using English word stress in conversations or presentations and discussed the factors contributing to their confidence or lack thereof. It also investigated how multilingualism and language contact influence these

patterns, providing a nuanced picture of the linguistic realities faced by this community. The ultimate goal is to inform the development of more inclusive and responsive teaching practices that acknowledge the specific needs of indigenous learners.

The findings of this study expected to have both theoretical and practical implications. Theoretically, the study contributes to the field of second language phonology by expanding our understanding of how stress is acquired and produced in multilingual contexts. It challenges the assumption that all Filipino learners of English share the same pronunciation profile, emphasizing the need for more disaggregated research that considers ethnolinguistic diversity. Practically, the study aims to provide actionable insights for educators, curriculum developers, and policymakers working to improve English language instruction in indigenous and multilingual settings. By identifying specific stress patterns and their potential causes, the study can guide the creation of targeted pronunciation exercises and teaching materials that are both effective and culturally sensitive.

The research is grounded in a descriptive qualitative to analyze data from learner interviews and classroom observations. The researcher administered two types of instruments which are task and questionnaire to the students of Grade 10-Diamond. The task involves a list of fifteen English words, each characterized by having primary stress on the second syllable. These words were selected based on B1 (intermediate) vocabulary level, ensuring alignment with the proficiency level of the participants. While the number of syllables in each word varies and was chosen at random, all items consistently feature stress placement on the second syllable. During the activity, the researcher instructed the students to read aloud the list, allowing for observation and analysis of their stress pronunciation patterns using PRAAT software. On the other hand, students also answered open-ended questions pertaining to word stress.

This study, therefore, sought not only to document a linguistic phenomenon but also a discourse analysis to advocate for more equitable educational practices.

Method

The present study employed a qualitative research design to comprehensively examine the pronunciation of word stress among Grade-10 Diamond students at Sirawai National High School, specifically focusing on those identified as Kolibugan learners. As members of an indigenous Muslim ethnolinguistic group in the southern Philippines, these students represent a linguistically and culturally distinct population navigating English as a second language in a multilingual setting. In alignment with Creswell's (2013) criteria for qualitative inquiry, particularly his emphasis on purposeful sampling, fifteen participants were deliberately selected based on their linguistic background and varying degrees of exposure to English. This sampling method ensured that the participants could provide rich, context-specific insights into the phenomena under investigation.

Participants were tasked with completing a structured pronunciation exercise consisting of fifteen English words, each exhibiting primary stress on the second syllable. These lexical items were carefully chosen from the B1 (intermediate) level vocabulary outlined by the Common European Framework of Reference for Languages (Council of Europe, 2001). Selecting B1-level words was important to ensure the appropriateness of the task for the learners' proficiency stage. The words also varied in syllable count randomly including two-, three-, and four-syllable items to provide a diverse range of stress contexts. Despite this variability, the consistent requirement for correct second-syllable stress allowed the researcher to target a known area of difficulty for second language (L2) English learners, particularly those whose first languages are not stress-timed (Tayao, 2008; Hahn, 2004).

In terms of ethical considerations, all participants were fully briefed on the objectives, scope, and procedures of the study prior to their involvement. This included a clear explanation of the purpose of the research, the nature of the tasks they would be asked to perform (e.g., pronunciation tasks, interviews), how their data would be used, and their right to withdraw at any point without any consequences. Written informed consent was obtained from each participant, ensuring that participation was entirely voluntary and based on an understanding of the study's aims and implications. To safeguard participant identity, all responses and recordings were anonymized using participant codes rather than names or identifying details. Confidentiality was rigorously upheld by storing digital data on

password-protected devices and securing physical documents in locked storage. Additionally, all transcriptions, PRAAT images, and interview content used in reporting were carefully screened to remove any potentially identifying information. This ethical protocol was designed not only to comply with research ethics standards but also to respect the cultural and linguistic background of Kolibugan learners, who may be part of marginalized or underrepresented communities. Such measures ensure that participants' dignity, privacy, and autonomy were prioritized throughout the research process.

During the data collection process, each participant was individually instructed to read the word list aloud. Their pronunciations were digitally recorded to preserve natural speech characteristics, a practice supported by Derwing and Munro (2005), who argue that audio recordings offer reliable data for phonological analysis by capturing authentic speech patterns. These recordings were subsequently analyzed using PRAAT, a widely utilized acoustic software tool renowned for its precision in measuring prosodic features such as pitch, duration, and intensity (Boersma & Weenink, 2022). These acoustic parameters serve as robust indicators of primary stress in English and offer an empirical basis for identifying instances of stress misplacement (Cutler, 2005). The analysis enabled the researcher to document individual and group patterns in stress production and to quantify the frequency and types of stress-related pronunciation errors.

To complement the acoustic data and add depth to the findings, the study also employed brief semi-structured interviews. These interviews provided valuable insight into learners' metacognitive awareness of English stress rules and their subjective perceptions of the challenges they face in mastering English pronunciation. This methodological triangulation—combining instrumental phonetic data with learners' reflective accounts—follows Dörnyei's (2007) recommendations for enhancing the validity and reliability of qualitative research in applied linguistics. By drawing on both observable performance and participant insight, the study aimed to generate a holistic understanding of the difficulties surrounding word stress acquisition among Kolibugan learners.

Moreover, the methodological choices in this study are grounded in the recognition that learners' pronunciation errors should not be viewed solely as isolated linguistic inaccuracies. Instead, these patterns reflect deeper influences rooted in the learners' multilingual environment and sociocultural identity (Gonzalez, 1998; Norton, 2013). In this sense, the investigation approaches pronunciation not merely as a phonetic skill, but as a socially and linguistically situated practice shaped by complex interlingual dynamics and educational access. This contextual understanding is especially vital when addressing the needs of indigenous learners, whose language learning experiences are often shaped by broader issues of marginalization, identity negotiation, and cultural continuity.

Results and Discussion

English word stress with two syllables

Table 1. Students Total Result in Two Syllables

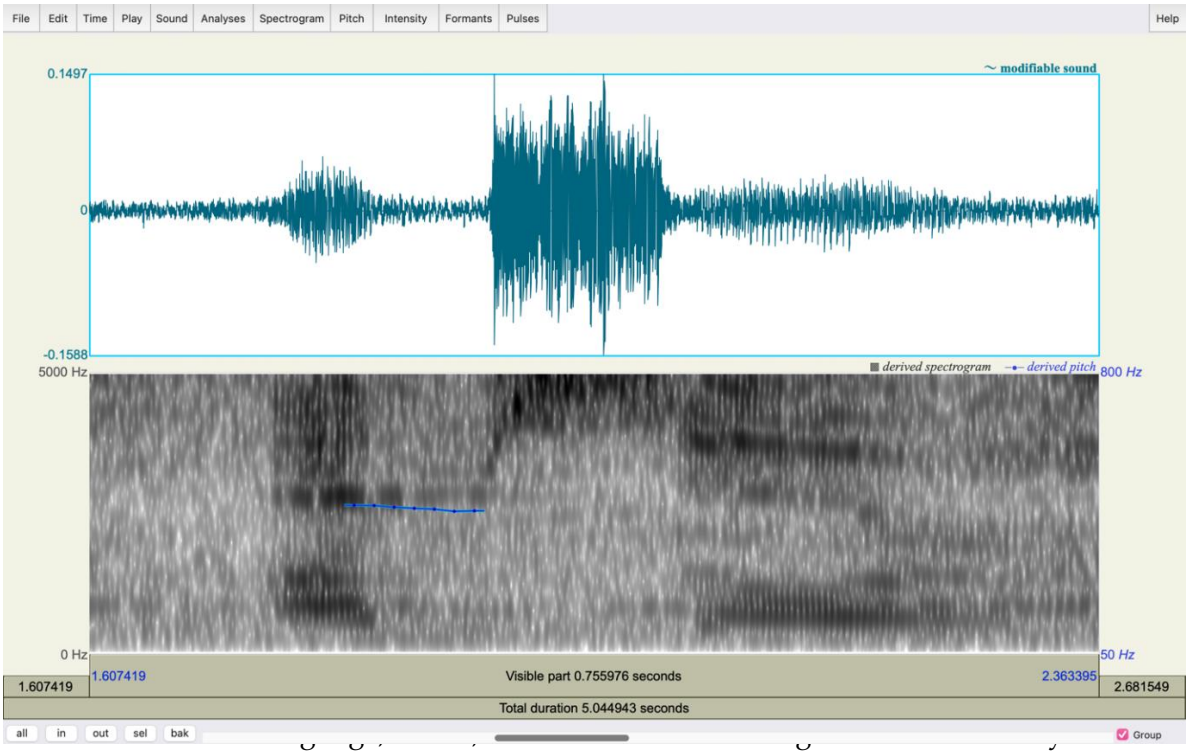
English Word Stress with 2 Syllables					Variety of Stress Syllable	
Words	**Cambridge Dictionary**	**No. of Respondents**	**Correct**	**Percentage**	**1st**	**2nd**
Absorb	əbˈzɔːrb	15	5	33%	10	5
Behind	bɪˈhaɪnd	15	13	87%	2	13
Divorce	dɪˈvɔːrs	15	5	33%	10	5
Divide	dɪˈvaɪd	15	7	47%	8	7
Forget	fɚˈgɛt	15	8	53%	7	8
Total		**75**	**38**		**37**	**38**
Percentage					**49%**	**51%**

The results of the students' performance in producing accurate stress placement for English two-syllable words is shown above , as benchmarked against standard pronunciation norms found in the Cambridge Dictionary. The data revealed a considerable variability in the learners' ability to apply the correct stress patterns across the five target words. Among the items assessed, the word *behind* demonstrated the highest rate of correct

responses, aligning with the standard phonemic transcription (/bɪˈhaɪnd/). This suggests that, for certain lexical items, learners may possess a more stable phonological representation, possibly due to frequent exposure or contextual familiarity.

However, significant challenges were observed with the words *absorb* and *divorce*, which yielded the lowest accuracy rates, correctly placing the stress on the second syllable. These findings highlight the inconsistency in learners' application of English stress rules, even within the same word length category. When analyzing overall stress placement patterns, the data showed a near-equal distribution: 51% of stress assignments were placed on the second syllable, while 49% were incorrectly placed on the first syllable. This marginal preference for correct stress positioning indicates a partial, yet unstable, awareness of English word stress conventions. Importantly, all words in the task were designed to carry second-syllable stress based on standard usage, which further emphasizes the learners' difficulty in internalizing consistent stress patterns.

Figure 1. Spectrogram of the word absorb (/əbˈzɔːrb/)



whom are part of a broader. The spectrogram of the word absorb (/əbˈzɔːrb/) reveals important acoustic cues that indicate correct stress placement on the second syllable. In the waveform (top panel), a noticeable increase in amplitude can be observed during the articulation of the second syllable, suggesting greater vocal energy which is a common marker of primary stress in English. The spectrogram (bottom panel) further supports this interpretation through its pitch contour and spectral energy distribution. The blue pitch trace shows a distinct rise in fundamental frequency (F0) over the second syllable, aligning with established prosodic patterns wherein stressed syllables typically exhibit pitch prominence (Cutler, 2005). Additionally, the second syllable demonstrates longer duration and denser formant structure, as evidenced by the darker vertical striations around the 600–800 Hz range. These acoustic features as such higher pitch, longer syllable duration, and greater intensity are consistent with native-like stress production (Lieberman, 1960; Beckman, 1986). The data suggest that the learner successfully produced stress on the appropriate syllable, thereby improving the intelligibility of the word.

Moreover, Islamic cultural and linguistic tradition may lack the stress-timed rhythm characteristic of English. As noted by Zughoul (2000), L2 learners from Arabic-speaking or Islamic backgrounds often struggle with suprasegmental features like stress and intonation due to fundamental differences in prosodic structures. This observation is consistent with the stress misplacements observed in this study, suggesting that the learners' L1 may not provide a sufficient prosodic framework for acquiring English stress rules. Furthermore, the limited exposure to English input that emphasizes stress placement, as well as the possible absence of explicit instruction on suprasegmental features, may compound these pronunciation difficulties.
Ultimately, the data underscores the need for targeted pronunciation instruction that addresses the specific challenges encountered by learners from linguistically diverse and non-stress-timed language backgrounds. By identifying which words pose the greatest difficulty and understanding the underlying phonological transfer from L1, educators can better support the development of accurate and intelligible English pronunciation among indigenous and minority language learners.

2. English word stress with three syllables

Table 2. Students Total Result in Three Syllables

Words	English Word Stress with 3 Syllables				Variety of Stress Syllable		
	Cambridge Dictionary	No. of Respondents	Correct	Percentage	1st	2nd	3rd
Addition	əˈdɪʃ.ən	15	10	67%		10	5
Existence	ɪgˈzɪs.təns	15	13	87%		13	2
Percentage	pəˈsen.tɪdʒ	15	2	13%	12	2	1
Impression	ɪmˈpreʃ.ən	15	6	40%	8	6	1
Frustration	frʌsˈtreɪ.ʃən	15	8	53%	5	8	2
Possession	pəˈzeʃ.ən	15	7	47%	5	9	1
Total		**90**	**48**		**30**	**48**	**12**
Percentage					**34%**	**53%**	**13%**

The performance of Kolibugan students in correctly identifying primary stress in English three-syllable words is presented above, as compared to standard pronunciations from the Cambridge Dictionary. Significant variability was found in accuracy across the different lexical items, which underscores the ongoing challenges these learners face in mastering English prosodic features.

Among the six words tested, *existence* received the highest accuracy rate indicating that most students correctly identified the second syllable as stressed (/ɪgˈzɪs.təns/). This result suggests that the learners were able to align with the standard stress pattern for this word. Similarly, *addition* also produced a strong result, where they accurately place stress on the second syllable; but, *percentage* had the lowest accuracy. Most students incorrectly stressed the first syllable, reflecting a consistent pattern of misplacement. This can be attributed to L1 interference, particularly for students whose native language, Kolibugan, does not involve regular stress shifts in longer lexical forms. As Abingosa (2023) notes, the verbal affixes of Kolibugan express both the focus and aspect of a verb, and this linguistic structure

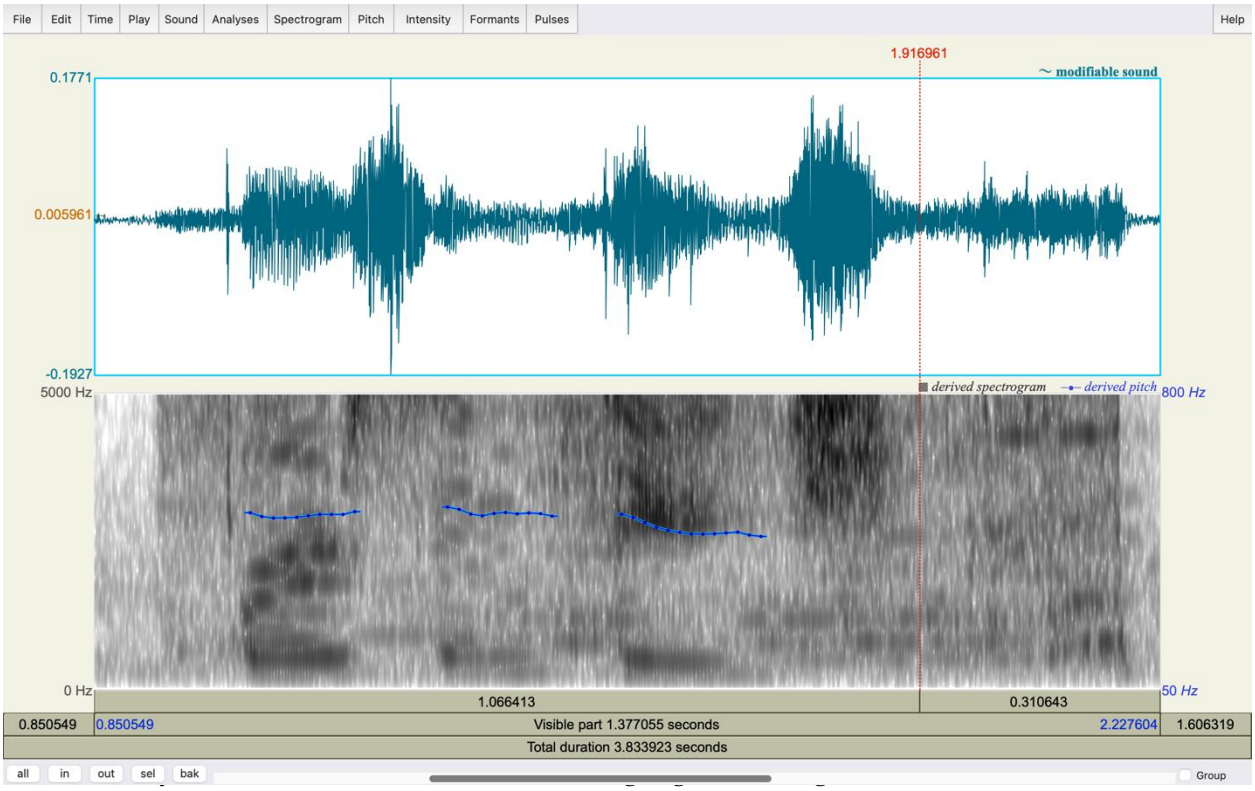
differs significantly from English, where stress placement is crucial in distinguishing meaning.

The distribution of stress placement across all responses shows a concentration on the second syllable, followed by the first and third syllables. While the prevalence of second-syllable stress aligns with the target stress patterns of most words, the high frequency of misplaced stress—especially on the first syllable—suggests the influence of Kolibugan's L1 stress patterns. In Kolibugan, stress typically occurs on the first syllable of words, a feature not consistent with the stress-timed nature of English. This observation is in line with Almbark and Hellmuth (2015), who found that Arabic-speaking learners frequently misplace stress in English due to phonological transfer, a pattern likely shared by Kolibugan learners as well.

Gilakjani (2012) emphasizes that suprasegmental features such as word stress are often neglected in classroom instruction, particularly in English as a Foreign Language (EFL) settings. This lack of focused instruction on stress can lead to fossilized pronunciation errors, which are evident in the relatively low overall accuracy for this task. This aligns with the findings of this study, where certain individual words like *Existence* performed well, but the overall pattern of misplaced stress demonstrates a clear need for more targeted instruction on stress patterns.

Interestingly, the tendency to stress the first syllable in *Percentage* (with 80% of responses) reflects an overgeneralization of stress patterns commonly seen in bisyllabic nouns (e.g., *PERmit*, *PROduct*). This rule, while applicable to simpler words, does not transfer well to more complex words with three or more syllables (Cutler, 2015). This suggests that although learners develop partial rules for stress, they are not always able to apply these rules correctly in longer, more complex words.

Figure 2. Spectrogram of the word percentage (/pəˈsen.tɪdʒ/)



This study's findings support this argument, as evidenced by the inconsistent performance across words of similar structure, such as *Impression* vs. *Possession*, where learners showed different patterns of stress placement despite the words having comparable stress structures.

English word stress with four syllables

Table 3. Students Total Result in Four Syllables

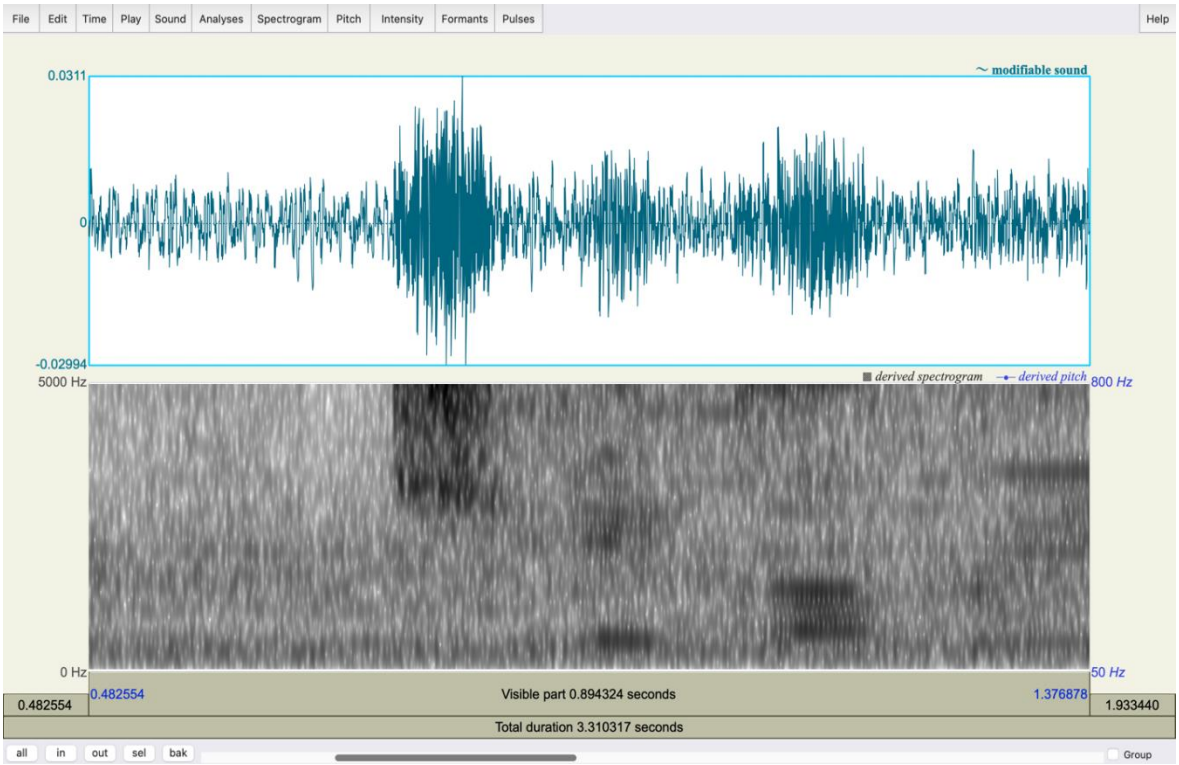
	English Word Stress with 4 Syllables				Variety of Stress Syllable			
Words	**Cambridge Dictionary**	**No. of Respondents**	**Correct**	**Percentage**	**1st**	**2nd**	**3rd**	**4th**
Majority	məˈdʒɔː.rə.ti	15	7	47%		7	1	7
Significant	sɪgˈnɪf.ə.kənt	15	8	53%		8	6	1
Investigate	ɪnˈves.tə.geɪt	15	7	47%	1	7	7	3
Recovery	rɪˈkʌv.ə.i	15	8	53%	3	8		4
Total		**60**	**30**		**4**	**30**	**14**	**15**

Percentage	**7%**	**50%**	**23%**	**25%**

The data above provides insights into the performance of Kolibugan students in identifying the correct stress placement in four-syllable English words, referencing standard pronunciations from the Cambridge Dictionary (n = 15). The data indicate that overall, students achieved 50% accuracy in placing stress correctly, with the remaining responses distributed across incorrect syllables, particularly the third and fourth syllables . These results highlight the ongoing challenges Muslim learners face in acquiring English stress patterns, especially in polysyllabic words.

Among the words tested, *significant* and *recovery* had the highest accuracy rates (53%), followed by *majority* and *investigate* at 47%. Although these figures show some proficiency, they also underscore the inconsistencies in how students handle stress in more complex words, particularly those with intricate syllable structures. The word *Investigate* illustrates this difficulty, as students distributed stress placement nearly evenly across the second, third, and fourth syllables, indicating a lack of predictability in stress assignment.

Figure 3. Spectrogram of the word recovery (/rɪˈkʌv.ɚ.i/)



The PRAAT spectrogram analysis of the uttered word recovery demonstrates a pronounced misplacement of lexical stress. Instead of assigning prominence to the second syllable as standard in English pronunciation (/rɪˈkʌvəri/) in Cambridge Dictionary, the speaker emphasized the initial syllable. This deviation is evidenced by the waveform's amplitude peak occurring early in the signal, indicating greater articulatory force and loudness at the onset of the word. Additionally, the pitch contour, which tracks fundamental frequency across the utterance, shows an early rise corresponding with the first syllable, while the expected rise over the second syllable is absent or significantly diminished. The spectrographic representation also suggests that the duration and intensity of the second syllable are not sufficient to reflect a stressed syllable. These acoustic markers confirm that the speaker incorrectly stressed the first syllable, which could impede intelligibility or lead to perceptual misinterpretation by native listeners.

These findings align with Zhang and Yin (2009), who reported that learners of English from tonal language backgrounds often misplace stress due to the absence of inherent stress contrasts in their first languages. While some of the Muslim students in the Philippines generally do not speak tonal languages such as Mandarin or Cantonese, languages like Tausug and Kolibugan, which are spoken by some of the learners, typically do not feature stress-timed rhythms, which are prevalent in English. As a result, learners might rely on alternative cues, such as syllable count or morphological structures, to determine stress placement, which can lead to errors (Zhang & Yin, 2009).

Trofimovich and Baker (2006) further highlight that stress perception improves with increased exposure to naturalistic language settings. However, for many Kolibugan learners, who were in marginalized or linguistically isolated communities, such exposure may be limited. These learners may not have frequent opportunities to hear or practice English in environments where stress patterns are naturally emphasized, which likely contributes to their moderate performance in this task. Insufficient exposure

to authentic English prosody and minimal instruction on stress-specific pronunciation strategies may, therefore, hinder their progress.

Additionally, studies by Kormos and Sáfár (2008) show that learners with high phonological working memory capacity are generally better at retaining stress patterns in L2 pronunciation. In contrast, Kolibugan learners in this study may struggle with retaining these patterns due to cognitive load, especially if their opportunities for rehearsal or focused practice on stress perception are limited. This observation further emphasizes the importance of targeted phonological training that prioritizes prosodic features, not just segmental pronunciation, to support learners in acquiring more accurate stress patterns.

Further, while students demonstrated some awareness of correct stress placement, particularly on second syllables, the high rate of misplacement in other syllables signals the need for more structured instruction on suprasegmental features in ESL classrooms. Tailored pedagogical strategies, focusing on stress placement and prosody, are essential for supporting Muslim learners in the Philippines as they develop their English pronunciation skills.

The factors for the students ' word stress errors

Kolibugan students learning English as a second language frequently face considerable challenges in mastering word stress, a critical component of English prosody. This study's reflective data, gathered through learner responses to targeted interview questions, highlights persistent difficulties in identifying which syllable should carry primary stress particularly in longer, multisyllabic words that are prevalent in academic discourse, such as significant and investigate. These challenges become especially pronounced in formal contexts like classroom presentations, where learners report heightened anxiety about potential mispronunciation. This performance anxiety often leads to diminished oral fluency and lowered self-esteem, adversely affecting both academic participation and communicative confidence (Trofimovich & Baker, 2006).

Several participants shared personal experiences in which misplacement of stress resulted in breakdowns in communication. One commonly cited

example was the confusion caused by pronouncing PRE-sent (noun) instead of pre-SENT (verb), a subtle yet meaningful difference in stress placement that can alter listener interpretation. Such moments of misunderstanding not only disrupt the flow of communication but also reinforce learners' apprehension toward speaking, contributing to a cycle of reduced participation and lowered confidence. A recurring theme in student narratives was the prosodic influence of their native languages such as Kolibugan, which, like many other Philippine and regional languages, is syllable-timed. In contrast to English, a stress-timed language, syllable-timed languages assign relatively equal duration to each syllable, resulting in more even rhythmic patterns that do not prioritize stress as a cue for meaning (Gilakjani, 2012; Dauer, 1983). Consequently, learners accustomed to syllable-timed prosody may find it difficult to perceive and reproduce English stress patterns, often resulting in flattened or monotonous intonation.

This disconnect between the learners' first language rhythm and the prosodic expectations of English aligns with the observations of Zhang and Yin (2009), who assert that students from non-stress-timed language backgrounds frequently misplace stress due to their unfamiliarity with its functional role in signaling emphasis, meaning, and grammatical contrast. The lack of exposure to native or near-native pronunciation models, coupled with minimal emphasis on suprasegmental features in typical language instruction, further compounds this challenge. Students often reported feeling unsure of their ability to apply stress accurately during spontaneous speech, particularly when required to communicate under pressure or in high-stakes environments. Previous studies have extensively explored pronunciation issues among ESL learners in general (e.g., Derwing & Munro, 2005; Hahn, 2004), and some have touched on the role of first language prosody in English stress acquisition (e.g., Archibald, 1993; Field, 2005). However, there remains a noticeable gap in research specifically addressing the stress production difficulties faced by learners from indigenous linguistic backgrounds such as the Kolibugan, whose phonological systems have received limited scholarly attention. By focusing on this underrepresented group, the current study builds upon and extends the findings of earlier works, while contributing new insights into the intersection of prosodic transfer, language anxiety, and intelligibility within the Philippine ESL context.

Considering these findings, it becomes evident that instruction in pronunciation must extend beyond segmental features such as individual consonants and vowels. As Munro and Derwing (2011) emphasize, explicit, focused instruction in prosody including word and sentence stress lead to significant improvements in learner intelligibility. Therefore, pedagogical approaches should integrate culturally and linguistically responsive strategies that directly address the prosodic challenges faced by Kolibugan learners. This includes incorporating targeted practice with stress patterns, increasing access to intelligible pronunciation models, and creating low-anxiety environments for oral practice. Such interventions are essential not only for improving linguistic competence but also for empowering learners to participate confidently in both academic and social communication contexts.

Conclusion

This research emphasizes the importance of word stress in second language (L2) pronunciation, especially among Indigenous learners like the Kolibugan students of Sirawai National High School. Proper word stress placement is essential to English intelligibility and communicative competence (Field, 2005; Hahn, 2004). The results show that the participants manifested some sensitivity towards English stress rules particularly on disyllabic and trisyllabic words but a persistent trend of misplacement of stress appeared, notably with increasing complexity in words. These departures from stress placement are not just accidental but probably driven by the prosodic architecture of the L1 of learners, which in turn tends to differ significantly from that of English (Cutler, 2015).

This is in accordance with earlier research highlighting the role of L1 prosodic interference in the acquisition of English word stress (Archibald, 1993). Difficulty is compounded by the apparent lack of direct instruction in suprasegmental aspects, including stress and intonation, in much English as a Second Language (ESL) curriculum (Derwing & Munro, 2005). The use of both Contrastive Analysis Hypothesis (Lado, 1957) and the precepts of Generative Phonology (Chomsky & Halle, 1968) helped to supply a theoretical foundation for the determination of the phonological gaps as well as the possible sites of negative transfer from learners' L1 into English.

Methodologically, the research made use of acoustic phonetic analysis via PRAAT software and complemented this with semi-structured interviews of learners to record and examine patterns of word stress. These methods did not only provided empirical evidence regarding the character of stress placement in Kolibugan learners but also provided some insights into the wider sociolinguistic factors that influence their English language acquisition. The nexus of linguistic, cultural, and educational forces was especially manifest in the learners' experiences and views of language acquisition.

In general, the research highlights the need for culturally responsive and linguistically grounded pedagogical practices that address the specific needs of Kolibugan students. Integrating such practices into English language teaching is crucial not only to improve learners' oral competence but also to foster inclusivity and educational justice (McCarty & Lee, 2014). Meeting the specific linguistic realities of indigenous students is a critical move toward more equitable and effective language education.

Recommendations

Schools should prioritize ongoing professional development programs tailored to enhancing teachers' competence in suprasegmental instruction, particularly word stress, which plays a crucial role in second language acquisition. These training programs should move beyond theoretical knowledge by incorporating practical instructional techniques such as rhythmic repetition drills, stress-shifting games, and guided listening exercises. By equipping educators with concrete, classroom-ready strategies, they can deliver more effective and responsive pronunciation instruction that caters to learners' oral proficiency needs.

School administrators must ensure the systematic integration of word stress and other suprasegmental features into the English language curriculum. Embedding these elements in both speaking and listening components through activities such as choral reading, sentence stress patterning, and audio discrimination tasks can promote phonological awareness and communicative competence. A curriculum that foregrounds prosodic

elements enables learners to interact with authentic pronunciation patterns and builds a stronger foundation for intelligible speech.

Teachers are encouraged to adopt differentiated instructional strategies that consider the unique linguistic and cultural backgrounds of Kolibugan learners. Strategies such as using visual stress markers (e.g., color-coding syllables), incorporating interactive multimedia tools, and leveraging peer-based pronunciation games can enhance learner engagement and awareness of stress patterns. Moreover, incorporating culturally relevant examples and texts fosters inclusive learning environments where students see their identities reflected and valued.

Reading coordination teams should implement regular pronunciation drills specifically designed to target suprasegmental features like word stress. These can include clapping or tapping syllables, intonation contour mimicry, and minimal pair differentiation exercises. Alongside these drills, formative assessments such as oral reading rubrics and stress placement checklists provide essential data to track learner progress and inform targeted interventions. Structured, consistent feedback allows students to gradually internalize correct stress patterns in a supportive setting.

Future research should move toward longitudinal studies that explore how sustained instruction in suprasegmentals affects learners' intelligibility and confidence over time. Comparative studies involving other indigenous language groups can also provide insights into shared challenges and adaptive strategies across contexts. Importantly, research should examine the intersection of cultural identity and phonological acquisition, particularly how sociolinguistic factors shape pronunciation learning among Kolibugan learners. Interdisciplinary collaboration among linguists, educators, and cultural advocates is vital to design pedagogically sound and culturally affirming approaches to English language instruction. Such work will contribute to a more inclusive and equitable model of second language education for indigenous populations.

References

Abingosa, J. (2023). The role of verbal affixes in Kolibugan phonology and syntax. *Philippine Journal of Linguistics, 10*(1), 35-47.

Adiana, Y. S. T. (2019). *Analyzing students' pronunciation of word stress in the English Education Department of Muhammadiyah University of Ponorogo in the academic year of 2018/2019.* Muhammadiyah University of Ponorogo.

Algifari, M. Y. (2017). *Analyzing students' pronunciation of word stress of IET 7 students of Cambridge English College (CEC) Makassar.* UIN Alauddin Makassar.

Almbark, R., & Hellmuth, S. (2015). Perception of lexical stress in English by L1 Arabic speakers. *Concordia Working Papers in Applied Linguistics*,*6*,20-35. https://doaj.org/article/4f3cf74d219041d3b57ed3b4d41b5db8

Archibald, J. (1993). *Language learnability and L2 phonology: The acquisition of metrical parameters*. Springer.

Beckman, M. E. (1986). *Stress and non-stress accent*. Dordrecht: Foris Publications. https://doi.org/10.1515/9783110874020

Bernardo, A. S. (2017). Philippine English in the ESL classroom: A much closer look. *Philippine ESL Journal, 19*(2), 117-144.

Best, C. T. (1995). A direct realist view of cross-language speech perception. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp. 171–204). York Press.

Boersma, P., & Weenink, D. (2022). *Praat: Doing phonetics by computer* [Computer program]. Version 6.2.04. http://www.praat.org/

Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (2010). *Teaching pronunciation: A course book and reference guide*(2nd ed.). Cambridge University Press.

Chomsky, N., & Halle, M. (1968). *The sound pattern of English*. Harper & Row.

Council of Europe. (2001). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Cambridge University Press.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE Publications.

Cutler, A. (2005). Lexical stress. In D. B. Pisoni & R. E. Remez (Eds.), *The handbook of speech perception* (pp. 387–409). Blackwell Publishing.

Cutler, A. (2015). *Native listening: Language experience and the recognition of spoken words*. MIT Press.

Dauer, R. M. (1983). Stress-timing and syllable-timing reanalyzed. *Journal of Phonetics, 11*(1), 51–62.

Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford University Press.

Field, J. (2005). Intelligibility and the listener: The role of lexical stress. *TESOL Quarterly, 39*(3), 399–423. https://doi.org/10.2307/3588487

Flege, J. E. (1995). Second language speech learning: Theory, findings, and problems. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp. 233–277). York Press.

Fry, D. B. (1955). Duration and intensity as physical correlates of linguistic stress. *The Journal of the Acoustical Society of America, 27*(4), 765–768. https://doi.org/10.1121/1.1908022

Gilakjani, A. P. (2012). A study of factors affecting EFL learners' English pronunciation learning and the strategies for instruction. *International Journal of Humanities and Social Science, 2*(3), 119–128.

Gonzalez, A. (1998). The language planning situation in the Philippines. *Journal of Multilingual and Multicultural Development, 19*(5), 487–525.

Hahn, L. D. (2004). Primary stress and intelligibility: Research to motivate the teaching of suprasegmentals. *TESOL Quarterly, 38*(2), 201–223.

Kormos, J., & Sáfár, A. (2008). Phonological short-term memory, working memory, and foreign language performance in intensive language learning. *Bilingualism: Language and Cognition, 11*(2), 261–271. https://doi.org/10.1017/S1366728908003416

Lado, R. (1957). *Linguistics across cultures: Applied linguistics for language teachers*. University of Michigan Press.

Lieberman, P. (1960). Some acoustic correlates of word stress in American English. *The Journal of the Acoustical Society of America, 32*(4), 451–454. https://doi.org/10.1121/1.1908095

McCarty, T. L., & Lee, T. S. (2014). Critical culturally sustaining/revitalizing pedagogy and Indigenous education sovereignty. *Harvard Educational Review, 84*(1), 101–124.

Munro, M. J., & Derwing, T. M. (2011). The foundations of accent and intelligibility in pronunciation research. *Language Teaching, 44*(3), 316–327. https://doi.org/10.1017/S0261444811000103

Norton, B. (2013). *Identity and language learning: Extending the conversation* (2nd ed.). Multilingual Matters.

Odlin, T. (1989). *Language transfer: Cross-linguistic influence in language learning*. Cambridge University Press.

Prince, A., & Smolensky, P. (1993). *Optimality Theory: Constraint interaction in generative grammar*. Blackwell.

Rao, P. S. (2019). The importance of speaking skills in English classrooms. *Alford Council of International English & Literature Journal (ACIELJ), 2*(2), 6-18.

Roach, P. (2012). *English phonetics and phonology: A practical course* (4th ed.). Cambridge University Press.

Tayao, M. L. G. (2008). A lectal description of Philippine English. In M. L. S. Bautista & K. Bolton (Eds.), *Philippine English: Linguistic and literary perspectives* (pp. 157–174). Hong Kong University Press.

Trofimovich, P., & Baker, W. (2006). Learning second-language suprasegmentals: Effect of L2 experience on prosody and fluency characteristics of L2 speech. *Studies in Second Language Acquisition, 28*(1), 1–30. https://doi.org/10.1017/S0272263106060013

UNESCO. (2016). *If you don't understand, how can you learn? Global Education Monitoring Report*.

UP Department of Linguistics. (2023, January 18). PILLS | Ang mga verbal afiks ng Kolibugan [Video]. YouTube. https://www.youtube.com/watch?v=QZpB11JLJpo

Zughoul, M. R. (2000). Globalization and EFL/ESL pedagogy in the Arab world. *The Internet TESL Journal, 6*(1). http://iteslj.org/Articles/Zughoul-Globalization.html

Zhang, Y., & Yin, S. (2009). A study on Chinese EFL learners' acquisition of English word stress patterns. *Asian Social Science, 5*(6), 100–105. https://doi.org/10.5539/ass.v5n6p100

Disclosure statement

No potential conflict of interest was reported by the authors.

Acknowledgement

I acknowledge the unwavering support, encouragement, and understanding of my loved ones, friends, and colleagues, who contributed to the successful completion of this research.

About the author

Dea Novieann T. Oliveros is a Master Teacher-I at Sirawai National High School with nearly six years of teaching experience. She earned her Master of Arts in English Language at Jose Rizal Memorial State University–Main Campus, Dapitan City. Driven by her passion for language education, she is presently engaged in research on pronunciation and language learning among Kolibugan learners to foster an effective English instruction in diverse classroom environments.

E-mail: deainfinity08@gmail.com