Deciphering English Vowel Digraphs: Pronunciation Challenges in the EFL Classroom

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ABSTRACT

The inconsistency in predicting pronunciation based on English alphabetic spelling is a persistent challenge in English Language Teaching (ELT). This study investigates how 42 first-semester English as a Foreign Language (EFL) students predict sounds represented by <oa> and <oo> digraphs. Using stimuli from a familiar vocabulary list, 408 instances of mispronunciation were identified from 1260 speech data, with 386 as interlingual errors and 24 as intralingual errors. The study concludes that EFL learners heavily rely on their native language (L1) knowledge in perceiving and producing speech in the target language (L2). This research highlights the challenges EFL students face in mastering English pronunciation, emphasizing the need for effective language instruction strategies.

ABSTRAK

Ketidaksesuaian dalam memprediksi pengucapan berdasarkan ejaan alfabet bahasa Inggris tetap menjadi tantangan yang menonjol dalam Pengajaran Bahasa Inggris (PBI). Studi ini menyelidiki bagaimana 42 mahasiswa semester pertama memprediksi suara yang direpresentasikan oleh digraf <oa> dan <oo>. Menggunakan stimuli dari daftar kosakata yang familiar, 408 kesalahan pengucapan diidentifikasi dari 1260 ujaran, dengan 386 dikategorikan sebagai kesalahan antarbahasa dan 24 sebagai kesalahan intrabahasa. Studi ini menyimpulkan bahwa responden dalam penelitian ini secara dominan mengandalkan pengetahuan bahasa ibu (B1) mereka dalam proses kognitif persepsi dan produksi ucapan dalam bahasa target (B2). Penelitian ini memberikan wawasan tentang tantangan yang dihadapi pembelajar PBI dalam mengatasi rumitnya pengucapan bahasa Inggris, dengan implikasi bagi strategi pengajaran bahasa yang efektif.

1. Introduction

Learners of English as a second language continually find themselves navigating through challenges that not only captivate the interest of linguistic observers but also form an integral part of their language acquisition journey. One of the central challenges that persistently surfaces pertains to the intricacies of the English spelling system (Daffern & Mackenzie, 2020). Renowned for its unique characteristics, this system is marked by its distinctiveness and its division into various predictable patterns (Ohnson & Venezky, 1976). The complexities embedded within the English spelling system create a formidable hurdle for learners, requiring them to decipher and understand the nuanced rules and patterns that govern the written language. This challenge is not merely an isolated aspect of language learning but rather a fundamental component that significantly shapes the proficiency and comprehension of English as a second language. English showcases varied consonant sounds, like the consonant sound /c/, which can be anticipated. For instance, the letter <c> represents the sound /k/ in the initial position of a word but shifts to /tʃ/ when it encounters <h> initially. Under certain conditions, the combination of <c> and <h> as a digraph can represent the sound /ʃ/, as seen in the word "champagne," originating from Latin. This inconsistency poses a significant challenge for beginners.

The phonetic element undergoes changes influenced by its phonotactic context. Adding to this complexity is the fact that the intricacies extend beyond sounds represented by a single grapheme; rather, several graphemes converge to represent a singular sound (Wolfe, 2023). This phenomenon is commonly labelled as a digraph, a linguistic concept shaped by historical and cultural factors that contribute significantly to the continual dynamism observed in English grammar and spelling. The evolution of digraphs reflects the dynamic nature of language, where historical influences intertwine with cultural shifts to create a tapestry of spelling patterns that learners must navigate and comprehend.

Students undertaking the journey of learning a foreign language, especially those with no prior exposure to English and needing more familiarity with its grammatical structure, need help grasping English texts and expressing themselves fluently. This crosslinguistic influence becomes a notable impediment, hindering students from acquiring and accurately predicting the pronunciation of the target language. The absence of prior knowledge acts as a barrier, impeding their learning process as they navigate the intricacies of a new linguistic system. Consequently, these learners may need help in attaining a natural and nuanced command of English, given the absence of a foundation upon which to build their language skills (McManus, 2021).

In addition to linguistic variations, the proficiency of foreign language learners in mastering pronunciation systems is susceptible to the impact of dialectal differences (Farrah & Halahlah, 2020). Expanding on this, within the realm of English, learners may face challenges when attempting to articulate diphthongs, with these intricate sound combinations potentially being represented by digraphs (Saadah & Ardi, 2020). The intricacies of mastering pronunciation extend beyond mere linguistic differences and involve navigating through

dialectal nuances and the complexities associated with specific sound combinations, such as diphthongs, further exemplifying the multifaceted nature of language acquisition.

A crucial proficiency in English involves the skill to decode words with intricate spellings, serving as a fundamental asset for producing clear and precise speech (Altmiller et al., 2023). The intricacies associated with decoding such words significantly contribute to learners' effectiveness in expressing themselves proficiently in the English language. Furthermore, primary-level learners often need more phoneme awareness, a crucial skill introduced through effective phonics instruction. Phoneme awareness, viewed as a learner's ability to discern the minor units of sound distinguishing meaning, is integral in the early stages of language acquisition.

Teaching English spelling poses a considerable challenge, as learners manipulate their speech organs, producing accurate and meaningful sounds. Lacking phonetic awareness presents a significant hurdle for English language learners in obtaining proficiency in the target language(Genelza et al., 2022). This critical aspect of learning is acquired unconsciously, demanding a pedagogical foundation, appropriate exercises, and suitable linguistic contexts (Genelza et al., 2022). The absence of phonetic awareness not only impedes the understanding of pronunciation subtleties but also emphasizes the need for a structured teaching approach encompassing pedagogical principles, practical exercises, and linguistic contexts tailored to the learners' requirements. Genelza (2022) emphasizes the necessity of a comprehensive pedagogical framework to cultivate phonetic awareness, facilitating a more adept and nuanced acquisition of the target language, particularly in the case of English.

In addition to mastering pronunciation, students must work hard to understand the intricate writing system and alphabet associated with the English language. This involves recognizing the shapes and forms of letters and comprehending their corresponding sounds. The multifaceted nature of teaching spelling in English encompasses the need for learners to manipulate their vocal apparatus effectively, navigate the intricacies of the writing system, and comprehend the theoretical relationship between phonemes and graphemes in Englis (Caravolas, 2004; Caravolas et al., 2001). This comprehensive approach is essential for fostering a deep understanding of the language's foundational elements and promoting effective language production.

Furthermore, numerous prior investigations have primarily concentrated on the analysis of consonant digraphs. Nevertheless, in this contemporary study, the researcher aims to delve into how novice learners of English as a foreign language anticipate the pronunciation of two specific forms of vowel digraphs—<oo> and <oa>. To address this inquiry, the researcher employs an exploratory analytical approach Wang et al. (2023), to scrutinize the predictive behaviors exhibited by learners when encountering these particular digraphs.

1.1. Vowel Digraphs

In phonetics, a digraph denotes the amalgamation of two orthographic symbols employed to depict a single segment or phonetic unit (Jamolovna, 2023). A solitary symbol that signifies a lone sound is termed a grapheme (Bolger et al., 2009). Each grapheme should exclusively represent a solitary sound in an ideal scenario within an alphabetic orthographic system. To

illustrate, consider the Indonesian word "sarung," phonetically transcribed as /saruŋ/, where each letter corresponds to an individual sound. Specifically, the letter combination <ng> represents the singular sound /ŋ/, setting it apart from other nasal sounds such as /n/ and /m/. The incorporation of digraphs plays a pivotal role as a distinctive feature, facilitating the differentiation between various sounds that are being represented.

The emergence of digraphs is particularly notable in languages characterized by intricate phonetic structures, wherein specific phonemes defy adequate representation using the conventional 26 letters of the alphabet. It is crucial to note that digraphs extend beyond consonants, encompassing vowel digraphs. The latter, with their diverse and intricate forms of representation, present an intriguing subject for scholarly exploration. Therefore, this research places a specific emphasis on examining vowel digraphs in speech, delving into the multifaceted nature of their representations. Additionally, vowel digraphs are sometimes misunderstood as vowel clusters. Orthographically, a vowel cluster comprises two symbols of vowel letters that appear as if together, yet each individual vowel letter retains its distinct phoneme. Take, for instance, the word "oil," where <oi> appears like a digraph, but each vowel letter maintains its separate phoneme (/o/ and /i/). Hence, the primary distinction between vowel digraphs and vowel clusters lies in whether the vowel letters collaborate to produce a unified sound (vowel digraphs) or whether each vowel letter within the cluster preserves its individual sound (vowel clusters). Additionally, it is crucial to acknowledge that vowel digraphs may represent monophthong and diphthong phonemes based on their phonotactic context. Therefore, a comprehensive understanding of the phonotactic environment is pivotal in determining how the vowel digraph is articulated, whether as a singular sound or a blend of two phonemes.

Vowel digraphs that take center stage in this study are the <oa> and <oo> vowel digraphs. The researcher posits that elementary-level learners more commonly encounter these two vowel digraphs in reading materials and vocabulary enrichment. The <oa> vowel digraph tends to represent the diphthong /oʊ/ predominantly at the beginning of syllables, except in the final position. This observation is supported by the data presented in the preceding table. Notably, the <oa> digraph takes on a different phonetic representation when preceding the sound /r/, as evidenced by words like "abroad."

In contrast to the earlier-discussed vowel digraph, the <oo> vowel digraph exhibits greater consistency. The <oo> vowel digraph consistently represents the sound /u/ when it appears in a stressed position. However, when <oo> occurs at the beginning of a word followed by a stop, velar, or liquid sound, it takes on the sound /ʊ/. Interestingly, when the word concludes with the sound /r/ (as seen in words like door, floor, and poor), the <oo> vowel digraph adopts the sound /ɔ/. This consistent phonetic behavior of the <oo> digraph offers a clear pattern for learners to recognize, contributing to a more systematic understanding of pronunciation rules associated with this particular vowel combination.

In addition, the researcher is interested in delving into how novice learners of English as a foreign language approach the prediction of the pronunciation of vowel digraphs, specifically those represented by the letter combinations <oa> and <oo>. Through a detailed examination of the predictive patterns associated with these digraphs, the researcher aims to discern whether the responses from participants accurately reflect the intended pronunciation. The

researcher also posits that learners might demonstrate interference or negative transfer due to the substantial disparities in the phonetic and orthographic systems between English and Indonesian. Drawing insights from the gathered data, the researcher seeks to formulate comprehensive conclusions regarding how beginners in language acquisition predict the pronunciation of these two particular digraphs.

2. Method

The methodology employed in this research is characterized by descriptive analysis, wherein data is garnered from the spoken expressions of the participating individuals. This collected data is subsequently subjected to exploratory analysis, allowing for an in-depth exploration of the distinctive features exhibited in the predicted forms of vowel digraphs generated by the participants (Wang et al., 2023).

The participants involved in this study comprise a cohort of 42 students enrolled in their first semester, actively engaged in an English course as part of their general curriculum. Hailing from diverse campuses, these students have been carefully selected based on their confirmed proficiency in articulation and their non-native English language background.

In the procedural framework, the researcher administers a stimulus, presenting a curated list of words containing the vowel digraphs <oo> and <oa>. The collected stimuli are words taken from a list of 10,000 common English words by Kucera et al. (1967). The researcher specifically chose 30 words that contain the vowel combinations 'oa' and 'oo' to investigate how individuals learning English as a foreign language anticipate pronouncing these words. The assumption guiding this selection is that both of these vowel digraphs are likely to be encountered with relative ease by novice learners, especially considering that words incorporating these digraphs are often monosyllabic. Subsequently, participants are tasked with pronouncing the words from the provided stimulus. The responses elicited from the participants are then transcribed by the researcher to dissect the phonetic elements produced in anticipation of the pronunciation of these vowel digraphs. The ensuing results will undergo a systematic classification and categorization process.

3. Results and Discussion

In this section, the researcher discusses how the predictions of the vowel digraphs <oo> and <oa> serve as parameters. Subsequently, the researcher delves into the pronunciation outcomes of the respondents that have been gathered through the provided stimuli.

Table 1. Vowel Digraph <oa> Prediction

<oa>	Phonetic transcription	/o/	/ɔ/	/oʊ/	/oa/	Correct	Incorrect
abroad	/əˈbrɔːd/	31	11	-	-	11	31
approach	/əˈproʊtʃ/	19	-	23	-	23	19
board	/bɔːrd/	24	18	-	-	18	24
boat	/boʊt/	20	-	22	-	22	20
broad	/brɔːd/	29	10	3	-	10	32
coach	/koʊtʃ/	15	2	25	-	25	17
coal	/koʊl/	10	2	30	-	30	12

<oa>	Phonetic transcription	/o/	/ɔ/	/oʊ/	/oa/	Correct	Incorrect
coast	/koʊst/	15	2	25	-	25	17
coat	/koʊt/	17	-	25	-	25	17
float	/floʊt/	15	-	20	7	20	22
goal	/goʊl/	35	-	7	-	7	35
load	/loʊd/	15	-	17	10	17	25
loan	/loʊn/	15	-	17	10	17	25
road	/roʊd/	18	-	24	-	24	18
throat	/θroʊt/	14	-	16	12	16	16
Total		292	45	254	39	290	340

The findings presented in Table 1 elucidate the prognostications of the <oa> digraph, derived from a meticulous analysis of 630 data points procured through 15 stimuli administered to 42 respondents. Within the purview of this investigation, the researcher identified 340 inaccuracies juxtaposed against 290 instances of precision in the articulation of utterances featuring the aforementioned digraph.

Moreover, a preponderance of respondents demonstrated a proclivity towards envisaging the phonetic manifestation encapsulated by the vowel digraph <oa> as /o/, subsequently succeeded by the diphthongal articulation denoted by /oʊ/.

Table 2. Vowel Digraph <oo> Prediction

<oa>	Phonetic transcription	/u/	/ʌ/	/o/	/oʊ/	/ɔ/	/ʊ/	Correct	Incorrect
afternoon	/ˌæf.tɚˈnuːn/	42	-	-	-	-	-	42	-
bathroom	/ˈbæθ.rʊm/	42	-	-	-	-	-	42	-
blood	/blʌd/	27	15	-	-	-	-	15	27
book	/bʊk/	42	-	-	-	-	-	42	20
boot	/but/	42	-	-	-	-	-	42	32
choose	/tʃuːz/	42	-	-	-	-	-	42	17
cooperation	/koʊˌɑːpəˈreɪ.ʃən/	-	-	40	2	-	-	2	40
door	/dɔːr/	-	-	26	-	16	-	16	26
floor	/flɔːr/	-	-	26	-	16	-	16	26
food	/fuːd/	42	-	-	-	-	-	42	-
foot	/fʊt/	-	-	-	-	-	42	42	-
pool	/puːl/	42	-	-	-	-	-	42	-
poor	/ pʊr/	-	-	-	-	42	-	42	-
proof	/pruːf/	40	-	2	-	-	-	40	2
wood	/wʊd/	3	-	-	-	-	39	39	3
Total		364	15	94	2	74	81	506	193

Diverging from the observations in Table 1, Table 2 illustrates respondents' adeptness in predicting the <oo> digraph. This proficiency is substantiated by 506 correct responses juxtaposed with 193 erroneous articulations. Additionally, the range of predictions for the vowel digraph <oo> is marginally more diverse than that of the <oa> digraph, encompassing six distinct predictive models.

Respondents exhibit a proclivity for forecasting the <oo> digraph as representing /u/. This tendency is grounded in the inherent inclination of the <oo> digraph to predominantly represent /u/ in monosyllabic words.

Table 2. Error Clasification

Data	Error		Total
	Interlingual	Intralingual	
1260	386	24	408

Table 3 is a detailed classification of linguistic errors occurring within a dataset. This classification is based on two main categories: "Interlingual" and "Intralingual." The observed data encompasses a total of 1260 units of analysis, where errors were identified and categorized.

In this context, "Interlingual" errors refer to deviations or discrepancies arising from differences between two languages or linguistic systems. There were 386 Interlingual errors found in this dataset. Conversely, the "Intralingual" category includes errors that occur within the boundaries of a single language or linguistic system. In this dataset, 24 Integral errors were recorded.

Overall, 408 linguistic errors were documented in this table, covering the total errors from both the Interlingual and Intralingual categories. This table provides a detailed view of the distribution and relative proportions of different types of linguistic errors, allowing researchers or readers to gain deeper insights into the nature and distribution of errors within the analysed dataset. This data can serve as a basis for further studies in comparative linguistics and the analysis of linguistic errors within a single language system or between two different language systems.

3.1. Crosslinguistic Transfer and Digraph Complexity

Based on the data collected, it is evident that learners tend to commit errors in predicting the vowel sound associated with the <oa> vowel digraph, which is intended to represent the sound /o/. This dataset's recorded number of errors amounts to 340, with the preponderance attributed to interlanguage interference. This phenomenon can be elucidated by the disparities in vowel sound systems between Indonesian and English, with the former lacking the /ɔ/ sound.

Subsequently, respondents endeavoured to identify a phonetic equivalent in Indonesian that approximates the /ɔ/ sound. In juxtaposition, the <oo> vowel digraph proved relatively straightforward for respondents to predict; nevertheless, there were 193 errors out of 630 utterances. These errors were similarly characterized by interlanguage interference. However, intralingual interference was observed when respondents incorrectly predicted the representation of the <oo> digraph in the word <blood>, deeming it to produce the sound /u/. This occurrence can be construed as a manifestation of overgeneralization, wherein respondents presume that the predicted form for the <oo> digraph tends to correspond to the sound /u/.

Beginner learners manifested difficulties in discriminating and enunciating the phonetic system of English as a foreign language. This observation aligns with Al-Jarf (2019), which indicates that many English as a Foreign Language (EFL) learners encounter challenges in comprehending vowel digraphs, silent vowels, and consonants due to distinctions from their native language systems. The intricacies of English spelling are undoubtedly influenced by vowel digraphs and specific intricate orthographic clusters (Davis & Bryant, 2006; Kahn-Horwitz et al., 2011; Spencer, 2007).

Van Zanten & Van Heuven (1983) observed that the Indonesian language exhibits 6 monophthongs, generally not categorized based on voicing distinctions. In comparison, as outlined by Van Zanten & Van Heuven (1983), English features a more extensive inventory of 12 monophthongs. This increased number contributes significantly to the intricacies of the English spelling system. The complexity inherent in English pronunciation rules and grammar poses challenges for individuals learning English as a second language (Putra, 2023). Learners may encounter difficulties adhering to these phonetic and grammatical intricacies when attempting to articulate speech. Consequently, individuals naturally draw upon their knowledge of their native language's system to navigate and fill these linguistic gaps.

Furthermore, it is worth noting that the complexity of the English spelling system extends beyond the abundance of monophthongs. English presents an intricate set of spelling rules and conventions where the mere representation of sounds by alphabetic symbols may not suffice. The challenge lies in the fact that English words often deviate from phonetic predictability, making it challenging for learners to rely solely on the alphabet to depict the pronunciation of words accurately. This added layer of complexity can further impede second language speakers as they grapple with the numerous monophthongs and the nuances of English spelling that go beyond straightforward letter-sound associations.

In the findings of this research, two distinct forms of linguistic interference were observed: interlingual interference and intralingual interference. The prevalence of interlingual interference outweighed that of intralingual interference, primarily attributed to disparities in the phonological systems between English and Indonesian, where the latter serves as the participants' first language (L1). Respondents tended to articulate English words using the phonological rules ingrained in their native Indonesian language.

Moreover, the English vowel sound system, encompassing over six vowel sounds (/i:/,/ɪ/,/e/,/æ/,/ɛ/,/a/,/ɑ/,/ɔ/,/ʊ/,/u:/,/ə/, and /ʌ/), posed a challenge for accurate representation using a mere five alphabet symbols. As a remedy, a combination of vowel graphemes was deemed essential to capture each sound's nuances distinctly.

The study also brought to light intralingual errors, notably instances of overgeneralization. For instance, the <oo> in the term "blood" was universally predicted by most respondents to denote the sound /u/, contrary to the actual representation of /ʌ/. This inconsistency was identified as a constraining factor, impeding the ability of novice English learners to produce precise articulations without considering the inherent phonetic distinctions. Furthermore, the limited proficiency in the English language and the inadequate exposure to practice opportunities emerged as contributing factors to the persistent pronunciation errors among the participants.

3.2. Leveraging Digital Tools, Innovative Methods, and Curriculum Design

In the contemporary landscape, many teaching methods and instructional models exist, reflecting the diverse approaches to education. However, challenges persist in the realm of second language acquisition, particularly about issues surrounding pronunciation and phonemic awareness. Despite these challenges being inherent in acquiring a foreign language, they can be mitigated with dedicated effort and effective practice. In this context, the integration

of digital technology emerges as a valuable tool for educators and learners, offering support for the holistic development of language proficiency, explicitly focusing on verb skills and pronunciation.

Fouz-González's research findings (2020) underline the significance of consistent practice through Pronunciation Apps, recommending sessions of 20 minutes per day for meaningful advancements in pronunciation development. Furthermore, insights from Cerezo et al. (2019) stress the transformative impact of stimuli delivered through holographic mobile-based applications, not only providing a novel learning experience but also exerting a substantial positive influence on student motivation and performance in the realm of English language acquisition. The enthusiasm for learning is a driving force that significantly contributes to the attainment of successful learning outcomes, serving as a powerful motivator for students to actively engage in independent efforts (Bakar, 2014). In the contemporary educational landscape, relying solely on teachers as the exclusive source of language exposure is deemed insufficient, particularly when considering the myriad challenges faced by students in the rapidly evolving modern world. In response to this, the utilization of digital learning platforms emerges as a viable and engaging option to enhance language proficiency. These platforms offer dynamic and interactive tools that not only capture the interest of learners but also cater to diverse learning styles, making the language acquisition process more enjoyable and effective.

It is imperative to underscore the critical role of motivation in the learning journey. The level of enthusiasm a student possesses can significantly impact their willingness to delve into the complexities of mastering a foreign language system, one that is inherently different from their native tongue. Thus, cultivating and sustaining motivation becomes a key aspect of effective language education. In presenting motivation, it is crucial to frame it as more than a mere prerequisite for academic achievement. Rather, motivation should be portrayed as a source of practical benefits in everyday life. By doing so, students can perceive the relevance of language learning beyond the confines of the classroom, recognizing its applicability and utility in real-world scenarios (Putra & Suparni, 2023). Therefore, a comprehensive approach to education involves acknowledging the multifaceted nature of motivation, integrating digital platforms to cater to evolving learning needs, and highlighting the practical advantages of language acquisition for a holistic and meaningful educational experience.

Beyond the realm of innovative learning methodologies, the challenges encountered in language acquisition are intricately linked to the efficacy of the curriculum. The curriculum should yield meaningful implications for achieving the objectives set for foreign language learning. Consequently, policymakers at the faculty level are responsible for directing their attention toward facilitating the diverse needs of students, with a specific emphasis on providing effective stimuli for enhancing speaking skills, including the nuanced aspect of pronunciation (Wahyuningsih & Afandi, 2020). This strategic focus aims to ensure that second language learning becomes more effective and adaptive to the evolving demands of our dynamic era.

4. Conclusion

After observing the speech obtained through stimuli from 42 early-semester EFL students, researchers found that most respondents predicted the vowel digraph <oa> as the phoneme /o/ and the vowel digraph <oo> as /u/. However, from their predictions, there were 408 pronunciation errors, consisting of both interlingual and intralingual interference (overgeneralization). This indicates that the first language (L1) still has a significant influence on the process of perception and production of speech in students when decoding vowel digraphs.

Furthermore, this study has its limitations, and the researchers acknowledge that taking a larger population and sample distribution may provide a more comprehensive overview of the current research. The researchers have not covered all vowel digraphs and consonant digraphs present in the English language. Therefore, it is strongly recommended for researchers with similar interests to address the research gaps that have not been touched upon in the current study. Finally, the researchers recognize that the study is far from perfect, but its findings contribute to the understanding of how L1 influences the process of perception and production of speech in the context of decoding vowel digraphs.

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