



English Diphthongs Pronunciation Errors Found in North Bali Bilingual School's 5th Grade Students

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Abstract. *This undergraduate thesis examines English diphthong pronunciation errors among fifth-grade students at North Bali Bilingual School, with a specific focus on centring and opening diphthongs using Peter Roach's theory. The primary aim is to identify the errors made by the students and determine the underlying factors contributing to these errors. The research employs a qualitative method supported by quantitative data, involving voice recordings collected via VoiceMemos on an iPhone, which were then phonetically transcribed. Additionally, a questionnaire was administered to gather background information on the students that might explain the pronunciation errors. The findings reveal that while the majority of students can correctly produce diphthong sounds, 22% of them made pronunciation errors. The most frequently mispronounced diphthongs were /ɪə/ with 75% errors, /aʊ/ with 59% errors, and /eə/ with 25% errors. The questionnaire results suggest that the primary factors contributing to these errors include the students' native language, phonological interference, avoidance strategies, and potential neurodevelopmental disorders. The research provides insights into the specific challenges faced by bilingual students in mastering English diphthongs and highlights the need for targeted interventions to address these pronunciation issues.*

Keywords: *Diphthong, Error, Factors, Pronunciation*

Abstrak. Tesis sarjana ini meneliti kesalahan pengucapan diftong bahasa Inggris di antara siswa kelas lima di North Bali Bilingual School, dengan fokus khusus pada pengucapan diftong di tengah dan di depan dengan menggunakan teori Peter Roach. Tujuan utamanya adalah untuk mengidentifikasi kesalahan yang dibuat oleh para siswa dan menentukan faktor-faktor yang mendasari yang berkontribusi terhadap kesalahan ini. Penelitian ini menggunakan metode kualitatif yang didukung oleh data kuantitatif, yang melibatkan rekaman suara yang dikumpulkan melalui VoiceMemos di iPhone, yang kemudian ditranskripsikan secara fonetis. Selain itu, sebuah kuesioner diberikan untuk mengumpulkan informasi latar belakang siswa yang dapat menjelaskan kesalahan pengucapan. Temuan menunjukkan bahwa meskipun sebagian besar siswa dapat menghasilkan bunyi diftong dengan benar, 22% dari mereka melakukan kesalahan pengucapan. Diftong yang paling sering diucapkan salah adalah /ɪə/ dengan 75% kesalahan, /aʊ/ dengan 59% kesalahan, dan /eə/ dengan 25% kesalahan. Hasil kuesioner menunjukkan bahwa faktor utama yang berkontribusi terhadap kesalahan ini termasuk bahasa ibu siswa, interferensi fonologis, strategi penghindaran, dan potensi gangguan perkembangan saraf. Penelitian ini memberikan wawasan tentang tantangan khusus yang dihadapi oleh siswa bilingual dalam menguasai diftong bahasa Inggris dan menyoroti perlunya intervensi yang ditargetkan untuk mengatasi masalah pengucapan ini.

Kata kunci: Diftong, Faktor, Kesalahan, Pengucapan

1. BACKGROUND

The rapid pace of globalization has significantly impacted the study of English as a global language, making it an essential tool in various fields such as education, business, media, and technology. Recognized as an international language, the demand for English skills has risen globally. In response, Indonesia has shifted its English education focus towards communicative language teaching to improve proficiency (Alek, 2023). The government has also implemented several programs aimed at enhancing English language skills. Key areas of focus include the four essential skills: speaking, writing, reading, and listening. Pronunciation,

particularly within speaking skills, plays a crucial role in personal and social communication. As Lado (1964) defines, pronunciation involves the act or manner of pronouncing words and uttering speech. Mispronunciation, often a result of pronunciation errors, is a common issue, especially in Indonesia, where various dialects influenced by the mother tongue make correct English pronunciation challenging (Cambridge Dictionary).

Achieving accurate pronunciation in English requires a basic understanding of phonetics, the study of speech sound production and classification (University of Sheffield, 2024). The International Phonetic Alphabet (IPA) is crucial in this field, representing the sounds of various languages with symbols for consonants and vowels, including monophthongs and diphthongs. Vowels are categorized into closed /i:/, ʊ, u:/, mid /e, ə, ɜ:/, and open /æ, ʌ, ɑ:/ sounds (Ladefoged & Disner, 2012). Monophthongs are single, unchanging vowel sounds (Cambridge Dictionary), while diphthongs involve a glide from one vowel sound to another, including centring [ɪə], [eə], [ʊə] and opening [eɪ], [aɪ], [ɔɪ], [aʊ], [əʊ] (Roach, 2000). Indonesian, by contrast, has only three diphthongs (/ai/, /au/, and /oi/). Differences between English and Indonesian diphthongs, combined with cultural diversity, contribute to pronunciation errors. Research by Indrawati and Puspani (2021) found that 87.5% of English diphthongs were mispronounced by 75 students at Udayana University, and Kurnia, Jabu, and Munir (2023) identified factors such as native language and phonological interference as major contributors to these errors. This highlights a significant gap between theory and practice, emphasizing the need for further investigation into pronunciation challenges across different cultural contexts.

Based on the explanation above, this study aims to find the English diphthong pronunciation errors made by the 5th-grade students in North Bali Bilingual School, using Roach's theory on English Phonetics and Phonology, specifically diphthongs and the factors that cause the mispronunciation using Massari's theory, which errors can be divided into four types: addition, omission, misordering and misinformation.

2. THEORETICAL REVIEW

This research draws on four previous undergraduate theses and two international journals to inform the study of English diphthong pronunciation errors. These sources contribute valuable insights into methodologies, theories, and findings that can be compared to the current study. For example, Fahmi (2021) explored errors in pronouncing vowels and diphthongs among high school students, identifying omission, substitution, and addition as common mistakes. Mardhiyah (2022) also analyzed diphthong errors but focused on high school students, finding that errors stemmed from interlingual and intralingual factors. Laxmi

(2019/2020) examined errors made by college students, identifying omission, addition, misinformation, and misordering as typical issues. Another study by Sargunawan (2023) focused on grammatical errors in writing among middle school students, highlighting the influence of the native language. Additionally, two international journals by Indrawati and Puspani (2021) and Kurnia et al. (2023) provided relevant data on pronunciation difficulties and error classifications, using different theoretical frameworks. These sources support the current study's focus on diphthong pronunciation errors and the factors contributing to them, making them essential for the literature review.

This study employs three main theories to guide the analysis of English diphthong pronunciation errors. Roach (2009) explains that diphthongs are similar to long vowels, with the first part being longer and stronger than the second, as in the word "eye." Masari (1999) discusses that errors in foreign language pronunciation are a natural part of the learning process, influenced by factors like native language, phonological interference, and avoidance. Ramelan (1999) adds that pronunciation issues arise due to linguistic habit transfer, differences between the native and target languages, and subtle phonetic variations. These theories form the foundation of this research, guiding the design and evaluation of the study.

3. RESEARCH METHODOLOGY

This research employs a qualitative approach, complemented by quantitative data, to explore pronunciation errors among students at North Bali Bilingual School (NBBS) in Sukasada, Buleleng, Bali. Qualitative research aims to understand social phenomena in their natural context (University of Texas at Arlington, 2023), while quantitative data involves numerical values and counts (National Library of Medicine). NBBS, a multicultural institution founded in 2012, integrates English as a primary language, requiring students to use English exclusively during English classes, though they also study Bahasa Indonesia and Bahasa Bali. The study involved 32 fifth-grade students, all of whom have a basic understanding of English pronunciation. Data were collected through recorded oral tests and questionnaires, with recordings made using iPhone's Voice Memos over a four-day period. The first day included school-wide observations and administrative procedures, the second day involved observing English classes and student behavior, and the third and fourth days focused on data collection, where students pronounced words containing various diphthongs and completed questionnaires about their backgrounds. Data analysis followed a descriptive qualitative method, which included phonetic transcription of recordings, identification of pronunciation errors, and analysis of factors contributing to these errors as indicated in the questionnaires (Tenny, 2022). Presentation of the findings will include tables to display descriptive statistics and visual data

representations, and direct quotes to illustrate student experiences and cultural influences affecting pronunciation.

4. RESULT AND DISCUSSION

Result

The results of the recordings of the 32 fifth-grade students pronouncing eight words containing eight types of diphthongs were meticulously analysed and phonemically transcribed to determine if the pronunciation was correct or incorrect and mainly to determine which type of diphthongs that are mostly pronounced incorrectly by these students. The scores of the 32 students were determined individually and each student's scores are presented in percentages. The individual scores for each member of these students were then calculated by dividing the number of incorrect or correct uttered words by the total number of students (32) times 100.

Table 1. Number of diphthongs pronounced by the fifth-grade students
FG: Fifth Grade CN: Correct Number IN: Incorrect Number

FG number	Correct number	%	Incorrect number	%	FG number	Correct number	%	Incorrect number	%
1.	7	87,5%	1	12,5%	17.	6	75%	2	25%
2.	6	75%	2	25%	18.	8	100%	-	0
3.	5	62,5%	3	37,5%	19.	6	75%	2	25%
4.	6	75%	2	25%	20.	6	75%	2	25%
5.	7	87,5%	1	12,5%	21.	6	75%	2	25%
6.	4	50%	4	50%	22.	5	62,5%	3	37,5%
7.	7	87,5%	1	12,5%	23.	6	75%	2	25%
8.	5	62,5%	3	37,5%	24.	5	62,5%	3	37,5%
9.	8	100%	-	0	25.	7	87,5%	1	12,5%
10.	7	87,5%	1	12,5%	26.	6	75%	2	25%
11.	6	75%	2	25%	27.	6	75%	2	25%
12.	7	87,5%	1	12,5%	28.	7	87,5%	1	12,5%
13.	7	87,5%	1	12,5%	29.	6	75%	2	25%
14.	6	75%	2	25%	30.	6	75%	2	25%
15.	4	50%	4	50%	31.	6	75%	2	25%
16.	8	100%	-	0	32.	8	100%	-	0
CN = 2500 : 32 x 100 = 78									
IN = 687,5 : 32 x 100 = 22									
Average: CN = 78% IN = 22%									

The findings show that, on average, 32 fifth-grade students at North Bali Bilingual School correctly pronounced 78% of the words, indicating strong pronunciation skills, with most students accurately pronouncing 5 or 6 out of 8 words. However, the 22% incorrect pronunciation score suggests there is still room for improvement, as some students struggled with the correct pronunciation of certain diphthongs.

The following analysis shows the words that were problematic for the students as the result of the 22% average scores of the fifth-grade students in North Bali Bilingual School. Table 2 shows which types of diphthongs that are mostly pronounced incorrectly by the students.

Table 2. Fifth-grade students' diphthongs distributions

Diphthong	Students mispronounced diphthong	%	Students pronounced diphthong correctly	%	Sounds to replace the diphthong
1. /ɪə/ Beard	24	75%	8	25%	/e/, /ɜ/
2. /eə/ Cairn	8	25%	24	75%	/e/, /a/
3. /ʊə/ Tour	1	3%	31	97%	/ɔ/
4. /əʊ/ Load	3	10%	29	90%	/a/
5. /aʊ/ Gown	19	59%	13	41%	/ɔ/

The findings reveal that a significant number of fifth-grade students at North Bali Bilingual School struggle with certain diphthongs. According to Peter Roach's diphthong theory, 75% of students mispronounced /ɪə/, followed by 59% mispronouncing /əʊ/, and 25% mispronouncing /eə/. However, diphthongs such as /eɪ/, /aɪ/, and /ɔɪ/ were pronounced correctly by all students.

Several students tended to alter the sounds of specific words. For instance, "beard" was mispronounced by 75% of students, with some confusing it with "bread" or "bird," producing sounds like /beərd/, /bred/, and /bɜ:d/ instead of the correct /bɪəd/. "Cairn" was mispronounced by 25% of students, often altered to /kreɪn/ or "kren" instead of /keən/. Only one student mispronounced "tour" as "taʊər" rather than /tʊər/ or /tɔ:r/, possibly due to similarities with sounds in Bahasa Indonesia. "Load" was mispronounced by 10% of students, sometimes confused with "loud" and pronounced as "laʊd" or "lʊd" instead of /ləʊd/. The word "gown" saw a 59% mispronunciation rate, with many students pronouncing it as /gɔ:n/, reflecting the influence of their native language on their English pronunciation.

Pronunciation errors in language learning are common and can significantly impact communication, often influenced by factors like exposure to the language, learning style, phonological complexity, and the learner's native language. The table below presents the results of a questionnaire given to 32 students, with percentages calculated by dividing the number of "yes" and "no" responses by the total number of students (32) and multiplying by 100.

Table 3. Fifth-grade students questionnaire

Number	Questions	Yes	%	No	%
1.	Is English your native/first language?	4	13%	28	87%
2.	Is Bahasa Indonesia your first language?	26	80%	6	20%
3.	Do you speak English as a foreign language?	20	63%	12	37%
4.	Do you speak more than 2 languages?	22	69%	10	31%
5.	Do you only speak English at school?	5	16%	27	84%
6.	Do you speak English daily with family or friends outside of school?	24	75%	8	25%
7.	Are you familiar with phonetic alphabets?	1	4%	31	96%
8.	Do you know how to pronounce; /eɪ/, /aɪ/, /ɔɪ/, /əʊ/, /aʊ/, /ɪə/, /eə/, /ʊə/?	1	4%	31	96%
9.	If you came across a word that you didn't know how to pronounce, would you try to pronounce it?	24	75%	8	25%

The questionnaire results from fifth-grade students at NBBS highlight the diversity of the participants, with cultural backgrounds, neurodevelopmental conditions like ADHD, and speech delays influencing their English pronunciation. Among the 32 students, 16% speak English as their native language, while 63% speak it as a foreign language. Despite 80% speaking Bahasa Indonesia as their native language, only 5 students (16%) use English exclusively at school. Additionally, just 4% are familiar with the phonetic alphabet. The primary factors contributing to pronunciation errors, especially with diphthongs, are the students' native languages, phonological interference, avoidance, and neurodevelopmental disorders, with native language being the most prominent factor.

Discussion

Pronunciation errors among fifth-grade students at North Bali Bilingual School are significantly influenced by their native language, with 80% speaking Bahasa Indonesia as their first language. This native language interference affects both pronunciation and accent, often leading to incorrect diphthong sounds. Some students also alter pronunciation due to a lack of practice, especially those who speak English as a foreign language, which comprises 63% of the students. Only 16% of students speak English exclusively at school, further contributing to these errors.

Additionally, the preference for a native accent over a foreign one, even among children, highlights the social implications of language learning. Research suggests that children, like adults, tend to favor speakers with a native accent, which can shape social group preferences early in life. This preference for familiar accents may influence social interactions and contribute to broader social conflicts. Understanding these developmental origins could be key to addressing language-related social issues, emphasizing the need for early and adaptable language learning practices.

Phonological interference occurs when a language speaker hears sounds in another language and processes them through the lens of their native language. This often leads to subtle pronunciation errors that resemble accents. English and Indonesian have different sound systems, with English featuring eight diphthongs (/ɪə/, /eə/, /ʊə/, /eɪ/, /aɪ/, /ɔɪ/, /əʊ/, /aʊ/) and Indonesian only three (/aɪ/, /aʊ/, /oɪ/). Due to these differences, Indonesian-speaking students at North Bali Bilingual School often mispronounce words like "Beard" and "Gown," producing errors such as /gɔ:n/ instead of the correct /gaʊn/. Phonological interference manifests in three forms: sound addition (e.g., adding /k/ to "know," making it /knəʊ/ instead of /nəʊ/), sound omission (e.g., simplifying diphthongs to short vowels, like /aʊ/ becoming /ɒt/), and sound replacement (e.g., replacing /æ/ in "dad" /dæd/ with /e/ to produce /ded/). These errors are often

due to limited exposure to the target language and the challenge of adapting to new phonological rules.

In this instance, it can be claimed that students are aware of both easy and tough grammar, therefore they will not seize the chance to choose grammar. This avoidance is a general propensity of students to avoid certain areas of production that they already know the problem with. According to the result of the questionnaire, 25% (out of 100%) of the students chose to avoid words that they think are hard to pronounce. Avoidance normally occurs when the speakers are not familiar with the targeted language or when the TL and SL don't have any similarities. An example of this case is the diphthong sounds of English and Indonesian and several students are afraid to pronounce some words. Some students also made statements that they are most likely afraid to pronounce the word because they think they will make an error.

According to Vogindroukas et al., children with autism spectrum disorder often face significant challenges in speech and communication, reflecting broader issues in neurodevelopmental disorders that affect both children and adults, including ADHD and speech delays. At North Bali Bilingual School, two out of 32 fifth graders have ADHD, and one has a speech delay disorder. These conditions impact their performance on pronunciation tasks, with ADHD students correctly pronouncing all eight words, while those without neurodevelopmental disorders average 6 to 7 correct pronunciations. The student with a speech delay correctly pronounced only 3 words and struggled with 5. This highlights the varied language proficiency patterns among students with different neurodevelopmental conditions and underscores the need to support these children to maximize their developmental potential. Neurodevelopmental disorders (NDDs) involve complex interactions between genetic, cognitive, and emotional processes, and their prevalence is often underestimated due to inadequate screening methods, particularly in low-income communities. Effective policy and program development require accurate, globally accepted screening methodologies and increased awareness and advocacy for children with disabilities, as emphasized by global health organizations and the United Nations (Arora et al., 2018).

5. CONCLUSION AND SUGGESTION

Based on the data analysis it can be concluded that the percentage of students who make errors in English diphthong pronunciation is low. The average number of incorrect pronunciations is 22% and correct pronunciation is 78%. The error is mostly found in diphthong /ɪə/ 75% errors, /aʊ/ 59% errors, and /eə/ 25% errors.

In addition, the factors that cause the errors made by the fifth-grade students in North Bali Bilingual School are native language which 26 students speak Indonesian as their first language and 4 students speak English as their first language, phonological interference that occurs because of the phonological differences between English and Indonesian phonetic alphabet, avoidance that occurs because of the students tend to be afraid of making errors, and the most unique one in the result of this analysis is neurodevelopmental disorders.

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REFERENCES

- Alek. (2023). *What is the status of English language in Indonesia? A glance of preliminary theoretical review*. Universitas Islam Negeri Syarif Hidayatullah Jakarta.
- Ambalegin, & Arianto, T. (2019). A phonology-based study: English pronunciation inconsistency. *KnE Social Sciences*. <https://doi.org/10.18502/kss.v3i19.4834>
- Ambalegin, A. (2022). Nonnative be like native speakers: The phonological processes of characters' English pronunciation in *Black Panther* movie. *Journal of Applied Studies in Language*, 6(1), 15–25. <https://doi.org/10.31940/jasl.v6i1.337>
- Arora, N. K., Nair, M. K. C., Gulati, S., Deshmukh, V., Mohapatra, A., Mishra, D., Patel, V., Pandey, R. M., Das, B. C., Divan, G., Murthy, G. V. S., Sharma, T. D., Sapra, S., Aneja, S., Juneja, M., Reddy, S. K., Suman, P., Mukherjee, S. B., Dasgupta, R., & Tudu, P. (2018). Neurodevelopmental disorders in children aged 2–9 years: Population-based burden estimates across five regions in India. *PLOS Medicine*, 15(7), e1002615. <https://doi.org/10.1371/journal.pmed.1002615>
- Davenport, M., & Hannahs, S. J. (2020). *Introducing phonetics and phonology*. Routledge. <https://doi.org/10.4324/9781351042789>

- Dosia, P. A., & Rido, A. (2017). Production of English diphthongs: A speech study. *TEKNOSASTIK*, 15(1), 21. <https://doi.org/10.33365/ts.v15i1.17>
- Fahmi, M. R. (2021). Students' errors in pronouncing English vowels and diphthongs: A case study of SEC (Smanik English Club) of SMA N 1 Kendal in the academic year 2019/2020 (Unpublished bachelor's thesis).
- Feisal Aziez, & Intan Sofiana. (2023). Deep in the diphthong problem: A study on Indonesian EFL learners' pronunciation development and the influence of individual differences. *Komposisi*, 24(2), 91–91. <https://doi.org/10.24036/komposisi.v24i2.122553>
- Giegerich, H. J. (2012). Speech sounds and their production. In *English phonology* (pp. 1–). Cambridge University Press. <https://doi.org/10.1017/CBO9781139166126>
- Gimson, A. C. (1970). *An introduction to the pronunciation of English*. Edward Arnold.
- Hall, G., & Cook, G. (2012). Own-language use in language teaching and learning. *Language Teaching*, 45(3), 271–308. <https://doi.org/10.1017/s0261444812000067>
- Hegde, M. N. (2022). A critical review of phonological theories. *Journal of The All India Institute of Speech and Hearing*, 40(1). <https://doi.org/10.4103/jose.JOSE>
- Indrawati, N. L. K. M. (2021). The capability of pronouncing the English diphthongs by the English department students, Faculty of Humanities, Udayana University. *International Journal of Current Science Research and Review*, 4(5). <https://doi.org/10.47191/ijcsrr/v4-i5-11>
- Kelly, G. (2000). *How to teach pronunciation*. Pearson Education Limited.
- Kingston, J. (2003). Learning foreign vowels. *Language and Speech*, 46(2-3), 295–348. <https://doi.org/10.1177/00238309030460020201>
- Mahendra, M. W., & Marantika, I. M. Y. (2020). The phonological interference in EFL reading. *ELLITE: Journal of English Language, Literature, and Teaching*, 5(1), 27–34. <https://doi.org/10.32528/ellite.v5i1.3272>
- Nordquist, R. (2017). How to know when you mispronounce a word. *ThoughtCo*. Retrieved January 24, 2018, from <http://www.thoughtco.com>
- Pourhossein Gilakjani, A. (2016). English pronunciation instruction: A literature review. *International Journal of Research in English Education*, 1(1), 1–6. <https://ijreeonline.com/article-1-21-en.html>
- Ramelan. (1999). *English phonetics*. CV. IKIP Semarang Press.
- Roach, P. (1991). *English phonetics and phonology*. Cambridge University Press.
- Sargunawan, G. N. S. P. P. (2023). Error analysis of English by eighth grade students at SMPN 4 Baturiti [Skripsi, Universitas Udayana]. <https://e-perpus.unud.ac.id/repositori/Skripsi?nim=1601542028>

- Sari, K. M., & Fatmasari, Y. (2019). Error analysis on English diphthongs pronounced by Indonesian students in English debate competition posted on YouTube. *Dialektika*, 7(1), 38–55.
- Seidlhofer, B. (2010). Pronunciation. In R. Carter & D. Nunan (Eds.), *The Cambridge guide to teaching English to speakers of other languages* (pp. 119–130). Cambridge University Press. <https://doi.org/10.1017/CBO9780511667206.009>
- Sheffield, U. (2024). Phonetics. *Sheffield.ac.uk*.
<https://www.sheffield.ac.uk/linguistics/home/all-about-linguistics/about-website/branches-linguistics/phonetics>
- Tenny, S., Brannan, J., & Brannan, G. (2022, September 18). Qualitative study. *National Library of Medicine; StatPearls Publishing*.
<https://www.ncbi.nlm.nih.gov/books/NBK470395/>
- Vogindroukas, I., Stankova, M., Chelas, E.-N., & Proedrou, A. (2022). Language and speech characteristics in autism. *Neuropsychiatric Disease and Treatment*, 18, 2367–2377.
<https://doi.org/10.2147/ndt.s331987>