

## Exploring pronunciation errors produced by Indonesian hospital administration students in ordering hospital supplies

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### ABSTRACT

For hospital administration, clear and accurate communication is essential, especially when ordering hospital supplies. Pronunciation errors committed by hospital administration students can cause misunderstandings that have far-reaching harmful effects. By examining students' pronunciation errors, the qualitative study was presented in this study. Data were collected from video conversations in ordering medical supplies in hospital settings, analyzed for errors, and written in the phonetic transcription. According to the findings, respondents made errors in substitution (87%), omission (10%), and insertion (3%). Meanwhile, 47% of the errors were caused by discrepancies in the sound systems between L1 and L2, 37% by mother tongue interference, and 16% by inconsistent vowel usage. This study should be helpful to the hospital administration students to make them aware of the significance of proper pronunciation.



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## 1. INTRODUCTION

A key component of providing healthcare successfully is effective communication. Accurate and transparent communication are crucial for hospital administration, particularly when placing orders for necessary medical supplies (Men, 2014). Even minor misunderstandings can have significant consequences, leading to delays in receiving critical supplies, incorrect deliveries, and potentially compromising patient care (World Health Organization, 2017). Moreover, it may also have cascading effects throughout the healthcare system (Dingley et al., 2008). Accordingly, hospital administration students need to know how to use English for at least hospital supply procurement (Schkinder, 2024). Since English is considered a foreign language in Indonesia, this presents a challenge for Indonesian hospital administration students who are still developing their English language proficiency, especially speaking skills. This is supported by a need analysis study which found that higher education students need to learn more about speaking skills (Parnawati & Ulinuha, 2019). While they may possess a strong understanding of medical terminology in Indonesian, pronunciation errors in English can lead to communication breakdowns during the ordering process such as misunderstandings.

Misunderstandings due to pronunciation errors made by Indonesian hospital administration students can lead to a domino effect of negative consequences. Firstly, delays in receiving essential medical supplies can occur, potentially impacting patient care and even causing treatment postponements (Agency for Healthcare Research and Quality, 2010). Secondly, incorrect deliveries of supplies can result in wasted resources and additional time expenditure to rectify the situation (World Health Organization, 2017). Most concerning, however, are the potential safety hazards that arise from receiving inadequate or unsuitable medical supplies due to communication breakdowns.

English and Indonesian have differences in their sound systems that significantly influence pronunciation. This can pose challenges for Indonesian learners of English when pronouncing English sounds. The Indonesian language, like English, utilizes a set of sounds produced by human speech organs. However, the phonetic inventory of Indonesian differs from English in several key ways. One notable difference lies in the number and types of consonants and vowel sounds present in each language. Indonesian has a simpler consonant system with fewer consonant sounds compared to English, which has a more extensive inventory (Kaharuddin & Ahmad, 2018). For instance, a previous study highlights that Indonesian learners may struggle with pronouncing certain English consonants and vowels due to differences between the two languages (Khoirunnisa & Misnadin, 2022). This discrepancy underscores the importance of targeted pronunciation training and effective communication strategies to mitigate errors in the hospital supply ordering process. Another prominent difference lies in consonant sounds.

English utilizes voiced and unvoiced consonant pairs, like the /b/ in “bat” and the /p/ in “pat”. These pairs require differentiating between sounds produced with and without vibration of the vocal cords (Celce-Murcia et al., 2010). Indonesian consonants, on the other hand, are primarily unvoiced. This distinction can create challenges for students differentiating sounds in terms like “blade” and “plate”, where the subtle difference in voicing can alter the meaning entirely. Then, English has diphthongs (combinations of two vowel sounds like “ou” in “house”) which are absent in Indonesian. This difference can make pronouncing words like “gown” a challenge for Indonesian students, who may struggle to produce the combined vowel sound (Indonesian Ministry of Education and Culture, 2023). By understanding these inherent differences in sound systems, as highlighted by Celce-Murcia et al. (2010), and the Indonesian Ministry of Education and Culture (2023), the areas where Indonesian hospital administration students are most likely to encounter pronunciation errors can be anticipated.

Speaking a foreign language involves omissions, insertions, and substitutions as types and causes of pronunciation errors (Bussmann et al., 1996). Focusing on areas like consonant voicing, vowel variety, and diphthongs, targeted interventions can be developed to improve communication clarity and ensure accurate medical supply ordering. This, in turn, can contribute to smoother and safer healthcare delivery. This research investigates the specific pronunciation errors made by Indonesian hospital administration students when ordering hospital supplies in English. By identifying these prevalent errors, the researchers aim to gain valuable insights into the challenges these students encounter. Moreover, it is also expected to enhance students’ communication skills within this crucial domain as well as to ensure smoother and more accurate hospital supply procurement. This study contributes to the existing body of literature on language education, professional communication, and healthcare management by providing insights into the linguistic challenges encountered by Indonesian hospital administration students.

By addressing the gap in research on pronunciation errors in this specific context, this study seeks to facilitate the development of effective pedagogical strategies tailored to the needs of learners in healthcare administration programs. To sum up, the following are the research questions of this study: 1. What types of pronunciation errors do the Indonesian hospital administration students make in ordering hospital supplies in English? 2. What are the factors that cause pronunciation errors made by Indonesian hospital administration students in ordering hospital supplies in English?

## 2. RESEARCH METHOD

Employing a qualitative research approach, this study utilizes video conversations of simulated ordering of medical equipment for hospital scenarios to collect data on pronunciation errors. The respondents were the sixth-semester students from the Hospital Administration Study Program at IIK Bhakti Wiyata Kediri in the 2023 /2024 academic year who took Professional English subject. There were 30 students divided into three groups, each group consisted of 10 students. The researchers took the first group as the respondents. They perceived difficulties in distinguishing several phonemes (vowels, consonants, and diphthongs) in English words related to the hospital equipment materials. The data obtained from the video conversation was analyzed for errors and written in the phonetic transcription. In transcribing phonetics transcription and marking mispronounced words, the researchers used Cambridge Advanced Learner’s Dictionary 3 (CALD third edition application (Walter, 2008). The errors made by the respondents were identified and then the factors causing these errors were analyzed.

Through systematic analysis, the study aims to identify common pronunciation errors, categorize them based on their linguistic features, and explore potential factors contributing to these errors. By illuminating the specific pronunciation challenges faced by Indonesian hospital administration students, this research aims to inform targeted instructional interventions aimed at enhancing pronunciation proficiency and improving communication skills in healthcare administration contexts. The researchers identified the characteristics of pronunciation errors by implementing theories of English pronunciation by Kelly as well as Carey and Mannell. They noted the pronunciation errors and then classified them according to types of

pronunciation errors. Pronunciation errors in this study were classified into some types; substitution, insertion, and omission. By noting phonetic transcriptions, the researchers then classified pronunciation errors. The next step was describing the types of errors and factors causing the pronunciation of those errors.

### 3. RESULTS AND ANALYSIS

After the researchers analyzed the consonant voicing, vowel variety, and diphthongs, it was found out 30 words that were erroneously pronounced by the students. Those pronunciation errors were classified into 3 types of pronunciation errors. They are the omission, insertion, and substitution that can be seen in table 1.

Table 1. Types of Pronunciation Error

No.	Spelling	Correct Instance	Error Instance	Type of Error	Reason	Research Subject
1	Syringe	sə'rinj	sī'rinj	Substitution	/ə/was substituted by /i/	Student 1
2	Tube	toʊb	tōb	Substitution	/oo / was substituted by /ō/	Student 1
3	Crutch	krəCH	krōoCH	Substitution	/ə / was substituted by /oo/	Student 2
4	Scrub	skrəb	skrōob	Substitution	/ə/was substituted by /oo/	Student 2
5	Sheet	SHēt	SHet	Substitution	/ē / was substituted by /e/	Student 2
6	Urine bag	'yoorən bag	'oorən bag	Omission	/ y / was omitted	Student 2
7	Surgical	'səɾjək(ə)l	'soorjək(ə)l	Substitution	/ə/was substituted by /oo/	Student 2
8	Surgical light	'səɾjək(ə)l līt	'səɾjək(ə)l lit	Substitution	/ī/ was substituted by /i/	Student 2
9	Glove	gləv	glōv	Substitution	/ə/ was substituted by /ō /	Student 2
10	Scale	skāl	skel	Substitution	/ā/was substituted by /e/	Student 3
11	Cannula	'kanyələ	'canyələ	Substitution	/k / was substituted by /c /	Student 3
12	Gauze	gōz	gāz	Substitution	/ō / was substituted by /ā/	Student 4
13	Catheter	'kaTHədər	'kaTHətər	Substitution	/d/was substituted by /t/	Student 4
14	Nebulizer	'nebyə, līzər	'nebu, līzər	Substitution	/ yə/ was substituted by /u/	Student 4
15	Oximeter	ək'simədər	ək'simətər	Substitution	/ d / was substituted by /t/	Student 7
16	Gown	goun	gon	omission	/u/was omitted	Student 7
17	Nasal swab	'nāz(ə)l swab	'nāzal swab	Substitution	/ (ə) / was substituted by /a/	Student7
18	Cotton ball	'kātŋ bōl	'kātŋ bal	Substitution	/ō/ was substituted by /a/	Student7
19	Infusion bag	in'fyooZH(ə)n bag	in'fyooZHōn bag	Substitution	/(ə)was substituted by /ō/	Student7
20	Thermometer	THər'māmədər	Tər'māmədər	Omission	/H / was omitted	Student 8
21	Wheel chair	(h)wēl CHer	(h)wel Cher	Substitution	/ ē/ was submitted by /e/	Student 8
22	Pipette	pī'pet	pi'pet	Substitution	/ī/was substituted by /i/	Student 8
23	Needle	'nēd(ə)l	'ned(ə)l	Substitution	/ ē / was substituted by /e/	Student 8
24	Scissors	'sizəɾz	'skizəɾz	Insertion	/ k/ was inserted	Student 8
25	Dropper	'drāpər	'drōpər	Substitution	/ā/was substituted by /ō/	Student 8
26	Scalpel	'skalp(ə)l	'skalpel	Substitution	/ (ə) / was substituted by /e/	Student 9
27	Ultrasonic gel	əltrə'sānik jel	ultrə'sānik jel	Substitution	/ə / was substituted by /u/	Student 9
28	Stretcher	'streCHər	'streCHer	Substitution	/ə/ was substituted by /e/	Student 10
29	Ventilator	'ven(t)ə, lādər	'ven(t)ə, lādōr	Substitution	/ə/ was substituted by /ō/	Student 10
30	Glucometer	glōo'kāmədər	glōo'kōmədər	Substitution	/ā/ was substituted by /ō/	Student 10

Table 1 above presents an insert and omissions made by the students. only one respondent made a consonant insertion, that is /k/ to the pronunciation of scissors. In the targeted language, 'scissors' is pronounced /'sizəɾz/, but the respondent pronounced /'skizəɾz/ because of the differences in the sound system between L1 and L2. Meanwhile, there are 3 omissions, consisting of 2 consonants and 1 vowel omissions. The voiced consonant 'th' in 'thermometer' is omitted, and then substituted with 't'. Then, in pronouncing 'urine,' the consonant 'y' in /'yoorən/ is also omitted by the respondent. Both are caused by the differences in sound systems between L1 and L2. The Vowel omission can be seen in the pronunciation of 'gown' which should be pronounced in diphthong 'ou' but the respondent omitted 'u' then it was pronounced as 'gon' instead of 'goun.' This vowel omission is also caused by the differences in the sound system between L1 and L2. The respondent's first language is Bahasa Indonesia which does not have any diphthongs. The rest of them are substitutions caused by a variety of factors, such as mother tongue interference, sound system

differences between L1 and L2, inconsistency of English vowels, and influence of spelling English pronunciation.

Tabel 2. Percentage of Type Pronunciation Error

No.	Types of Errors	Number of Errors	Percentage
1	Omission	3	10%
2	Insertion	1	3%
3	Substitution	26	87%
Total			100%

Most respondents use substitution to overcome the barrier to producing phonemes in the targeted language. The percentage of type of errors can be seen in Table 2. Therefore, the result is that more than 80% of errors in pronunciation are caused by replacing speech forms or phonetic symbols that they do not usually hear with phonetic symbols that they usually hear in their daily speech. In other words, these errors are very much influenced by behaviorism theory.

Tabel 3. Factor Causing Pronunciation Error

No.	Pronunciation error	Factor Causing Pronunciation Error			
		MTI	SSD	IEV	ISEP
1	Error in producing /ə/ in the word of syringe		√		
2	Error in producing /oo/ in the word of tube			√	
3	Error in producing /ə/ in the word of crutch	√			
4	Error in producing /ə/ in the word of scrub	√			
5	Error in producing /ē/ in the word of sheet	√			
6	Error in producing /y/ in the word of urine bag			√	
7	Error in producing /ə/ in the word of surgical			√	
8	Error in producing /ī/ in the word of surgical light	√			
9	Error in producing /ə/ in the word of glove		√		
10	Error in producing /ā/ in the word of scale		√		
11	Error in producing /k/ in the word of cannula	√			
12	Error in producing /ō/ in the word of gauze		√		
13	Error in producing /d/ in the word of catheter	√			
14	Error in producing /yə/ in the word of nebulizer	√			
15	Error in producing /d/ in the word of oximeter	√			
16	Error in producing /u/ in the word of gown		√		
17	Error in producing /(ə) in the word of nasal swab		√		
18	Error in producing /ō/ in the word of cotton ball	√			
19	Error in producing /(ə) in the word of infusion bag		√		
20	Error in producing /H/ in the word of thermometer	√			
21	Error in producing /ē/ in the word of wheel chair		√		
22	Error in producing /ī/ in the word of pipette	√			
23	Error in producing /ē/ in the word of needle		√		
24	Error in producing /k/ in the word of scissors		√		
25	Error in producing /ä/ in the word of dropper		√		
26	Error in producing /(ə) in the word of scalpel		√		
27	Error in producing /ə/ in the word of ultrasonic gel			√	
28	Error in producing /ə/ in the word of stretcher			√	
29	Error in producing /ə/ in the word of ventilator		√		
30	Error in producing /ä/ in the word of glucometer		√		

- MTI : mother tongue interference  
 SSD : sound system differences between L1 and L2  
 IEV : inconsistency of English vowels  
 ISEP : influence of spelling English pronunciation

After seeing the explanation of the types of errors in pronunciation, the researchers examined the factors that caused these errors. The factors that influenced the occurrence of errors in pronunciation are divided into 4 categories, namely mother tongue interference, articulatory differences between L1 and L2, inconsistency of English vowels, and influence of spelling English pronunciation, as can be seen in Table 3.

The phonological interference above usually happens when learners want to replace a specific target language sound with their native phoneme when producing one letter. It is caused mostly by the differences in the speech sounds of the respondents' first language and targeted language, as presented in Table 4 below.

Tabel 4. Percentage of Factor Causing Error

No.	Factors Causing Errors	Number of errors	Percentage
1	Mother tongue interference	11	37%
2	Sound system differences between L1 and L2	14	47%
3	Inconsistency of English vowels	5	16%
4	Influence of spelling English pronunciation	-	0%

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Total 100%

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Based on the percentage, the sound system differences between L1 and L2 occupied the highest position, followed by mother tongue interference, then inconsistency of English vowels. The influence of spelling and English pronunciation did not occur in this result. From the overall results of this research, it is known that the factors that cause difficulties in producing language sounds in the form of speech are various, apart from grammar problems, especially due to differences in language sounds in the first language and target language. To overcome these difficulties, respondents mostly used phonemic substitution.

Previous studies have proposed several suggestions to improve students' speaking ability. First, students can try to improve their speaking skills, especially their pronunciation not only by using a dictionary but also by using various artificial intelligence available on the Internet such as Elsa, SmallTalk2Me, et cetera. The detailed as well as instant feedback provided by the AI highlights the AI's role in assisting the students in improving their speaking proficiency level (Ulinuha & Parnawati, 2024). Moreover, another study has suggested that both students and teacher need to mind the language input, learning environment, and motivation to speak English since they affect students' speaking proficiency (Azhimia & Parnawati, 2023). Basuki headlined that pronunciation is essential for speaking. Pronunciation is one of the most important language skills because when communications are delivered correctly, the recipient can comprehend what is being said by Jabbarova in Mariani and Basuki. Proficiency in pronunciation is a prerequisite for fluency in speaking, which is essential for effective oral communication. To put it another way, the goal of teaching pronunciation is to enable students to analyze, recognize, and pronounce English words in a way that closely resembles everyday speech patterns (Basuki, 2018). As a result, the teacher must modify the offered ideas and tailor them to the specific needs of the student in question after identifying pronunciation faults made by the students.

#### 4. CONCLUSION

All in all, this study reveals the results of the type of error made by respondents in learning the target language by substitution of 87%, omission of 10%, and insertion of 3%. Meanwhile, the factors that influenced the occurrence of errors are sound system differences between L1 and L2 of 47%, followed by mother tongue interference of 37%, and inconsistency of vowels of 16%. This study did not reveal the influence of spelling and English pronunciation on the results.

To conclude, it is important to know the factors that create obstacles in learning a second language after the native language, or L1 or the Mother Tongue, where the targeted language or L2 has different grammatical and pronunciation patterns, in particular, the research focused on pronunciation only. In the future, English teachers are expected to be more alert when facing such difficulties to enable the process of learning a new language to be more fully achieved. In order to fully comprehend the influence of the first language on pronunciation, more study is also required. Further studies should focus on particular language pairs as well as other variables including sociolinguistic and pragmatic elements. All things considered, even though the first language has a big impact on pronunciation problems in English, using the right strategies and tactics can lessen these difficulties and help students pronounce words correctly.

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