Research Article

"[e1], [00], [a1]": A Quantitative Study on High School Students' Errors in Pronouncing English Diphthong

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Abstract

The objective of this study was to find out the errors made by students in pronouncing diphthong "er, oo, ar". This study used a quantitative approach. To obtain valid data, the researchers conducted a test that was carried out to 30 students as the sample taken from IX IPA 1 of SMA Negeri 4 Langsa. Based on the research, the data showed that one student made errors 6 times and got score 50, three students made errors 5 times and got score 58. Seven students made errors 2 times and got score 67, four students made errors 3 times and got score 75. Eight students made errors 2 times and got score 83. Six students made errors 1 time and got score 92. There was only one student who made no errors and got score 100. The cause of errors in pronouncing English diphthongs was revealed to be interference of the mother tongue which is popular as the basic principle of contrastive analysis. The coming preservice teachers were able to design appropriate lesson plan in teaching diphthong pronunciation. In addition, it is hoped that they can construct the suitable material for various levels based on the needs of learners.

Keywords

Diphthong; error; pronunciation

Introduction

In Indonesia, in this globalization era, one of foreign language that is considered essential to be mastered by the modern people to help themselves in facing the period is English language even though they often made error in pronouncing words (Razali & Husna, 2018). As the consequence, people required to learn pronunciation of the language since a good pronunciation influences the word meaning (Ambarwati & Mandasari, 2020). In other words, different pronunciation is possible to provide different meaning. It means that some misunderstandings in conversation could be exist due to the wrong pronunciation (Alimin, 2022). Diphthong is one of essential issue in pronunciation (Demircioglu, 2013). However, for some students, English pronunciation seems difficult to be

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mastered, and it requires specific assistance from the teacher to make students know how to pronounce correctly (Fadillah, 2020). This idea also is supported by Darmawan (2018) who said that appropriate media can assist students to learn correct pronunciation. In this case, the researchers conduct a preliminary interview with some students who did not know how to pronounce English words especially English diphthongs, but some of them did not care about good pronunciation and if they were given the task of reading aloud, the students just read and neglect the pronunciation. Furthermore, Mulya and Mujiyanto (2018) state that the students' errors in English diphthongs pronunciation is caused by the lack of knowledge about English diphthongs and because of the influence of L1 transfer. Besides, the fact that a large number of diphthong sounds in English is not exist in Bahasa also being the reason of the barrier (Anwar & Kalisa, 2020).

In line with the description above, reading aloud is one of the techniques in language learning that emphasize on how to read with an adequate stress, intonation, and pronunciation (Liu, et al., 2020). In this situation, the researchers concluded that students' lack of pronunciation knowledge in reading aloud can cause them to make errors in doing this activity. Reading aloud is the activity which have students say word for word with the emphasis on the correct intonation and pronunciation (Budiman & Kania, 2019). For instances, based on researchers' preliminary study, it is found that students are lack of ability to the read, so that the pronunciation of English diphthongs is still erroneous. For example, diphthong [σ] in the word "coat" was pronounced [kot]. The pronunciation should be [koot]. Diphthong [Ia], for example "lime" was pronounced [der]. The pronunciation should be [dIa]. Hence, this issue is required a further investigation.

Meanwhile, there are several research had been conducted regarding English pronunciation. Firstly, Lulu and Rukmini (2018) administered a reading test to find the students' errors in pronouncing English vowel sounds. Secondly, an analysis on students' errors in pronouncing English consonant sounds had been done by Elvionita (2019), and she found that the highest students' error was in pronouncing $[\theta]$ consonant symbol with 21,70% and the lowest error was in pronouncing [w] consonant symbol with 2.33%. Then, these differentiate both studies to ours which aimed to investigate the students' errors in pronouncing English diphthong sounds, not the vowel or consonant sounds. Thirdly, Rustipa et al., (2022) also administered a text-based teaching to improve students' English diphthong pronunciation mastery in an experimental research design.

Furthermore, Pratiwi and Indrayani (2021) also have conducted research about pronunciation errors on English diphthong made by students. In this research, the researchers found that 4 students used Standard English accent and 5 students used general American accent. The difference between their researches with this one is that the form of subject and the kind of diphthong sounds being investigated. In the previous research, the researchers described the sounds of [e1], [ϵ ə], [υ ə], and [a1], which had been conducted among 9 post-graduate students. Meanwhile, this research works on [e1], [υ o], and [a1]1 diphthong sound conducted among eleven graders.

Ramelan (2003) as quoted by Rasaki, Ikhsan, and Pratiwi (2018) explains that diphthong [e_1] is a frontfront closing half diphthong. Furthermore, they describe that primary, the tongue starts from the place for the vowel [e], a front vowel which is a little lower than the half close position. Then, the tongue changes in the direction of the vowel position of [I], which is few above the half close position, yet it is not inevitably touched. The lips are blowout, and slowly closing. Diphthong [o_0] is a back-back closing half diphthong. For the beginning, some part of the tongue between the back and the center is raised to a point between half- close and half open position. Then, the tongue transfers to a nearer location in the direction of [v], a back centralized vowel, which is few above the half-close position. Diphthong [a_1] is a front-front closing full diphthong. Primary, the front of the tongue is very raised a little for the first component of the diphthong [a_1], which is a front vowel with a position in between



[æ] and [a:]. Then, the tongue changes to a closer position as if to produce [I] vowel sound, nevertheless, this position is normally not reached (at become æ). The lips are separately and gradually closing. This research focused only on those three diphthong sounds. Thus, based on the description above, this research aims to analyze the students' errors in pronouncing English diphthong sounds "[eI], [ov], [aI]".

Based on the elaboration above, the question of this research is: "what kind of errors made by the students in pronouncing English diphthong sounds " $[e_1]$, $[o_0]$, $[a_1]$?". The significance of the study is to figure out kinds of errors made in pronouncing English diphthong sounds " $[e_1]$, $[o_0]$, $[a_1]$?" so the errors can be overcome appropriately.

Method

This research applied quantitative approach and it took place at SMA Negeri 4 Langsa, Aceh. As Gay et al. (2012) said that quantitative design help researchers to conduct an accurate and reliable data in numerical form, although, it provides a quick data collection process. This design is applicable to be worked on natural and social science investigation, including language learning (Gao et al., 2022).

The population of this research was the eleventh-grade students of SMA Negeri 4 Langsa which consisted of 30 students in XI IPA 1, 30 students in XI IPA 2, 30 students in XI IPA 3, 30 students in XI IPS 1, and 30 students in XI IPS 2. The entire numbers of students were 150 students. The researchers only got XI IPA 1 that consists of 30 students as the sample of this research.

In order to get data and to know the errors made by the students, the researchers conducted a test. It was given to know the kind of errors that students made on diphthong sounds pronounced. The researchers gave 12 words for the students and they need to pronounce them.

After collecting the data, the researchers analyzed it by using statistical investigation in the form of percentage to assist the researchers in providing data description and interpretation. The researchers tend to use their own words which are related to English phonetics theories. The theories provide explanation regarding pronunciation and it also enlightens the type of diphthongs and how to pronounce it. In brief, the researchers' steps in analyzing the data are identifying, categorizing, evaluating, and drawing the conclusion of the errors students made.

To get the result of research, the researchers get as survey and find out how far students understand diphthong sound pronounced, the researchers used a statistic formula by Mueller (1990) as follows: $P = \frac{F}{N} \times 100\%$

With:

P = Percentage F = Frequency N = Number of students

Results

The transcriptions of 30 students were grouped based on the words that consist of diphthongs according to the correct pronunciation. The groups were divided again based on each diphthong.

Diphthong [e1]

There are 4 major words mispronounced by the students. They are Raid, Pain, Fail and Tail.



Students	Raid	Pain	Fail	Tail	Total Error
I		V	V	×	1
II	×			\checkmark	1
III	\checkmark	×	\checkmark	×	2
IV		×	×		2
V	×		\checkmark	×	2
VI	\checkmark	\checkmark	\checkmark	×	1
VII	\checkmark	\checkmark	\checkmark	\checkmark	0
VIII			\checkmark	\checkmark	0
IX		×	\checkmark	×	2
X			\checkmark	\checkmark	0
XI	×		×	\checkmark	2
XII			\checkmark	\checkmark	0
XIII			×	\checkmark	1
XIV	×	\checkmark	\checkmark	\checkmark	1
XV	×	\checkmark	\checkmark	×	2
XVI	\checkmark	×	\checkmark	\checkmark	1
XVII	\checkmark	\checkmark	\checkmark	\checkmark	0
XVIII		\checkmark	\checkmark	\checkmark	0
XIX	\checkmark	×	\checkmark	\checkmark	1
XX		\checkmark	\checkmark	\checkmark	0
XXI		\checkmark	×	\checkmark	1
XXII			\checkmark	\checkmark	0
XXIII		\checkmark	\checkmark	\checkmark	0
XXIV		×	\checkmark	\checkmark	1
XXV	\checkmark	\checkmark	×	\checkmark	1
XXVI	\checkmark	\checkmark	\checkmark	\checkmark	0
XXVII	\checkmark	×	\checkmark	\checkmark	1
XXVIII	\checkmark		\checkmark		0
XXIX	\checkmark	×	\checkmark	\checkmark	1
XXX	\checkmark		×		1
Total Error	5	8	6	6	25
Percentage	20%	32%	24%	24%	100%

Table 1. The sum of mispronounced diphthong sounds [ei]

Based on the table 1, there are 5 errors (20%) from 25 mispronounced diphthong sounds have made errors in pronouncing the first word of "Raid". Actually, the students should pronounce the word with "Reid", but some of them answer it with pronouncing "Raid". This error is type of inter language error (Erdoğan, 2005). It occurs because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The second word is "Pain". There are 8 errors (32%) from 25 mispronounced diphthong sounds have made errors in pronouncing the word. Actually, the students must pronounce the word with "Pein", but some of them answer it with pronounced "Pain". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The third word is "Fail". There are 6 errors (24%) from 25 mispronounced diphthong sounds have made errors in pronouncing the word. Actually, the students must pronounce the word with "Feil", but



some of them answer it with pronounced "Fell". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The last word is "Tail". There are 6 errors (24%) from 25 mispronounced diphthong sounds have made errors in pronouncing the word. Actually, the students must pronounce the word with "Teil", but some of them answer it with pronounced "T3il". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

Diphthong [ov]

There are 4 major words mispronounced by the students. They are Code, Coat, Coast, and Tone.

Students	Code	Coat	Coast	Tone	Total Error
I	×		×		2
II					0
II		×		×	2
IV	×	\checkmark	\checkmark	\checkmark	1
V	×	\checkmark	×	\checkmark	2
VI	\checkmark	\checkmark	×	\checkmark	1
VII	×	\checkmark	\checkmark	\checkmark	1
VIII	\checkmark	×	\checkmark	\checkmark	1
Х	\checkmark	\checkmark	\checkmark	\checkmark	0
X	\checkmark	×	\checkmark	\checkmark	1
ΚI	\checkmark	\checkmark	\checkmark	×	1
KII	\checkmark	\checkmark	\checkmark	\checkmark	0
KIII	\checkmark	\checkmark	×	\checkmark	1
KIV		\checkmark	\checkmark	\checkmark	0
ΧV	\checkmark	\checkmark	×	\checkmark	1
KVI	\checkmark	×	\checkmark	\checkmark	1
XVII	\checkmark	\checkmark	\checkmark	\checkmark	0
XVIII	\checkmark	×		\checkmark	1
KIX		\checkmark	\checkmark	\checkmark	0
KΧ	\checkmark	×	\checkmark	\checkmark	1
XXI	\checkmark	\checkmark	\checkmark	\checkmark	0
XXII	×	\checkmark	\checkmark	\checkmark	1
XXIII		×	\checkmark	\checkmark	1
XXIV	\checkmark	\checkmark	×	\checkmark	1
XXV	×	\checkmark	\checkmark	×	2
XXVI		\checkmark	\checkmark	\checkmark	0
XXVII	\checkmark	\checkmark	\checkmark	\checkmark	0
XXVIII			×	\checkmark	1
XXIX	\checkmark	×	\checkmark	\checkmark	1
XXX	\checkmark	×	\checkmark	\checkmark	1
TOTAL	6	9	7	3	25
Percentage	24%	36%	28%	12%	100%

Table 2. The sum of mispronounced diphthongs sound [ov]

Based on the table 2, there are 6 errors (24%) from 25 mispronounced diphthong sounds have made errors in pronounced the first word of "Code". Actually, the students must pronounce the word with



"Koud", but some of them answer it with pronounced "Kod". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The second word is "Coat". There are 9 errors (36%) from 25 mispronounced diphthong sounds have made errors in pronounced the word. Actually, the students must pronounce the word with "Koot", but some of them answer it with pronounced "Koat". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The third word is "Coast". There are 7 errors (28%) from 25 mispronounced diphthong sounds have made errors in pronounced the word. Actually, the students must pronounce the word with "Kous:", but some of them answer it with pronounced "Koas". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The last word is "Tone". There are 3 errors (12%) from 25 mispronounced diphthong sounds have made errors in pronounced the word. Actually, the students must pronounce the word with "Toon", but some of them answer it with pronounced "Ton". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

Diphthong [a1]

There are 4 major words mispronounced by the students. They are Mine, File, Rice, and Lime.

Students	Mine	File	Rice	Lime	Total Error
I	×		×		2
II			\checkmark		0
III	×		×		2
IV		×	\checkmark	×	2
V	×	\checkmark			1
VI		×			1
VII			\checkmark		0
VIII		\checkmark			0
IX	×	×			2
X				×	1
XI				×	1
XII				×	1
XIII	×			×	2
XIV				×	1
XV					0
XVI		×			1
XVII		\checkmark	\checkmark	\checkmark	0
XVIII	×	\checkmark	\checkmark		1
XIX	×	\checkmark	\checkmark	\checkmark	1
XX		\checkmark	\checkmark		0
XXI		×	\checkmark		1
XXII		\checkmark			0
XXIII	×		×	×	3
XXIV		×			1
XXV	, V	×	, V		1
XXVI	J	Ń	×	J	1
XXVII	J	V	×	J	1
XXVII	N	N	Ń	N N	1

Table 3. The sum of mispronounced diphthongs sound [ai]

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XXIX XXX TOTAL	$\stackrel{}{\times}$ 9	$\sqrt{\times}$ 8	イ イ 5	イ イ 7	0 2 29
Percentage	31,03%	27,59%	17,24%	24,14%	100%

Based on the table 3, there are 9 errors (31,03%) from 29 mispronounced diphthong sounds have made errors in pronounced the first word of "Code". Actually, the students must pronounce the word with "Kood", but some of them answer it with pronounced "Kod". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The second word is "Coat". There are 8 errors (27,59%) from 29 mispronounced diphthong sounds have made errors in pronounced the word. Actually, the students must pronounce the word with "Kood", but some of them answer it with pronounced "Kod". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The third word is "Coast". There are 5 errors (17,24%) from 29 mispronounced diphthong sounds have made errors in pronounced the word. Actually, the students must pronounce the word with "Kous:", but some of them answer it with pronounced "Koas". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

The last word is "Tone". There are 7 errors (24,14%) from 29 mispronounced diphthong sounds have made errors in pronounced the word. Actually, the students must pronounce the word with "Toon", but some of them answer it with pronounced "Ton". This error is type of inter language error, because interference of the mother tongue which is popular as the basic principle of contrastive analysis.

Based on the description above, the researchers concluded error analysis of diphthong sound into table
below.
Table 4. Error analysis of diphthong sound

Table 4. Error analysis of diphthong sound						
Pronouncers	eı	00	aı	Total Error	Score	
I	1	2	2	5	58	
II	2	1	1	4	67	
III	2	2	2	6	50	
IV	2	1	2	5	58	
V	2	2	1	5	58	
VI	1	1	1	3	75	
VII	-	1	-	1	92	
VIII	1	1	-	2	83	
IX	2	-	2	4	67	
Х	-	1	1	2	83	
XI	2	1	1	4	67	
XII	-	-	1	1	92	
XIII	1	1	2	4	67	
XIV	1	-	1	2	83	
XV	1	2	-	3	75	
XVI	1	1	1	3	75	
XVII	-	-	-	0	100	
XVIII	-	1	1	2	83	
XIX	1	-	1	2	83	
XX	-	1	-	1	92	



XXI	1	-	1	2	83
XXII	-	1	-	1	92
XXIII	-	1	3	4	67
XXIV	1	1	1	3	75
XXV	1	2	1	4	67
XXVI	-	-	1	1	92
XXVII	1	-	1	2	83
XXVIII	-	1	-	1	92
XXIX	1	1	-	2	83
XXX	1	1	2	4	67
TOTAL	26	27	30	83	

Student III made errors 6 times and got score 50. Students I, IV and V made errors 5 times and got score 58. Students II, IX, XI, XIII, XXIII, XXV, and XXX made errors 4 times and got score 67. Student VI, XV, XVI, and XXIV made errors 3 times and got score 75. Students VIII, X, XIV, XVIII, XIX, XXI, XXVI, and XXIX made errors 2 times and got score 83. Students VII, XII, XX, XXII, XXVI, and XXVIII made errors 1 time and got score 92. Students XVII got score 100.

Discussion

The result above displayed that the pronunciation error of diphthong sounds "[e1], [o0], [a1]" made by students is reflecting the lack of knowledge about diphthong in English, as it is unknown in Bahasa Indonesia. For some students, English pronunciation seems difficult to be mastered, and it requires specific assistance from the teacher to make students know how to pronounce correctly (Fadillah, 2020). This idea is supported by Darmawan (2018) who said that appropriate media can assist students to learn correct pronunciation. On the contrary side, the behavior may result from mishearing, misinterpreting, or mispronouncing everyday speech (Erdoğan, 2005) which is interfered by mother tongue as well.

Imitating someone else's pronunciation of a word can change how that word is habitually pronounced. The tendency of students is to mimic someone in whom they have complete faith. It might be a teacher, an English singer, or an actor or actress in an English-language film. When people copy the incorrect models, they pronounce words incorrectly. Additionally, the native language's interference with the learning of a foreign language shows that learning is taking place. One tends to transfer their complete native language system when learning a foreign language (Lado, 1972).

Mishearing can contribute significantly to pronunciation problems in addition to imitation. It occurred as a result of the pupils' unfamiliarity with some native language terms, particularly certain diphthongs.

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Certain diphthongs that don't exist in the original tongue must be educated into their ears. They must be trained repeatedly until they become accustomed to them and recall their acoustic properties.

Several mispronunciations are brought on by hearing loss. When pupils hear a pronunciation clearly but find it challenging to replicate, errors in pronunciation can occur. It can be the case that the elements are absent from the native tongue. When students are not used to speaking the words as they are written in the orthographic writing style, it is referred to as "ear-training" (Ramelan, cited in Purwanto, 2019). The orthographic writing, however, is inconsistent and difficult to speak. Sometimes it can represent more than one sound, as in the case of the English letter a, which can stand for many sounds in various words.

Hence, the finding of this study is similar to a study conducted by Pratiwi and Indrayani (2021) with the title "Pronunciation Error on English Diphthongs Made by EFL Students. In accordance to this study, the first vowel is more likely than the final or second vowel to have pronunciation errors. The tongue's position during the pronunciation of diphthongs has an impact on the final sound. Consequently, it is thought that the placement of the tongue is essential for reducing errors. In accordance with this, the issue is mispronunciation induced by the speaker, according to Stefani and Roba'i (2019) because different pronunciations will diverse implications. Thus, improving the pronunciation is essential.

Conclusion

Relevant to the research, the following conclusion emerged: The students pronounced the diphthong [e1], [00], [a1] incorrectly. There were 20 speakers who mispronounced the diphthong [e1], 22 speakers mispronounced the diphthong [00], 22 speakers who mispronounced the diphthong [a1]. Inaccuracies in English diphthong pronunciation are influenced by mother tongue interference, according to the generally established fundamental principle of contrastive analysis. When making interference errors, students often implicitly correct their pronunciation of diphthongs in subsequent utterances that contained the diphthong they initially mispronounced.

The researchers propose some suggestions as follows: students should listen more to native speakers to avoid mishearing; students need to practice their pronunciation in English, especially pronouncing the English diphthongs. In addition, teachers should teach the students to pronounce English diphthong correctly, and the students should use the English diphthongs in the daily conversation. Also, for further research, this study suggests other researchers to explore more types of errors made in other kinds of sounds in English language

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