



Substitution Errors in Jokowi's English: A Phonological Analysis

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Abstract

This study examines substitution errors in the English pronunciation of President Joko Widodo, focusing on his ASEAN–Australia Special Summit 2018 speech. The aim is to describe systematic substitution patterns and explain how they are influenced by his first languages (L1), Javanese and Indonesian. Using a qualitative descriptive method, the data were drawn from a transcript of approximately 696 words, with 28 instances of substitution identified. The analysis involved repeated video review, transcription with the International Phonetic Alphabet (IPA), and comparison with British English forms from the Cambridge Dictionary. Roach's (1991) segmental phonology and Brown's (2008) transfer theory provided the analytical framework. Findings show recurring substitutions such as /v/ → /f/ or /p/, /θ/ → /t/, diphthong simplification, vowel shifts toward the Indonesian five-vowel system, and hyper-articulation of weak syllables. These deviations were systematic rather than incidental, reflecting persistent L1 influence. The results highlight the pedagogical importance of prioritizing high-impact features like fricatives, diphthongs, and vowel reduction in pronunciation training, particularly for speakers in international contexts where intelligibility and credibility are crucial. However, the study is limited to one speech by a single speaker, so broader generalizations require further research.

Keywords: *Phonology; Substitution; Jokowi; Speech; Linguistics*

Introduction

Pronunciation is a key component of oral language proficiency, especially in second language acquisition. For Indonesian learners of English, phonological interference from the native language often leads to systematic errors, such as sound substitution. Studies have shown that this is commonly caused by the limited vowel inventory in Indonesian, which leads learners to replace unfamiliar English sounds with closer native approximations (Desy et al., 2024). Beyond

classroom contexts, mispronunciation has practical consequences: in academic, professional, and especially diplomatic communication, unclear articulation can reduce intelligibility, affect credibility, and potentially lead to misunderstandings in high-stakes exchanges. This highlights the urgency of examining substitution as more than a linguistic phenomenon but also as an issue of communicative effectiveness, with practical implications for English teaching and high-stakes communication.

Prior research has consistently identified substitution as a major error type. For example, Fartizan et al. (2024) found that postgraduate students frequently substituted unfamiliar phonemes with native approximations during proposal seminars, while Khoirunnisa et al. (2022) reported that substitution accounted for 83% of errors among university students, especially with /θ/, /ð/, /ʒ/, /æ/, /ɒ/, and /əʊ/. These findings point to strong interlingual interference from Indonesian phonology. However, most studies rely on classroom or academic data, raising questions about whether similar patterns appear in natural or high-pressure speech. (Further details of these studies are discussed in the Literature Review section.)

Additional insights come from Luthfianda et al. (2024), who examined fricative errors such as /ʒ/ → /s, z, ʃ/, and Rahman (2024), who showed that English loanwords are systematically adapted to Indonesian phonological rules (e.g., “theory” → “teori”). Together, these studies confirm that substitution is not random but a patterned result of L1 transfer. Yet their scope is limited to student participants and elicited tasks, leaving a gap in our understanding of substitution in authentic, high-profile contexts.

Unlike prior research, this study focuses on a high-profile political figure, President Joko Widodo, analyzing his English pronunciation in a diplomatic speech at the ASEAN–Australia Special Summit (2018). This case provides a unique opportunity to observe how substitution patterns manifest in high-stakes, naturally produced speech by a national leader. Jokowi’s Javanese-Indonesian background is relevant because Javanese lacks certain English phonological contrasts (Fauziah, 2019), which may influence substitution tendencies. The central research question is: What types of substitution errors occur in President Joko Widodo’s English pronunciation, and how do they reflect the influence of his first language background? The study contributes empirically by mapping substitution types in public speech, theoretically by extending L1 transfer frameworks (Roach, 1991; Brown, 2008) beyond classroom data, and practically by identifying priorities for pronunciation training in elite communicative contexts.

Method

This study employed a descriptive qualitative research design to investigate phonological errors, with a specific focus on substitution in the English speech of Indonesian President Joko Widodo. A qualitative approach was chosen because it allows for detailed analysis of language features in natural contexts, rather than relying on controlled testing environments. The study limited its scope to segmental features, namely consonants and vowels, while excluding suprasegmental aspects such as stress and intonation.

The subject of this research was a public speech delivered by President Joko Widodo at the ASEAN–Australia Special Summit 2018, which was broadcast on March 17, 2018, through the official YouTube channel of the Kementerian Sekretariat Negara RI. This speech was selected because it represents a formal and high-stakes international context in which English was used throughout, making it a suitable source for examining authentic pronunciation patterns of a high-profile Indonesian speaker. The speech lasted approximately 19:18 minutes and contained 696 words, which served as the corpus for analysis.

Data were collected by repeatedly reviewing the video (three full reviews in total) and noting instances of sound substitution. The utterances containing substitution errors were transcribed using the International Phonetic Alphabet (IPA) to ensure accuracy in documenting deviations from standard pronunciation. The standard reference for comparison was the British English transcription provided in the Cambridge Dictionary. To enhance reliability, a subset of the substitution tokens was independently transcribed by a second reviewer; percent agreement between transcribers was 90%. Transcriptions and timestamps were managed using the YouTube playback platform for repeated listening and Microsoft Word for documentation, which allowed for careful review and annotation. Observation notes were also taken to capture relevant patterns in articulation. In total, 28 substitution instances were identified for analysis.

The analysis of the data involved several stages. First, each mispronounced word was compared with its standard form to identify cases of substitution. The deviations were then categorized based on Roach's (1991) segmental phonological framework, which classifies sounds by place and manner of articulation as well as voicing. To explain the causes of these substitutions, Brown's (2008) theory of language transfer was applied, particularly in relation to the influence of Indonesian and Javanese phonological systems. In addition, the classification of learner errors suggested by Zhu (2019) was used to distinguish between interlingual and intralingual influences, ensuring that the analytical framework captured both structural and transfer-based explanations.

To minimize researcher bias, transcription decisions were cross-checked with the reference dictionary and verified collaboratively with the second reviewer. The results were presented both in tables, which summarized the mispronounced words, their IPA forms, and substitution types, and in descriptive explanations that

explored the implications of each error for intelligibility and communication.

Results

This section outlines the substitution errors found in President Joko Widodo's ASEAN–Australia Special Summit 2018 speech, an internationally broadcast address in English chosen for its high visibility and suitability for observing authentic phonological interference in a formal setting.

Each word was carefully transcribed using the International Phonetic Alphabet (IPA) and compared with its standard British English pronunciation, based on transcription conventions from the Cambridge Dictionary. Words exhibiting clear deviations, specifically substitution of one sound with another, were noted and analyzed. The analysis draws on Roach's (1991) segmental phonology, which outlines how vowel and consonant shifts can be categorized based on articulatory features such as voicing, place, and manner of articulation. Additionally, Brown's (2008) theory of language transfer was applied to explain the underlying causes of these substitutions, particularly how the structure of the speaker's first language affects the production of second-language sounds.

In the case of President Joko Widodo, who is a native Javanese speaker, the influence of Javanese phonology is also worth noting. Javanese learners of English have been shown to struggle with producing English phonemes such as /v/, /θ/, /ð/, /æ/, /eɪ/, and diphthongs, often substituting them with native Javanese equivalents (Wardani et al., 2019) Research on Banyumasan Javanese speakers further confirms that English closing diphthongs are frequently simplified into monophthongs due to phonological differences (Anindita & Munandar, 2025). These phonological traits contribute to consistent substitution patterns observed in his speech, particularly the replacement of voiced fricatives with voiceless counterparts and diphthong simplification.

Table 1. Substitution Errors in Jokowi's English Pronunciation

No	Word	Dictionary Form→Jokowi's Form	Substitution/Category
1	New Zealand	/ˌnjuː ˈziː.lənd/→ [ˌnjuː ˈzeː.lənd]	/iː/ → /eː/ (Vowel)
2	ASEAN (3x)	/ˈæsi.ən/ → [əˈsiː.ən]	/æ/ → /iː/ (Vowel)
3	Media (2x)	/ˈmiː.di.ə/ → [ˈmə.di.a]	/iː/ → /ə/, /ə/ → /a/ (Vowel)

4	Officially	/ə'fɪʃ.əl.i/ → [ə'fɪʃ.əl.e:]	/ə/ → /o/, /i/ → /e:/ (Vowel)
5	Evolve	/ɪ'vɒlv/ → [ɪ'fɒld]	/v/ → /f/ (Fricative)
6	Sector	/'sek.tə/ → ['sek.tɔr]	/e/ → /o/ (Vowel)
7	About	/ə'baut/ → [ə'bot]	/aʊ/ → /o/ (Diphthong)
8	Thank you	/'θæŋk.ju:/ → ['tæŋk.ju]	/θ/ → /t/ (Consonant)
9	Invention	/ɪn'ven.ʃən/ → [ɪn'fɛn.ʃən]	/v/ → /f/ (Fricative)
10	Consumption	/kən'sʌmp.ʃən/ → [kɒn'sʌm.ʃən]	/ə/ → /o/ (Vowel)
11	Experience	/ɪk'spiə.ri.əns/ → [ɪk'spə.ri.əns]	/ɪə/ → /ə/ (Diphthong)
12	Five	/faɪv/ → [faɪp]	/v/ → /p/ (Fricative)
13	Only (2x)	/'əʊn.li/ → ['on.le]	/əʊ/ → /o/, /i/ → /e/ (Diphthong + Vowel)
14	Have	/hæv/ → [hep]	/æ/ → /e/ (Vowel)
15	Very (3x)	/'ve.ri/ → ['fer.i]	/v/ → /f/ (Fricative)
16	Financial (2x)	/faɪ'næn.ʃəl/ → [fi'nan.ʃəl]	/aɪ/ → /i/ (Diphthong)
17	relation	/rɪ'leɪ.ʃən/ → [re'li.ʃən]	/ɪ/ → /e/ (Vowel)
18	companies	/'kʌm.pə.nɪz/ → ['kɒm.pə.nɪs]	/ʌ/ → /o/ (Vowel)
19	dollar	/'dɒl.ər/ → ['dɒl.ər]	/ɒ/ → /o/, /ə/ → /a/ (Vowel)
20	fundamental (2x)	/ˌfʌn.də'men.təl/ → [ˌfun.də'men.təl]	/ʌ/ → /u/, /ə/ → /a/ (Vowel)

21	Increasing ly (2x)	/ɪnˈkriː. sɪŋ.li/ → [ɪnˈkriː.sɪŋ.le]	/li/ → /le/ (Weak form)
22	especially	/ɪˈspeʃ.əl.i/ → [ɪˈspeʃ.əl.e]	/li/ → /le/ (Weak form)
23	continuin g	/kənˈtɪn.ju.ɪŋ/ → [kənˈtɪn.juː.ɪŋ]	/ə/ → /o/ (Vowel)
24	luxury	/ˈlʌk.fə.ri/ → [ˈluk.suri]	/ʌ/ → /u/ (Vowel)
25	upgraded (2x)	/ʌpˈɡreɪ.dɪd/ → [ʌpˈɡri.dɪd]	/eɪ/ → /i/ (Diphthong)
26	sea port	/ˈsiː pɔːt/ → [ˈsiː pot]	/ɔː/ → /o/ (Vowel)
27	e- commerce	/iːˈkɒm.ɜːs/ → [iːˈkom.ərs]	/ɒ/ → /o/ (Vowel)
28	investmen t	/ɪnˈvest.mənt/ → [ɪnˈfes.mən]	/v/ → /f/ (Fricative)

Table 2. Frequency of Substitution Patterns

Category	Count	Percentage
Vowel substitutions (centralization/shift)	12	42.9%
Fricative substitutions (/v/ → /f/, /v/ → /p/)	5	17.9%
Diphthong simplifications	5	17.9%
Weak form changes (/li/ → /le/)	2	7.1%
Other consonant substitutions (/θ/ → /t/)	1	3.6%
Multiple simultaneous substitutions (more than one change in the same word)	3	10.7%

As shown in Table 2, vowel substitutions were the most frequent error type (43%), followed by fricative substitutions (18%) and diphthong simplifications (18%). Weak form changes accounted for 7% of errors, while other consonant substitutions (e.g., /θ/→/t/) were rare at 4%. Multiple substitutions occurred in 11% of the tokens. Figure 1 illustrates these frequencies visually, highlighting the dominance of vowel-related substitutions in Jokowi’s speech.

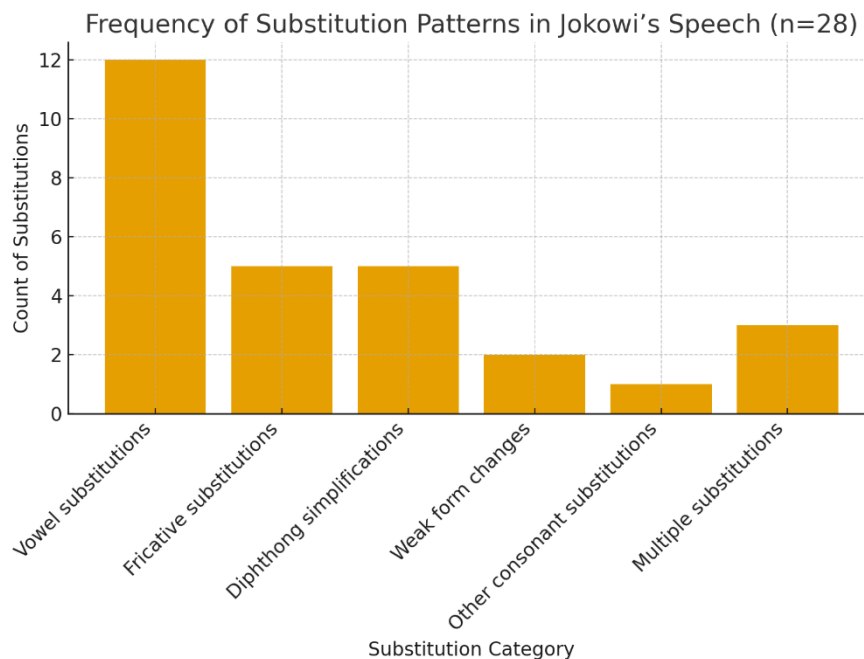


Figure 1. Frequency of substitution patterns in President Joko Widodo's speech ($n = 28$).

Source: author's analysis.

These multiple substitutions accounted for about 11% of the total data (3 of 28 tokens), showing that compound errors where vowel and weak-syllable adaptations co-occur are not rare in natural speech contexts.

Discussion

After analyzing the pronunciation data, several substitution patterns emerged. These patterns were systematically categorized into consonant substitutions, vowel shifts, diphthong simplification, and alterations in weak syllables. The classification reveals how specific English sounds were replaced and provides insight into the linguistic factors influencing these changes.

Substitution of /v/ → /f/ or /p/

Words: evolve, Very (3x), invention, investment, five

The voiced labiodental fricative /v/ is consistently replaced by /f/ in several words, such as evolve → [ɪ'fɒld], very → ['fer.i], invention → [ɪn'fɛn.ʃən], and investment → [ɪn'fes.mən]. In five → [faɪp], the /v/ shifts to /p/, a bilabial plosive, indicating a change in both voicing and manner of articulation. Such substitutions follow Roach's (1991) description of place-preserving yet voicing-reducing changes. Brown (2008) explains this as a result of negative transfer, where unfamiliar L2 sounds are mapped onto similar L1 categories. Dona Retsi et al. (2024) also confirmed that Indonesian EFL learners frequently replace /v/ with /f/ because of the absence of this voiced fricative in their native phonology. This

particular substitution can have a strong impact on intelligibility, since minimal pairs like “fan” and “van” are distinguished only by voicing.

Substitution of /θ/ → /t/

Word: thank you

The dental fricative /θ/ in thank is replaced by the alveolar plosive /t/ → [ˈtæŋk.ju]. This substitution is typical for Indonesian learners because /θ/ is not present in their L1 sound system, making /t/ a natural replacement. Roach (1991) highlights that /θ/ demands an unfamiliar articulatory gesture for Indonesian speakers, while Brown (2008) attributes this phenomenon to negative transfer where speakers default to familiar alveolar plosives from their L1. While this substitution rarely prevents understanding, it can index the speaker's L1 background strongly, reducing perceived “nativeness.”

Substitution of /ɪ/ → /e/

Word: relation

In relation → [reˈlɪ.ʃən], the close front lax vowel /ɪ/ is substituted with /e/, showing adaptation to the Indonesian vowel inventory, which favors the stable mid-vowel /e/. Roach (1991) explains that non-existent vowels in L1 tend to be replaced with the closest familiar vowel. Brown (2008) supports this, stating that negative transfer leads learners to approximate unfamiliar L2 vowels with similar L1 sounds. Although vowel substitutions usually remain intelligible from context, they contribute to a noticeable foreign accent.

Diphthong to Monophthong Substitution

Words: about, only (2x), Financial (2x), upgraded (2x), five

Jokowi frequently simplifies diphthongs into monophthongs. Examples include /aʊ/ → /o/ in about → [əˈbɒt], /əʊ/ → /o/ in only → [ˈɒn.le], /aɪ/ → /i/ in financial → [fiˈnæn.ʃəl] and five → [faɪp], and /eɪ/ → /i/ in upgraded → [ʌpˈɡriːdɪd]. Only (2x) also shows a second substitution, where the final /i/ is replaced by /e/. These reductions align with Roach's (1991) observation that diphthongs, which require gliding articulation, are often replaced with simpler vowels by speakers of syllable-timed languages. Brown (2008) suggests that L2 learners replace them with simpler L1 vowels because of articulatory ease. Diphthong reduction has high communicative impact, since English distinguishes several minimal pairs through diphthongs (e.g., “late” vs “let”), making such errors potentially problematic.

Vowels to /o/ or /u/

Words: companies, dollar, sector, Fundamental (2x), luxury, consumption, e-commerce

Several central vowels are replaced with /o/ or /u/: /ʌ/ → /o/ (companies → [kom.pə.nis]), /ʌ/ → /u/ (luxury → ['luk.sur.i]), /ɒ/ → /o/ (dollar → ['dɒl.ar]), and /e/ → /o/ (sector → ['sek.tɔr]). Dollar also shows a second substitution, with /ə/ → /a/. Fundamental (2x) combines /ʌ/ → /u/ with /ə/ → /a/, demonstrating multiple vowel adaptations. Roach (1991) emphasizes that central and low vowels are among the most frequently substituted in ESL learners due to their absence in many L1 vowel systems. Brown (2008) further explains this through the “perceived similarity” model, where learners approximate L2 sounds using the nearest L1 phonemes. These substitutions are often less damaging for intelligibility than consonant errors, but they accumulate to produce a strong accent that may affect credibility in formal settings.

Substitution in Final Syllables and Weak Forms (/li/ → /le/ or /e:/)

Words: officially, especially, increasingly

In these words, the final /li/ changes to /le/ (especially → [ɪ'speʃ.əl.e], increasingly → [ɪn'kri:.sɪŋ.le]) or to /e:/ (officially → [ə'fɪʃ.əl.e:]). This indicates a tendency to avoid vowel reduction in weak syllables, instead pronouncing them fully. Roach (1991) relates this to the syllable-timed rhythm of Indonesian, while Brown (2008) notes that L1 prosodic features can override expected L2 patterns. Khoirunnisa et al. (2022) also described similar cases where learners pronounced reduced or silent elements due to orthographic influence and L1 syllabic timing. This hyperarticulation may increase clarity but simultaneously makes the speech sound unnatural compared to native English rhythm.

Miscellaneous Substitutions: /ɪə/ → /e/, /ə/ → /o/

Words: Media (2x), officially, Only (2x), dollar, Fundamental (2x)

Some words exhibit two simultaneous substitutions. In media, the long high front vowel /i:/ was realized as [e], producing ['me.di.a]. This reflects a common adaptation among Indonesian speakers, who often replace tense vowels absent in their L1 with the closest mid vowel. Unlike schwa reduction, which is rare in Indonesian phonology, this pattern demonstrates systematic vowel substitution rather than random variation. Officially involves /ə/ → /o/ and /i/ → /e:/. Only (2x) combines /əʊ/ → /o/ and /i/ → /e/. In dollar, the low back rounded vowel /ɒ/ was realized as [o], and the final schwa /ə/ as [a], producing ['dɒl.ar]. This dual substitution reflects the Indonesian tendency to map unfamiliar central vowels onto full vowels within the five-vowel system, avoiding reduction entirely. Fundamental (2x) has two shifts: /ʌ/ → /u/ and /ə/ → /a/. These multiple substitutions suggest compounded L1 influence where both vowels and weak syllables undergo adaptation simultaneously. These multiple substitutions accounted for about 11% of the total data (3 out of 28 tokens), indicating that compound errors were not rare.

Other Individual Cases

Words: continuing, experience, sea port, New Zealand

Continuing → [kon'tɪn. ju:.ɪŋ] substitutes /ə/ with /o/. In experience, the diphthong /ɪə/ was simplified to [e], producing [ɪk'spe.ri.əns]. This kind of diphthong reduction is consistent with findings by Anindita & Munandar (2025), where Indonesian speakers replace complex glides with monophthongs for articulatory ease. In sea port, the first syllable /si:/ was dropped and /ɔ:/ was replaced with [o], yielding [pɒt]. This illustrates both segmental substitution and syllable reduction, possibly influenced by orthography and the Indonesian preference for simpler syllable structures. New Zealand → [nju: 'ze:. lænd] shows the front vowel /zi:/ replaced by /ze:/, consistent with a tendency to shorten or centralize high front vowels.

General Discussion

The substitution errors in President Joko Widodo's speech demonstrate clear and systematic patterns rather than random slips of pronunciation. Across the 28 tokens analyzed, several trends consistently emerged: voiced fricatives such as /v/ and the interdental /θ/ were replaced with more familiar plosives or voiceless fricatives; diphthongs were reduced to monophthongs; and central or low vowels were shifted to /o/ or /u/, reflecting the influence of the five-vowel system common in Indonesian. In addition, weak syllables such as /li/ were often hyperarticulated instead of reduced, resulting in forms like especially → [ɪ'speʃ.əl.e], which sound clear but diverge from native English rhythm.

Some unusual cases, such as media (/i:/ → [e]), experience (/ɪə/ → [e]), dollar (/ɒ/ → [o], /ə/ → [a]), and sea port (/si:/ dropped, /ɔ:/ → [o]), further illustrate how Indonesian and Javanese speakers adapt unfamiliar English vowels. These examples strengthen the argument that the deviations are systematic, shaped by the five-vowel system and by syllable structure preferences, rather than being isolated mistakes.

These findings align with Roach's (1991) framework, which describes how shifts in consonants and vowels can be categorized according to place, manner, and voicing, and with Brown's (2008) theory of negative transfer, which explains why L2 speakers map unfamiliar sounds onto the nearest equivalents in their L1. The persistence of these substitutions in Jokowi's speech shows that even advanced users in high-stakes contexts are not exempt from L1 interference. Interestingly, some errors (e.g., /θ/ → /t/) appeared consistently, while others (e.g., /æ/ → /e/) were more variable, suggesting that both the absence of certain phonemes and differences in exposure contribute to the stability of substitution patterns.

From a pedagogical standpoint, the results highlight the need to prioritize features with the greatest impact on intelligibility, such as fricatives and diphthongs, while recognizing that less disruptive vowel shifts may contribute more to accent than to misunderstanding. Beyond pedagogy, these findings raise

sociolinguistic questions: substitution patterns may persist not only because of phonological transfer, but also because of local norms, orthographic influence, or even identity signaling through accent.

Finally, while this case study offers valuable insight into L1 interference at the highest professional level, it is based on a single speaker and a single speech event. Broader research involving multiple high-profile Indonesian speakers would help clarify whether these patterns are widespread in elite contexts or more specific to Jokowi's Javanese background.

Conclusion

Conclusion of the Study

This study examined 28 instances of sound substitution in President Joko Widodo's English pronunciation during the ASEAN–Australia Special Summit 2018. The substitutions were not random slips but consistent outcomes of phonological transfer from his first languages, Javanese and Indonesian. The most frequent patterns included replacing non-native fricatives (/v/, /θ/) with more familiar plosives or voiceless fricatives, simplifying diphthongs into monophthongs, shifting central and low vowels toward /o/ or /u/, and hyperarticulating weak syllables rather than reducing them. These findings confirm Roach's (1991) account of consonant and vowel shifts by articulatory features and support Brown's (2008) theory of negative transfer, showing how unfamiliar L2 sounds are systematically mapped onto L1 categories.

The analysis demonstrates that even high-profile speakers in formal, international settings are subject to the same transfer processes observed in learners. Some substitutions, such as /v/ → /f/ or /θ/ → /t/, pose a greater risk to intelligibility, while others, such as vowel shifts, primarily affect accent and perceived nativeness. Together, they illustrate how the absence of certain phonemes, coupled with rhythmic and syllabic differences, continues to shape English pronunciation in high-stakes contexts.

Suggestions and Recommendations

This case study underscores the importance of targeted pronunciation training. Instruction should prioritize high-impact features that affect intelligibility most particularly fricatives, diphthongs, and vowel reduction in weak syllables while also addressing accent-related features for speakers in international roles where credibility and prestige are at stake. For professionals and public figures, tailored pronunciation coaching could help anticipate and reduce predictable substitution patterns, thereby improving clarity and confidence in global communication.

At the same time, sociolinguistic factors must be considered. Substitution patterns may persist not only because of phonological constraints but also because of local norms, orthographic habits, and identity signaling through accent. Recognizing these influences can inform more realistic teaching goals and prevent stigmatization of accented speech.

Finally, this study is limited to a single speaker and a single speech event, so its findings cannot be generalized to all Indonesian or Javanese learners. Future research should compare substitution patterns across multiple public figures, investigate differences among regional L1 backgrounds, and explore intervention strategies to reduce problematic substitutions. Such work would help determine whether Jokowi's case is representative of broader tendencies among Indonesian English users in elite contexts.

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