



## Investigating Phonological Errors in the Pronunciation of English Vowel Diphthongs Among Fourth-Grade Students at Al-Kautsar Islamic Modern Boarding School

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### Abstract

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This research aims to analyze the phonological errors made by fourth-grade students at Al-Kautsar Islamic Modern Boarding School in pronouncing English vowel diphthongs. A descriptive qualitative method was applied to explore students' pronunciation by analyzing their recorded speech. The participants were five students from class IV-C during the 2024/2025 academic year. Each student performed a speech that was recorded and evaluated using phonetic software based on International Phonetic Alphabet (IPA) standards. The results demonstrated that students often had difficulties pronouncing diphthongs such as /eɪ/ and /oʊ/, largely due to interlingual influences (native language interference) and intralingual issues (complexity of the English language and unfamiliar phonological structures). It was observed that the diphthongs /aɪ/, /eɪ/, and /oʊ/ appeared frequently in the students' speech, while others like /eə/ and /ʊə/ were either rare or absent. This absence is attributed to the prevalent use of American English pronunciation, which does not frequently utilize these diphthongs. The analysis revealed various levels of proficiency among the participants, with scores ranging from poor to good. These findings underline the importance of enhancing phonological awareness and pronunciation training among EFL learners. The study concludes with practical suggestions for improving pronunciation instruction through phonetics-based activities and greater exposure to native-like speech.

**Keywords:** analysis, Pronunciation, Vowel Diphthong.

## Introduction

The accurate production of speech sounds, especially in English as a Foreign Language (EFL), is a fundamental component of communication skills. Mastery of pronunciation enables learners to be understood by others and to comprehend spoken input effectively. According to Gilakjani (2012), pronunciation develops through repeated practice and correction, forming a habit that reinforces accurate sound production. reinforces that the objective of teaching pronunciation is not to produce native-like speakers but to ensure learners speak clearly and are easily understood by others. Teachers are therefore encouraged to set realistic expectations, focusing on comprehensibility rather than accent replication (Derwing & Munro, 2005)

Effective communication, as outlined by Koontz and O'Donnell (2005), involves an exchange between speaker and listener, where thoughts and intentions are conveyed and interpreted. In this interaction, pronunciation plays a crucial role, particularly in academic environments. Mispronunciation often leads to misunderstanding, and in EFL classrooms, it can hinder the learning process for both speaker and listener. One of the major challenges faced by Indonesian learners is the discrepancy between their first language phonology and English. The Indonesian language lacks features such as sound clusters, word stress, and aspirated consonants. Moreover, Indonesian has fewer vowel diphthongs, specifically [ai], [au], and [ɔi], commonly found in words like *sampai*, *kerbau*, and *meridhoi*. This limited inventory leads to frequent errors when learners attempt to pronounce the nine English diphthongs identified in the International Phonetic Alphabet (IPA).

Based on preliminary observations, students at Al-Kautsar Islamic Modern Boarding School in Pekanbaru often mispronounce diphthong-rich words such as *eight* (commonly rendered as /et/, /eich/), *engineer* (/enginer/), and *though* (/taugh/, /dough/). These mistakes suggest both interlingual (first language interference) and intralingual (complexities within the target language) influences. English is taught at Al-Kautsar Islamic Modern Boarding School using the national 2013 curriculum (K-13), which integrates speaking, reading, writing, and listening in weekly lessons. Despite this curriculum design, classroom observations show that students receive insufficient focused instruction on pronunciation. Teachers often blend English with Indonesian during instruction, which causes learners to rely more on their first language and limits their exposure to accurate English phonology. As a result, learners struggle to differentiate between how words are spelled and how they are pronounced(Habibie, 2021).

Additionally, classroom instruction is constrained by limited teaching time and challenges posed by school admissions, curriculum transitions, and varying student entry levels. These systemic issues place added stress on teachers and create inconsistencies in learners' phonological development. Students often avoid speaking in English, stating that pronunciation is difficult to master. This hesitation affects overall participation and leads to further gaps in their oral proficiency. This research was conducted to analyze phonological errors specifically related to the pronunciation of vowel diphthongs among fourth-grade students at Al-Kautsar Islamic Modern Boarding School during the 2024/2025 academic year. By investigating these common mispronunciations, the study aims to identify their causes and offer instructional insights that could enhance pronunciation teaching in EFL contexts.

## Methodology

This research employed a descriptive qualitative design aimed at exploring and describing the students' pronunciation of English diphthongs. The study was conducted at Al-Kautsar Islamic Modern Boarding School, focusing on fourth-grade students enrolled during the 2024/2025 academic year. A total of five students from class IV-C were selected as participants.

To collect data, the students were asked to deliver short speeches on selected topics such as education, lifestyle, and religion. Each speech ranged from two to seven minutes and was recorded for analysis. The recordings were transcribed and examined using two digital tools: the Cambridge Online Dictionary and a phonetic transcription application. Both applications provided phonemic representations based on International Phonetic Alphabet (IPA) standards and were capable of detecting pronunciation in either British or American accents. The American model was chosen due to its prevalence among the participants.

The analysis process followed several steps: (1) reviewing the recorded speeches, (2) transcribing them carefully, (3) converting transcripts into phonemic transcriptions using phonetic tools, (4) identifying and extracting diphthong-containing words, and (5) evaluating the accuracy of pronunciation with reference to standard IPA.

To assess student performance, a scoring rubric was adapted from Layman (2002). The original rubric assessed general speech clarity, but it was modified to evaluate the pronunciation of specific words. The scoring categories are presented below:

**Table 1 Pronunciation Assessment**

Classification	Score	Criteria
Excellent	9.6 – 10	Most of words pronounced correctly and they only make small mistakes
Very good	8.6 – 9.5	Many of words pronounced correctly and they make some mistakes
Good	7.6 – 8.5	More words pronounced correctly and they do not make many mistakes
Fairly good	6.6 – 7.5	More words pronounced correctly but they make many mistakes
Fair	5.6 – 6.5	The words pronounced correctly almost balanced with words pronounced incorrectly
Poor	3.6 – 5.5	There are many words pronounced incorrectly
Very poor	0.0 – 3.5	There are too many words pronounced incorrectly

To determine each student's score, the following formula was applied:

$$\text{Score} = \frac{\text{Students' Correct Answer}}{\text{Total Answer}} \times 10$$

This score provided a clear numerical representation of each participant's ability to pronounce diphthongs accurately.

## Results and Discussion

The pronunciation test was used to analyze diphthong sounds pronounced by the participants. There are 8 diphthongs in English based on the International Phonetic Alphabet (IPA) standard that are discussed in this part. The 8 of them consist of diphthongs ending in **a** (/ɪə/, /eə/, /ʊə/), ending in **i** (/eɪ/, /aɪ/ /ɔɪ/), and ending in **u** (/əʊ/, /aʊ/). Due to the variety of words and participants, the result of this research is explained based on the subject of the research, which consists of 5 students, while each type of diphthong is described in it and followed by the table.

Participant 1

Table 1. Result of Diphthong Sounds by Participant 1

Diphthong	Word	Correct Pronunciation	Student Pronunciation	Accuracy			
aɪ	High	hai	hei	Incorrect			
aʊ	ou	Go	gou	go	Incorrect		
eɪ	Day	deɪ	deɪ	Correct			
eə	Care	keə	ka	Incorrect	Down	daʊn	

Table 1 presents the diphthong pronunciation results of Participant 1. From the overall analysis, it was observed that Participant 1 used 4 out of the 8 commonly recognized English diphthongs during their speech. These include /aɪ/, /eɪ/, /əʊ/, and /ʊə/. The total number of diphthong words identified in this participant's speech was 30. Of these, 13 words were pronounced correctly, while 17 were mispronounced.

Below is the detailed analysis of each diphthong:

- Diphthong /aɪ/:** This sound appeared in five words: *By, High, I, My, and Why*. The participant successfully pronounced all of these words using the correct /aɪ/ diphthong, indicating a solid understanding of this sound.
- Diphthong /eɪ/:** Sixteen words contained this diphthong, including *Behave, Behavior, Crazy, Day, Disable, Face, Hating, Ladies, May, Maybe, Name, Okay, Same, Say, Today, and Ways*. Of these, seven words were pronounced correctly, while nine were incorrect. Common mispronunciations included *Behave* as /bɪ'hav/, *Behavior* as /bɪ'havjə/, *Crazy* as /'krezi/, *Face* as /fes/, *Hating* as /'heatɪŋ/, *Ladies* as /'ledɪz/, *May* as /mai/, *Same* as /sem/, and *Ways* as /waɪz/. These errors indicate confusion between vowel quality and diphthong transitions.
- Diphthong /əʊ/:** This diphthong was found in eight words: *Don't, Emotionally, Go, Hope, Know, Moment, Okay, and So*. Only *Know* was pronounced correctly with the /əʊ/ diphthong. The remaining seven words lacked the appropriate glide from /o/ to /ʊ/, and were often reduced to monophthongs (e.g., *Go* pronounced as /go/).
- Diphthong /ʊə/:** This sound appeared in one word, *Individually*, which was pronounced correctly as /'ɪndɪ'vɪdʒuəli/. This suggests that although infrequent, the participant was capable of producing less common diphthongs accurately when familiar with the word.

Based on the scoring system outlined in the methodology and using the formula: Participant 1's pronunciation ability regarding diphthongs is classified as **Poor**, reflecting the need for focused instructional support in this area.

### Participant 2

Table 3. Result of Diphthong Sounds by Participant 2

Diphthong	Word	Correct Pronunciation	Student Pronunciation	Accuracy
/aɪ/	My	mai	mai	Correct
/oʊ/	Show	sou	so	Incorrect
/aʊ/	House	haus	haus	Incorrect
/eɪ/	Face	feɪs	fes	Incorrect
/eə/	Hair	heə	her	Correct

Table 2 shows the performance of Participant 2 in pronouncing English diphthongs. Based on the analysis, the participant produced a total of five words that contained diphthong sounds, representing five different diphthongs: /aɪ/, /oʊ/, /aʊ/, /eɪ/, and /eə/. Among these, two words were pronounced correctly and three were mispronounced.

1. **Diphthong /aɪ/**: The participant encountered one word, *My*, pronounced correctly as /mai/. This indicates familiarity with this commonly used diphthong.
2. **Diphthong /oʊ/**: In the word *Show*, the participant failed to produce the correct diphthongal glide, pronouncing it as /so/ instead of the standard /sou/, making this an incorrect pronunciation.
3. **Diphthong /aʊ/**: The word *House* was pronounced as /haus/, omitting the proper transition, and thus was classified as incorrect.
4. **Diphthong /eɪ/**: The participant mispronounced the word *Face* as /fes/ rather than the standard /feɪs/, suggesting difficulty in recognizing or producing the diphthong.
5. **Diphthong /eə/**: In contrast, the participant correctly pronounced *Hair* as /heə/, demonstrating awareness of this less common diphthong.

Based on the above analysis, the participant correctly pronounced 2 out of 5 diphthong words. Applying the scoring formula:

Thus, Participant 2's diphthong pronunciation ability is also classified as **Poor**, indicating the necessity for reinforced instruction and targeted phonetic practice.

### Participant 3

Table 4. Result of Diphthong Sounds by Participant 3

Diphthong	Word	Correct Pronunciation	Student Pronunciation	Accuracy
/oʊ/	Know	nou	nou	Correct

ai	Fight	faɪt	fæt	Incorrect
au	Out	aʊt	aut	Correct
ei	Say	seɪ	se	Incorrect
ʊə	Poor	pʊə	puə	Correct

Participant 3 used five diphthong words, distributed among /ou/, /ai/, /au/, /ei/, and /ʊə/. Among these, three were pronounced correctly and two were mispronounced.

1. **Diphthong /ou/**: The word *Know* was pronounced correctly as /nou/.
2. **Diphthong /ai/**: *Fight* was mispronounced as /fæt/, which is a deviation from the correct form /faɪt/.
3. **Diphthong /au/**: *Out* was accurately produced as /aʊt/.
4. **Diphthong /ei/**: *Say* was pronounced as /se/, missing the correct glide found in /seɪ/, and therefore was incorrect.
5. **Diphthong /ʊə/**: *Poor* was pronounced correctly as /pʊə/.

Using the score formula:

The score places Participant 3 in the **Fair** category of pronunciation performance.

#### Participant 4

Table 5. Result of Diphthong Sounds by Participant 4

Diphthong	Word	Correct Pronunciation	Student Pronunciation	Accuracy
ei	Name	neɪm	nem	Incorrect
au	Loud	laʊd	lawd	Incorrect
ou	Hope	hoʊp	hop	Incorrect
ai	Time	taɪm	taim	Correct
ɛə	Bear	beə	ber	Correct

In Participant 4's performance, five diphthong words were observed across /ei/, /au/, /ou/, /ai/, and /ɛə/. Three were pronounced correctly, while two were incorrect.

1. **Diphthong /ei/**: *Name* was mispronounced as /nem/, failing to exhibit the full diphthongal structure /neɪm/.
2. **Diphthong /au/**: *Loud* was pronounced as /lawd/, not accurately reflecting the intended diphthong /laʊd/.
3. **Diphthong /ou/**: *Hope* was reduced to /hop/, missing the /ʊ/ glide of /hoʊp/.
4. **Diphthong /ai/**: *Time* was accurately pronounced as /taɪm/.
5. **Diphthong /ɛə/**: *Bear* was correctly articulated as /beə/.

Correct: 2 (Time, Bear) — out of 5 total.

Participant 4's pronunciation is thus rated as Poor.

Participant 5

Table 6. Result of Diphthong Sounds by Participant 5

Diphthong	Word	Correct Pronunciation	Student Pronunciation	Accuracy
au	Around	ə'raʊnd	əraʊn	Incorrect
ou	Phone	foun	fon	Correct
eɪ	Rain	reɪn	rein	Correct
ai	Sky	skai	skai	Correct
ʊə	Secure	sɪ'kjʊə	sikjʊə	Correct

Participant 5 used five diphthong-containing words, spanning /ao/, /oo/, /ei/, /ai/, and /ʊə/. Four were pronounced correctly, with only one error noted.

1. Diphthong /ao/: *Around* was incorrectly pronounced as /əraʊn/, showing incomplete final glide.
2. Diphthong /oo/: *Phone* was correctly pronounced as /foun/.
3. Diphthong /ei/: *Rain* was accurately pronounced as /reɪn/.
4. Diphthong /ai/: *Sky* was correctly said as /skai/.
5. Diphthong /ʊə/: *Secure* was correctly pronounced as /sɪ'kjʊə/.

Using the formula

Participant 5's result is categorized as **Good** in terms of diphthong pronunciation.

## Discussion

The findings from the analysis of five student participants reveal a significant pattern in the pronunciation of English diphthongs among fourth-grade learners at Al-Kautsar Islamic Modern Boarding School. Most students showed substantial difficulty in accurately pronouncing diphthongs, particularly /ei/, /oo/, and /ao/. These challenges are consistent with previous literature that attributes pronunciation errors in EFL learners to both interlingual influences and the phonetic complexities of English (Gilakjani, 2016; Roach, 2001).

Participants 1 through 4 scored poorly, with accuracy rates ranging from 40% to 60%, indicating a persistent issue with diphthong production (Lihawa et al., 2023). Mispronunciations often involved simplification of diphthongs into monophthongs or substitution with more familiar sounds from the students' native language (Saleh et al., 2023). This reflects a lack of exposure to authentic pronunciation models and minimal practice with segmental features. In contrast, Participant 5 demonstrated stronger performance, suggesting that with sufficient practice or phonetic awareness, learners can achieve better accuracy even at an early grade level.

Another key observation is the absence or misuse of diphthongs such as /ʊə/ and /eə/, which are less common in daily spoken English and may not be emphasized during instruction (Jusuf, 2018). The better performance on diphthongs like /ai/ and /ei/ indicates that familiarity and frequency of use in classroom vocabulary play a role in student accuracy. Therefore, teachers must ensure a balanced phonetic focus in their instruction (Akhmad et al., 2023).

## Conclusion

Based on the results, it is evident that the majority of fourth-grade students at Al-Kautsar Islamic Modern Boarding School face notable challenges in pronouncing English vowel diphthongs correctly. Out of the five students analyzed, only one achieved a classification above "Poor," confirming that pronunciation is a critical issue that requires immediate pedagogical attention. The most frequent errors were found in /oo/ and /ei/, while better results appeared in /ai/ and /ʊə/, depending on student exposure and familiarity.

The study highlights that incorrect pronunciation of diphthongs can hinder both comprehension and communication, particularly in academic settings where clarity is vital. These outcomes support the argument that pronunciation instruction must be a deliberate component of EFL teaching, not an incidental one. Furthermore, tailored pronunciation assessments, as used in this research, provide valuable diagnostic tools for educators.

Improving students' pronunciation of diphthongs requires a collaborative and long-term effort among all stakeholders in the learning process. Teachers should adopt an explicit phonics-based approach, administrators should ensure access to phonological learning resources, and students must be encouraged to take ownership of their learning through consistent practice and reflection. When all these factors align, improvements in pronunciation and oral communication are not only possible but also sustainable.

### **Suggestion**

The suggestions are developed based on the scope and limitation of the study and significance of the study. Some suggestions are offered to improve the weakness of this study; suggestions are made to the future the researcher at the same field of this study.

#### **1. For the students**

Encourage independent listening and repetition practices using online dictionaries and language apps that support IPA-based learning. Participating in peer conversation activities can also build confidence and fluency. Students should also be encouraged to record and analyze their own speech for self-assessment and better awareness of their pronunciation patterns.

#### **2. For the Teacher**

Integrate focused phonetic exercises, such as choral reading, minimal pair drills, and visual IPA aids, into daily lessons. Consider using audio-visual tools that model proper diphthong usage in context. Encourage classroom activities that focus on targeted listening and mimicry, allowing students to recognize the contrast between correct and incorrect diphthong pronunciations.

#### **3. For the other Researchers**

Conduct similar studies on a larger scale and include comparative analyses between grade levels or curriculum models. Exploring the effectiveness of intervention strategies such as phonetic training programs, multimedia integration, or native-speaker exposure can provide deeper insights into long-term pronunciation improvement and instructional innovation.

#### **4. For Curriculum Developers and School Administrators**

Emphasize the inclusion of phonetics and pronunciation modules in the EFL curriculum from the early grades. Provide teachers with ongoing training opportunities in pronunciation instruction and invest in language laboratories or digital tools that support phonological development in learners.

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