EL-MAQALAH: Journal of Arabic Language Teaching and Linguistics
Vol. 7. No. 2, 136-152, 2026

Phonological Interference in the Pronunciation of Arabic Letters among Mandailing-Speaking Students: A Case Study in the Arabic Language Education Programme at STAIN Mandailing Natal

Zulpina*
Sekolah Tinggi Agama Islam Negeri Mandailing Natal

Fouad Larhzizer
Hassan First University Settat, Morocco

*E-mail: zulfina88@stain-madina.ac.id

ABSTRACT

Phonological interference is one of the issues in second language learning that can affect pronunciation accuracy, especially in Arabic language learning for non-Arab speakers. The differences between the phonological systems of the first language and Arabic can lead learners to struggle in producing the target language sounds accurately. This study aims to identify forms of phonological interference in the pronunciation of Arabic letters among students who are native speakers of Mandailing, analyze the factors causing it, and formulate strategies to address it based on the Revised Speech Learning Model (SLM-r) by Flege and Bohn. This research uses a qualitative approach with a case study design involving students from the Arabic Language Education Study Program of the 2023 cohort. Data were collected through observations of spontaneous pronunciation during al-aṣwāt learning, in-depth interviews regarding the students' linguistic backgrounds, and documentation. The data were analyzed through stages of data reduction, data presentation, and conclusion drawing. The results show three patterns of phonological interference: consonant substitution, consonant de-emphasis, and changes in voicing features. This interference is influenced by the differences between the phonological systems of Mandailing and Arabic, the intensity of first language use, limited pronunciation practice and exposure to Arabic, and minimal interaction of students with the target language. Based on the SLM-r framework, addressing interference is carried out through five strategies: training the ability to distinguish Arabic sounds from similar sounds in the first language, forming more accurate phonetic categories, enhancing the quality and quantity of Arabic language input, integrating sound perception and production practice, and implementing continuous practice accompanied by evaluation of pronunciation development. This study emphasizes that learning al-aṣwāt for students who are native speakers of Mandailing needs to integrate articulation

Citation: Zulfina. "Phonological Interference in the Pronunciation of Arabic Letters among Mandailing-Speaking Students: A Case Study in the Arabic Language Education Programme at STAIN Mandailing Natal." *EL-MAQALAH: Journal of Arabic Language Teaching and Linguistics* 7.2 (2026): 136-152.

DOI: https://doi.org/10.22373/kfqd4537
Lisensi
Lisensi Internasional Creative Commons Attribution-ShareAlike 4.0.

practice, quality phonetic exposure, and continuous evaluation to support the accuracy of Arabic pronunciation.

Keywords: *Phonological Interference, Arabic Pronunciation, Mandailing Language*

INTRODUCTION

The learning of Arabic for non-Arabs in Indonesia faces various issues, including linguistic and non-linguistic problems (Takdir, 2020). Linguistic problems, such as phonetics, morphology, and structure, while non-linguistic problems include learning motivation, learning resources, teaching methods, study time, and learning environment (Fahrurrozi, 2014). The issues in language learning are certainly diverse, depending on the age of the learners and their educational background (Tungkagi et al., 2022), and the learning environment for Arabic language learners (Setianingsih & Robbani, 2024).

Phonetic issues rank first in second language acquisition (Falsinah & Azhari, 2024), This indicates that studying phonology or the science of sounds is very important for Arabic language learners. Some common phonological problems include errors in pronouncing words or phrases that occur due to differences between long and short vowels (Wulandari, 2020), and the distinctive consonants of the Arabic language that do not exist in Indonesian consonants (Maysaroh, 2024).

This phonological problem occurs starting from Arabic language learners at the elementary school level (Sofiana et al., 2021) up to learners at the higher education level (Sungkar, 2019). This is certainly due to the difference in sound between the target language and the mother tongue (Barrientos, 2021). This issue is also faced by students of the Arabic Language Education program at the State Islamic Institute of Mandailing Natal, the majority of whom are speakers of the Mandailing language. In practice, students encounter difficulties in pronouncing Arabic sounds, with some even experiencing changes in sounds, such as the Arabic letter Zai being pronounced as the letter Sin or Jim. Therefore, this research aims to elucidate the phonological interference for Mandailing-speaking students, identify the factors influencing it, and provide solutions to address it.

Lita's research (Fauziah, 2015) explains that there are two types of pronunciation deviations made by students from Angkola Batak when speaking Indonesian, namely devoicing and allophonic shifts. In line with this, Dini (Fitri et al., 2023) found that the factors causing these disturbances include the bilingualism of the speakers, habits in speaking regional languages, limitations of the speakers, and a lack of interaction with other speakers. Meanwhile, Habibi (Habibi et al., 2023) in his study of Mandailing language interference in the acquisition of Indonesian found that there is phonological interference of vowels and consonants among elementary school students in the South Tapanuli region. In another writing, he revealed that some students carry over pronunciation patterns, word formation, vocabulary choices, and sentence structures from Mandailing when speaking in Indonesian (Habibi, M, Puguh Ardianto Iskandar, Chandra, 2023). The interference of the Mandailing dialect has also been documented by Lasmini (Lasmini, Nur Muhammad Abdillah, Muhammad Qosym Arsyadani, 2025), who found that 13 out of 15 participants (86.7%) experienced phonological interference. In line with this, Taupik Hidayat (Harahap & Marlina, 2025) also explains that

the pronunciation errors made by Mandailing teenagers are influenced by phonological interference from their mother tongue, leading to a systematic sound adaptation to the phonemes of the Arabic language.

This finding indicates that there has yet to be a study focused on phonological interference among Arabic language learners in higher education for speakers of Mandailing and Batak languages. This paper is expected to clarify the forms of phonological interference in the pronunciation of Arabic letters among Mandailing-Batak language-speaking students, identify the causal factors, and provide solutions to these issues based on Flege's Theory. This paper aims to provide information and contributions for Arabic language instructors in the environment of the Mandailing Natal State Islamic College, particularly in addressing these linguistic problems.

METHOD

This research uses a descriptive qualitative approach with a case study design, which is a study that investigates a unit or group in real life (Crowe et al., 2011). This research aims to provide a detailed overview of a specific phenomenon without manipulating any variables (Creswell, 2015). This design was chosen because it is tied to the phenomenon of teaching *'ilm al-ashwat* to students in the Arabic Language Education program at STAIN Mandailing Natal, which requires a deep understanding of how and why phonological interference occurs. (Mizukoshi, 2023).

This research involves students from the Arabic Language Education program at STAIN Mandailing Natal, Class of 2023, who study phonetics and come from a background of Mandailing language speakers. All participants were involved in data collection of pronunciation to identify the forms of phonological interference that arise in the production of Arabic sounds.

Data was collected through observation activities, in-depth interviews, and documentation studies (Sugiyono, 2019). The observation activity was conducted through the observation of students' pronunciation while reading Arabic texts, speaking Arabic, or reciting verses of the Quran. Interviews were conducted using a semi-structured model to keep the interviews focused while also allowing the researcher the freedom to explore relevant ideas that may arise during the interviews (Adeoye-Olatunde & Olenik, 2021). Interviews were conducted to identify the factors influencing the phonological interference process for students who speak Mandailing-Batak. The final aspect is documentation, which aims to demonstrate the credibility of the researcher's thought process in deepening the understanding of the social phenomenon being studied (Carcary, 2020). Documentation in the form of recordings or pronunciation exercises involving Arabic letters in reading texts (Subakti, Hani, Roberta Uron Hurit, 2020). Data analysis was conducted using an interactive model that includes data reduction, data presentation, and drawing conclusions. (Miles et al., 2014).

The data sources in this study are all students of the Arabic Language Education program from the 2023 cohort, which serve as primary sources, while the secondary sources are taken from Mandailing speakers, both from the general public and lecturers within STAIN Mandailing Natal. The purpose of these secondary data sources is to support and reinforce the data obtained from primary data sources (Cheong et al., 2023).

RESULTS AND DISCUSSION

The research results indicate the presence of several forms of phonological interference in the Arabic pronunciation by students of the Arabic Language Education program at STAIN Mandailing Natal, who are speakers of the Mandailing language. Out of the eight students involved in the initial data collection, four students still exhibited forms of phonological interference, particularly in the realization of Arabic consonants. The patterns identified include phoneme substitution involving differences in place and manner of articulation, as well as the loss of certain phonetic features, as explained in the following table:

Table 1:
Forms of Interference Among Mandailing-Speaking Students

No	Student initials	Target Sound	Sound Realisation	Types of Phonological Interference	Phonological Analysis
1	ZF	ز /z/	س /s/	Voicing substitution and neutralization	The voiced alveolar fricative /z/ is realized as the voiceless alveolar fricative /s/
		ح /ħ/	خ/x/	Consonant substitution based on place of articulation	The voiceless pharyngeal fricative /ħ/ is replaced by the voiceless velar or uvular fricative /x/. Both are fricatives, but they differ in their place of articulation.
		ع/ʕ/	ك/k/	Consonant substitution based on place and manner of articulation	The voiced pharyngeal sound /ʕ/ is realized as the voiceless velar stop /k/. The change involves the place of articulation, manner of articulation, and voicing.
		ذ/ð/	س/s/	Consonant substitution based on place of articulation and voicing	The phoneme /ð/ is a voiced dental fricative consonant, whereas /s/ is a voiceless alveolar fricative consonant. This change indicates a shift in the place of articulation from dental to alveolar, as well as a change in the voicing feature.
2	HS	ع/ʕ/	ء/ʔ/	Phoneme substitution (phoneme replacement)	The phoneme /ʕ/, which is a voiced pharyngeal fricative or approximant consonant in Arabic, is realized as /ʔ/, the glottal stop consonant. This change indicates the replacement of a pharyngeal sound with a glottal sound that has a different place and manner of articulation.

		ض/dˤ/	د/d/	Consonant de-emphasis	The emphatic coronal stop /dˤ/ is realized as the nonemphatic coronal stop /d/. The main change lies in the loss of the emphatic feature.
3	SSR	ز/z/	ج/dʒ/	Consonant substitution based on manner and place of articulation	The voiced alveolar fricative /z/ is realized as the voiced postalveolar affricate /dʒ/. The change involves the manner and place of articulation, while voicing is maintained.
		ذ/ð/	ج/dʒ/	Consonant substitution based on manner and place of articulation	The voiced dental fricative /ð/ is replaced by the voiced post-alveolar affricate /dʒ/. The change involves the place and manner of articulation.
		ع/ʕ/	ك/k/	Consonant substitution based on place and manner of articulation	The voiced pharyngeal sound /ʕ/ is realized as the voiceless velar stop /k/. The change involves the place of articulation, manner of articulation, and voicing.
4	NK	ص/sˤ/	س/s/	Consonant de-emphasis	The emphatic alveolar fricative /sˤ/ is realized as the non-emphatic alveolar fricative /s/. The primary change is the loss of the emphatic feature.

The table above shows several forms of phonological interference in the production of Arabic sounds by Mandailing-speaking students. These forms of interference include consonant substitution and changes in phonological features, particularly voicing, place of articulation, manner of articulation, and emphasis. Substitutions were found in the realization of the phoneme's /z/ as /s/, /ħ/ as /x/, /ʕ/ as /k/, /z/ as /dʒ/, and /ð/ as /dʒ/. Meanwhile, changes in emphatic features were found in the realization of /dˤ/ as /d/ and /sˤ/ as /s/. These findings show that deviations in sound production involve not only the substitution of one phoneme for another but also differences in the articulatory characteristics between the target sounds and their realizations. The results of this study are consistent with the discussion by Taupik Hidayat (Harahap & Marlina, 2025) regarding the difficulty Mandailing speakers have pronouncing Arabic phonemes, discussing the differences between the phonological systems of Mandailing and Arabic, as well as the challenges of pronouncing certain sounds, such as /z/, /ʃ/, /ʕ/, and /sˤ/.

To examine the reality and sound interference produced by students in the Arabic Language Education program who are Mandailing speakers when pronouncing words or sentences, the author describes and classifies them below based on the previous table:

No	Student initials	Target word or sentence	Read realization
1	ZF	اذَا زُلْزِلت الأرض	اسا سلسلت الأرض
		بسم الله الرحْمن الرحيم	بسم الله الرخُمن الرخيم
		حِل المشكلة	خِل المشكلة
		بعْد،إعْراب	بكُد، اكْراب
		أستاذ	أستاس
2	HS	شعْر	شأُر
		يضِيق	يدِيق
3	SSR	تنزِيه	تنجِيه
		من ذا الذي	من جا الذي
		شبِعتُ	شبِكْتُ
4	NK	صِراط	سراط

The table above shows consonant substitution in the production of Arabic utterances by Mandailing speakers. These substitutions include changes in pharyngeal sounds, such as /ħ/ becoming the velar sound /x/; changes in the emphatic consonants /dˤ/ becoming /d/ and /sˤ/ becoming /s/; as well as changes in several other consonants. These findings indicate that the speakers' phonological realizations do not yet fully preserve the articulatory characteristics of the target sounds in Arabic. This pattern can be examined from the perspective of phonological transfer and second-language sound acquisition, particularly by considering possible differences between the phonemic inventories of Arabic and Mandailing. In this regard, Flege and Bohn (Flege & Bohn, 2021) explains that learning the sounds of a second language is related to the phonetic system of the first language. This is also what Hesham Aldamen explained (Aldamen & Al-Deaibes, 2023) in his writing, he states that emphatic and non-emphatic contrasts have acoustic correlates that can be identified through measurements of sound production. Almatkhuri experienced the same thing (Almathkuri, 2026) which investigated the pronunciation of Arabic consonants among sixteen foreign learners of Arabic in Saudi Arabia.

Phonological Interference Factors in the Pronunciation of Arabic Letters Among Mandailing-Speaking College Students

From the perspective of the Speech Learning Model, differences between the phonological categories of the first language and those of the target language are one of the challenges learners face in producing second-language sound contrasts (Flege & Bohn, 2021). Based on the observations and interviews conducted by the researcher with the participants, several factors contribute to this phonological interference:

Phonological Differences Between the First and Second Languages

The differences between the phonological systems of the first and second languages are a major factor in language learning. These differences create obstacles and difficulties for second-language learners. As revealed in the interviews conducted by the researcher, the differences between the articulation points of Arabic letters and those of the Mandailing

language make it difficult for learners to read Arabic and the Quran, requiring regular and continuous practice. (SS. Siregar, Komunikasi Pribadi, 24 November 2025). To reinforce this information, the researcher also interviewed a Mandailing-speaking lecturer at STAIN Mandailing Natal. They stated that some Arabic sounds require movements of the speech organs that are not ordinarily used by Mandailing speakers. As a result, speakers may simplify difficult sounds by replacing them with sounds that are easier to pronounce. Sounds in Arabic that do not exist in the Mandailing language are generally pronounced using sounds that are similar to those in Mandailing (K. Nasution, Komunikasi Pribadi, 02 Desember 2025). For example, the phrase من شيئ بعْد, recited while rising during prayer, changes into من شيئ بكْد. Thus, when Mandailing speakers encounter Arabic sounds that are unfamiliar or have no direct equivalent in their native language, they replace them with sounds considered closest within the sound system they have already mastered. As explained by Taupik in their research, Mandailing speakers have difficulty producing the sounds /z/, /ʃ/, /ʕ/, and /sˤ/, which do not exist in the Mandailing phonological system. (Harahap & Marlina, 2025).

Intensity of First-Language Use Among Speakers

The intensity of first-language use also greatly influences phonological interference among Mandailing speakers learning Arabic, particularly in their pronunciation. The habit of producing sounds in their first language is consistently carried over into Arabic pronunciation by Arabic Language Education students. This is reinforced by the conditions and circumstances at STAIN Mandailing Natal, where the majority of students, faculty members, and educational staff are Mandailing speakers. Consequently, Mandailing pronunciation also occurs both inside and outside the classroom. (ZF, Komunikasi Pribadi, 24 November 2025). This certainly reinforces the phonological aspect of Mandailing speakers when learning Arabic as a second language. In line with this, Flege explains that the formation of second-language sound categories is influenced by first-language sound categories (Flege & Bohn, 2021).

Lack of Pronunciation Practice and Exposure to Arabic

Rohmah and Kuswardono explain in their research findings that one factor contributing to students' phonological interference when learning Arabic is the lack of practice using Arabic in everyday life, as well as students' limited knowledge of Arabic sounds. (Rohmah & Kuswardono, 2025). Students also stated that insufficient practice in correctly pronouncing Arabic sounds according to their points of articulation (makhārij al-ḥurūf) is another factor contributing to this phonological interference. Although they read the Qur'an every day or practice speaking Arabic in class, the accuracy of the letters or phonemes they pronounce is not necessarily correct unless they are guided and listened to by a teacher or expert (NM, Komunikasi Pribadi, 24 November 2025).

Speakers Rarely Interact with Other Languages

Mandailing speakers who rarely interact with or use other languages, or who live outside the Mandailing region, tend to have difficulty pronouncing Arabic phonemes properly and correctly. Based on the researcher's observations, students whose educational backgrounds came from schools or Islamic boarding schools outside Mandailing had better and more fluent

pronunciation than students exposed primarily to the Mandailing language itself. This is consistent with what Dini explained (Fitri et al., 2023) that one of the factors causing language interference is speakers' habit of, or loyalty to, using their regional language.

Solutions to Phonological Interference in the Pronunciation of Arabic Letters Among College Students Who Speak Mandailing

Arabic language instruction for non-Arabic speakers has generally tended to prioritize grammar and vocabulary acquisition, while phonology-particularly pronunciation accuracy-has not always received proportional attention. Yet from the perspective of modern Arabic linguistics, language is a meaningful system of linguistic sounds, making sound one of the fundamental elements in the formation and use of language (Nasution, 2026). Inaccuracies in producing Arabic sounds affect not only pronunciation quality but also have the potential to obscure differences in meaning, especially among sounds with similar articulatory characteristics. This condition presents a particular challenge for Mandailing-speaking students because the phonological system of their first language can influence their perception and production of Arabic sounds as a second language.

Efforts to address this phonological interference can be examined through the Revised Speech Learning Model (SLM-r), developed by James E. Flege and his research colleagues. This model explains that an individual's ability to perceive and produce second-language sounds can continue to develop throughout their lifetime through experience and exposure to the language being learned (Flege & Bohn, 2021). The formation of new phonetic categories is influenced by several factors, including the characteristics of the first language's sound categories, the perceived degree of phonetic difference between the first and second languages, and the quantity and quality of second-language input (Wayland, 2021). Based on this framework, addressing phonological interference in the pronunciation of Arabic letters among college students who speak Mandailing should focus on developing sensitivity to sound differences, building the habit of producing sounds accurately, and providing ongoing practice. In this study, these efforts were implemented through the following learning strategies:

Building the ability to distinguish Arabic sounds from similar sounds in the first **language**

The first strategy involves training students to recognize and distinguish Arabic sounds that are perceptually similar but differ in their phonetic and articulatory characteristics. This step is important because the similarity between sounds may cause students to categorize Arabic sounds according to the phonological system of their first language. As a result, Arabic sounds that should be produced with specific articulatory characteristics may be replaced by sounds that students perceive as closest to their habitual language patterns.

In its implementation, the researcher, who also served as the instructor of 'Ilm al-Aṣwāt (the study of Arabic speech sounds), explained the articulatory characteristics of Arabic letters that could potentially cause pronunciation difficulties for students whose native language was Mandailing. The explanation covered the position and movement of the speech organs, places of articulation, and the sound characteristics that distinguish one letter from another. To help students understand these differences, the instructor used visual materials depicting the position of the speech organs when producing specific sounds. The instructor then demonstrated the

pronunciation of the target letters while indicating the parts of the speech organs involved in the articulation process. Through a combination of verbal explanations, visual observation, and direct pronunciation demonstrations, students were expected to gain a more concrete understanding of the differences between Arabic sounds.

The subsequent practice was conducted through individual pronunciation exercises. Students were asked to pronounce the letters targeted in the lesson, while the instructor listened and assessed the accuracy of the sounds produced. When pronunciation inaccuracies were identified, the instructor provided corrections by explaining the articulatory aspects that needed to be improved and then asking the students to repeat the pronunciation. Thus, the exercises focused not only on the ability to imitate sounds but also on understanding how to produce them accurately.

Several letter pairs that are the focus of this exercise include ت /t/ and ط /tˤ/, د /d/ and ض /dˤ/, س /s/ and ص /sˤ/, as well as ء /ʔ/ and ع /ʕ/. These pairs demonstrate differences in phonetic characteristics that require particular attention, even though in learning practice they may be perceived as similar sounds. For example, the letters ت /t/ and ط /tˤ/ are distinguished by their articulatory characteristics, particularly the emphasis or pharyngealization in the /tˤ/ sound. Meanwhile, the letters ء /ʔ/ and ع /ʕ/ differ fundamentally in how and where their sounds are produced. This type of contrastive explanation helps students understand that each letter has its own distinct sound characteristics that cannot be completely equated with sounds in their first language.

Figure 1:
Arabic letter pronunciation exercise



In addition to in-class practice, the instructor assigns independent practice to students who continue to experience difficulty producing the target sounds. Students are asked to practice reading Arabic Texts or Qur'anic verses and then submit voice recordings as material for evaluation. These recordings are used to identify pronunciation errors and determine which areas still require improvement. Through this activity, students have the opportunity to repeat their production of the sounds outside the classroom, while the instructor can provide feedback based on the submitted practice recordings.

Conceptually, this strategy is consistent with the principles of SLM-r, which emphasizes the importance of phonetic experience and the quality of second-language input in the development of sound perception and production abilities. Articulatory explanations, the use

of visual media, pronunciation modeling, individual practice, and feedback are forms of instructional support that can help students develop more accurate representations of Arabic sounds. Repeated independent practice can also expand students' opportunities to perceive and produce the target-language sounds. Nevertheless, the effectiveness of this strategy should be assessed through changes in students' pronunciation accuracy before and after the practice, rather than solely on the basis of practice frequency or task completion.

Forming more precise phonetic categories for Arabic sounds

Within the framework of the Revised Speech Learning Model (SLM-r), the phonetic categories of the first and second languages can influence each other during the acquisition and production of speech sounds (Wayland, 2021). Previous language experience can influence how learners perceive and produce the sounds of a second language, especially when those sounds resemble sounds already familiar from their first language. Therefore, Arabic pronunciation instruction for students who speak Mandailing should focus on developing more accurate phonetic categories, particularly for sounds that are unfamiliar or have phonetic characteristics that differ from those in their first language. Developing these categories requires sufficient exposure to the sounds, accurate pronunciation models, and repeated, contextualized practice in producing them.

In its implementation, the researcher integrated Arabic phonetic pronunciation exercises into the learning materials for each session. The exercises involved pronouncing letters, words, and sentences, as well as reading Qur'anic verses containing the target sounds. Through these activities, students not only learned the written forms and meanings of vocabulary items but also gained direct experience in perceiving and producing Arabic sounds. The continuous integration of pronunciation exercises was intended to enrich students' phonetic experience so that the production of Arabic sounds would not depend solely on first-language sound categories considered to be the closest approximations to the target sounds.

In addition, the researcher played pronunciation models of Arabic letters that the students had not yet mastered, using live examples from an instructor with expertise in Arabic. The students were asked to listen to the characteristics of the sounds being modeled, pay attention to their articulatory differences, and then imitate the pronunciation under the instructor's guidance. This activity provided phonetic input that could serve as a reference for comparing the students' pronunciation with the target-language sound model. When pronunciation inaccuracies were identified, the instructor provided feedback and asked the students to repeat the sounds until their articulatory characteristics became clearer.

The next exercise involves placing the target letters in the initial, medial, and final positions of words. This variation in position is intended to provide experience producing sounds in different phonetic environments, so that students are not only able to pronounce the letters in isolation but can also maintain their sound characteristics when they occur within word structures. For example, practice with the letter ع /ʕ/ can be conducted using the words عَالِيَة (ʻāliyah), أَعْيُن (aʻyun), and وَدَاع (wadāʻ). Through these examples, students are trained to recognize and produce the /ʕ/ sound in different phonetic contexts. A similar strategy is applied to other letters targeted for instruction, according to the pronunciation error patterns identified among the students.

Thus, the formation of more accurate phonetic categories is achieved not only through theoretical explanations but also through a combination of listening to sound models, imitating pronunciation, practicing in various word contexts, and receiving feedback. When carried out consistently, this sequence of activities can broaden students' experience in perceiving and producing Arabic sounds and support the development of second-language phonetic representations. In line with the principles of SLM-r, this development should be understood as a gradual process that occurs through language experience. Therefore, the effectiveness of this strategy should be evaluated based on the accuracy of students' sound production during exercises and Arabic text reading, rather than solely on their ability to imitate the instructor's pronunciation examples.

Increasing exposure to quality Arabic input

In addition to providing repeated sound-production practice, Arabic pronunciation instruction needs to be supported by sufficient, authentic, and high-quality language input or speech input. Flege and Bohn (Flege & Bohn, 2021) explain that the development of second-language phonetic abilities is related to learners' experience receiving and using the target language. Consistent exposure to Arabic sounds can help students recognize phonetic characteristics that have not yet been optimally established in their first-language sound system. For students who speak Mandailing, providing diverse phonetic input is important so they have greater opportunities to listen to, identify, and compare Arabic sounds with sounds they are already familiar with**.**

In practice, the researcher assigned the students to increase their exposure to Arabic pronunciation through various audio and audiovisual sources. One of the sources used was the audio recording accompanying the Al-'Arabiyyah Bayna Yadayk textbook, which provides pronunciation examples in the context of Arabic vocabulary, dialogues, and sentences. In addition, the students were instructed to watch Arabic-language animated films, listen to Arabic-language songs, and engage with other audiovisual materials available on YouTube. The researcher also introduced the Alfatihah.ind application, which can be accessed on mobile devices, as a supplementary resource for practicing reading and listening to pronunciation. The use of these various sources was intended to provide a range of language input so that the students would not rely solely on the pronunciation examples presented by the instructor in class.

To ensure that listening activities do not stop at the passive reception of sounds, students are directed to pay particular attention to the pronunciation of the Arabic letters targeted in the instruction. Students may replay the audio, imitate the model speaker's pronunciation, note sounds they find difficult, and compare their own pronunciation with the examples they hear. Next, students are asked to practice these sounds in the form of words, sentences, or verses from the Qur'an. If necessary, the practice sessions may be recorded and sent to the researcher to receive feedback on pronunciation accuracy. Thus, the language input obtained through listening activities is integrated with sound-production practice and ongoing evaluation.

From the perspective of the Revised Speech Learning Model (SLM-r), this strategy is oriented toward increasing both the quantity and quality of students' phonetic experience in the second language. Exposure to diverse sources gives students opportunities to recognize

variations in the realization of sounds, while imitation and pronunciation-comparison activities help them focus their attention on the phonetic characteristics of the target language. Nevertheless, the diversity of sources does not automatically guarantee the quality of the input. Therefore, the materials used need to be adapted to students' proficiency levels, have adequate audio quality, and, as far as possible, present accurate pronunciation. Through a combination of guided listening activities, repetition practice, and instructor feedback, students are expected to develop phonetic sensitivity and improve their pronunciation accuracy of Arabic letters. The effectiveness of this strategy should subsequently be assessed based on students' progress in producing the target sounds.

Integrating perception and production training

Within the framework of the Revised Speech Learning Model (SLM-r), the perception and production of second-language sounds are interrelated aspects of learners' phonetic development. The ability to hear, recognize, and distinguish sounds is an important part of the pronunciation learning process, which in turn is connected to the ability to produce those sounds accurately. Phonetic experience acquired through the first language can influence how learners both perceive and produce second-language sounds (Flege & Bohn, 2021). Therefore, Arabic pronunciation instruction for college students who speak Mandailing as their first language needs to systematically integrate perception and production practice rather than treating them as two separate activities.

In this study, combining perception and production practice serves as a follow-up to the previous strategies: distinguishing adjacent sounds, developing more accurate phonetic categories, and increasing exposure to high-quality Arabic input. After students receive exposure to the sounds through the instructor's explanations, pronunciation models, and audio materials, they are guided to identify the characteristics of the target sounds before practicing their pronunciation. For example, students first listen to and compare the sounds of the letters ت /t/ and ط /tˤ/, and then pronounce the two letters alternately. Similar practice can be applied to other pairs of letters that may cause pronunciation difficulties. Through this sequence of activities, students are not only required to imitate the sounds but also to understand the phonetic characteristics that distinguish them.

During the production stage, students are asked to pronounce the target sounds in Arabic letters, words, sentences, and passages. The instructor listens to their pronunciation, identifies articulation inaccuracies, and provides feedback appropriate to each student's difficulties. When errors are found, students are directed to listen to the pronunciation model again, pay attention to the differences between the sounds, and then repeat the pronunciation until they achieve a more accurate result. Thus, perception and production practice are carried out through a complementary cycle: listening, differentiating, producing, receiving correction, and improving pronunciation. This practice pattern gives students the opportunity to connect phonetic information received through hearing with the articulatory movements required to produce Arabic sounds.

Nevertheless, students' understanding of the characteristics of a sound is not always accompanied by the ability to produce it accurately. In practice, articulatory habits formed through the use of the Mandailing language, including the influence of dialect and established

pronunciation patterns, may require repeated practice and sufficient time to improve. In other words, students may already be able to recognize the difference between two sounds when listening to them, yet still have difficulty producing that difference consistently in speech. This condition highlights the importance of continuous practice and targeted feedback, particularly as students transition from controlled pronunciation exercises to using the language in more spontaneous contexts.

In line with this, Lasmini (Lasmini, Nur Muhammad Abdillah, Muhammad Qosym Arsyadani, 2025) The research findings explain that articulatory mastery is related to the spontaneous speech produced by speakers. In this learning context, spontaneous speech can be challenging because students must produce sounds directly without always having time to focus their attention on the position of their speech organs. Therefore, the practice is not limited to pronouncing individual letters or words but is also followed by reading Arabic sentences, dialogues, and texts. Increasing the complexity of these exercises can help students apply articulatory accuracy in more natural communication contexts.

Based on this discussion, combining perception and production exercises is a relevant strategy for addressing phonological interference among college students who speak Mandailing. This strategy gives students the opportunity to develop an understanding of the characteristics of Arabic sounds while also gradually practicing their ability to produce them. However, its effectiveness needs to be assessed based on students' ability to distinguish the target sounds and maintain accurate pronunciation, both in controlled exercises and in more spontaneous speech. Thus, successful learning is determined not only by students' ability to recognize sounds but also by their ability to apply this phonetic knowledge in actual Arabic language use.

Providing ongoing practice and measuring progress

The Revised Speech Learning Model (SLM-r) explains that the systems representing the sounds of a first and second language can develop through language experience throughout life. Therefore, pronunciation errors made by learners should not be viewed as permanent obstacles, but rather as part of the ongoing development of phonetic abilities that can still be improved through adequate experience and practice. Exposure to a second language, whether through listening activities or direct language use, can contribute to the development of learners' ability to perceive and produce target-language sounds. (Flege & Bohn, 2021)**.** This principle serves as an important foundation for addressing phonological interference among Mandailing-speaking college students, particularly when they have difficulty pronouncing Arabic phonemes with phonetic characteristics that differ from those of their first language.

In its implementation, the researcher provided motivation and encouragement to students so that they would not easily give up when facing difficulties pronouncing Arabic sounds. Students were guided to understand that accurate pronunciation requires a gradual learning process, consistent practice, and a willingness to acknowledge and correct mistakes. The researcher also encouraged students to gain more experience using Arabic outside formal learning activities, including practicing pronunciation independently, listening to Arabic dialogues, listening to audio materials, and practicing simple conversations. These activities were intended to increase the intensity of students' interaction with the sounds of the target

language while also providing opportunities to apply the phonetic knowledge they had learned in class.

Ongoing practice should be conducted systematically, taking into account the types of pronunciation errors each student experiences. Students who still have difficulty distinguishing certain sounds, such as /t/ and /tˤ/ or /s/ and /sˤ/, may be given repeated contrastive exercises before being guided toward pronouncing more complex Arabic words, sentences, and texts. The researcher then provides feedback on the accuracy of the students' articulation and determines which aspects of pronunciation require further attention. Through this approach, practice emphasizes not only the frequency of repetition but also the correction of specific errors in accordance with learners' needs.

In addition to providing ongoing practice, students' pronunciation development needs to be measured systematically. This can be done through initial and follow-up assessments of students' ability to produce the target phonemes. The assessments may include articulatory accuracy, the ability to distinguish between similar sounds, consistency of pronunciation in various word positions, and the ability to maintain accurate pronunciation when reading sentences or engaging in simple conversations. Students' voice recordings can be used as documentation to compare pronunciation performance at different stages. In this way, the development of phonetic skills can be observed more objectively, while the evaluation results can serve as a basis for determining the next set of exercises.

Figure 2:
Students' individual Arabic phonology proficiency test



Based on the principles of SLM-r, providing ongoing practice and measuring progress are two complementary aspects of addressing phonological interference. Practice gives students opportunities to gain additional phonetic experience, while evaluation helps identify changes in their abilities and difficulties that persist. Therefore, the success of this strategy cannot be assessed solely based on students' active participation in practice; it must also be examined through changes in the accuracy of sound production that can be observed over time. Through consistent practice, targeted feedback, and regular evaluation, students are expected to gradually develop their Arabic pronunciation skills and reduce the influence of first-language sound patterns on the production of second-language sounds.

CONCLUSION

This study concludes that phonological interference is a significant challenge in Arabic pronunciation learning among Mandailing-speaking students, arising from differences between the phonological systems of Mandailing and Arabic, the intensity of first-language use, limited pronunciation practice and exposure to Arabic, and insufficient interaction with the target language. The findings identify three main patterns of phonological interference: consonant substitution, consonant emphatic weakening, and changes in voicing features. These patterns indicate that students' difficulties extend beyond the mechanical production of individual sounds and are also associated with the influence of previously established first-language phonetic categories. Therefore, understanding the linguistic background of learners is essential for identifying pronunciation difficulties and developing appropriate instructional strategies in Arabic phonetics (*al-aṣwāt*) courses.

Based on the Revised Speech Learning Model (SLM-r) proposed by Flege and Bohn, this study highlights five strategies for addressing phonological interference: developing students' ability to discriminate Arabic sounds from similar sounds in their first language, establishing more accurate phonetic categories, increasing the quantity and quality of Arabic speech input, integrating perceptual and productive practice, and providing continuous practice accompanied by systematic assessment of pronunciation development. These strategies emphasize the importance of combining explicit articulatory instruction, exposure to accurate pronunciation models, repeated practice, and constructive feedback. Consequently, effective Arabic pronunciation instruction for Mandailing-speaking students should be designed as a continuous and contextualized learning process that addresses both sound perception and production. Further research involving a larger number of participants and systematic pre- and post-intervention assessments is recommended to evaluate the effectiveness of these strategies and their applicability to learners from different linguistic backgrounds.

REFERENCES

Adeoye-Olatunde, O., & Olenik, N. (2021). Research and scholarly methods: Semi-structured interviews. *Journal of the American College of Clinical Pharmacy*, *4*, 1358–1367. https://doi.org/10.1002/jac5.1441

Aldamen, H., & Al-Deaibes, M. (2023). Arabic emphatic consonants as produced by English speakers: An acoustic study. *Heliyon*, *9*. https://doi.org/10.1016/j.heliyon.2023.e13401

Almathkuri, J. (2026). PRODUCTION OF ARABIC EMPHATIC AND GUTTURAL SOUNDS BY L2 LEARNERS: AN ERROR ANALYSIS STUDY. *European Journal of Foreign Language Teaching*. https://doi.org/10.46827/ejfl.v10i1.6574

Barrientos, F. (2021). On segmental representations in second language phonology: A perceptual account. *Second Language Research*, *39*, 259–285. https://doi.org/10.1177/02676583211030637

Carcary, M. (2020). The Research Audit Trail: Methodological Guidance for Application in Practice. *The Electronic Journal of Business Research Methods*, *18*. https://doi.org/10.34190/jbrm.18.2.008

Cheong, H.-I., Lyons, A., Houghton, R., & Majumdar, A. (2023). Secondary Qualitative Research Methodology Using Online Data within the Context of Social Sciences. *International Journal of Qualitative Methods*, *22*. https://doi.org/10.1177/16094069231180160

Creswell, J. W. (2015). *Penelitian Kualitatif & Desain Riset* (3rd ed.). PUSTAKA PELAJAR.

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, *11*, 100. https://doi.org/10.1186/1471-2288-11-100

Fahrurrozi, A. (2014). Pembelajaran bahasa arab: Problematika dan solusinya. *Arabiyat: Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban*, *1*(2), 161–180.

Falsinah, M. A., & Azhari, S. (2024). Analisis kontrastif fonem bahasa Arab dan bahasa Indonesia. *Lisan An Nathiq: Jurnal Bahasa Dan Pendidikan Bahasa Arab*, *6*(2), 1–29.

Fauziah, L. R. (2015). Study, Language Interference of Batak Angkola-Mandailing Language to Indonesian: A Case. *Passage: Journal of English Language and Literature*, *3*(2), 64–76. https://doi.org/https://doi.org/10.17509/psg.v3i2.21178

Fitri, D. A., Siregar, T. R., & Lubis, Y. (2023). INTRODUCTION TO LINGUISTICS: LOCAL LANGUAGE PHONOLOGICAL INTERFERENCE IN NORTH SUMATERA. In *Cerdika: Jurnal Ilmiah Indonesia* (Vol. 3, pp. 867–873). Publikasi Indonesia. https://doi.org/10.59141/cerdika.v3i09.672

Flege, J., & Bohn, O.-S. (2021). *The Revised Speech Learning Model (SLM-r)*. 3–83. https://doi.org/10.1017/9781108886901.002

Habibi, M, Puguh Ardianto Iskandar, Chandra, A. S. (2023). INTERFERENSI BAHASA MANDAILING DALAM PEMEROLEHAN BAHASA INDONESIA SEBAGAI BAHASA KEDUA PADA SISWA KaELAS 1 SEKOLAH DASAR. *Basastra: Jurnal Bahasa, Sastra, Dan Pengajarannya*, *11*(1), 102–120. https://doi.org/https://doi.org/10.20961/basastra.v11i1.72104

Habibi, M., Iskandar, P. A., & Suriani, A. (2023). Interferensi Bahasa Mandailing dalam Pemerolehan Bahasa Indonesia. *ALINEA: Jurnal Bahasa Sastra Dan Pengajaran*, *12*(2), 193–209. https://doi.org/https://doi.org/10.35194/alinea.v12i2.3096

Harahap, T. H., & Marlina, L. (2025). PENGUCAPAN KOSAKATA BAHASA ARAB BAGI PENUTUR BAHASA MANDAILING. *MAHIRA: Journal of Arabic Studies*, *5*(1), 1–18. https://doi.org/https://doi.org/10.55380/mahira.v5i1.1131

Lasmini, Nur Muhammad Abdillah, Muhammad Qosym Arsyadani, Y. W. R. (2025). Analisis Lahjah Mandailing dalam Mempengaruhi Pengucapan Bahasa Arab Mahasiswa Pendidikan Bahasa Arab. *IMLAH: Islamic Manuscripts of Linguistics and Humanity*, *7*(2), 163–173. https://doi.org/https://doi.org/10.15548/imlah.v7i2.13627

Maysaroh, S. (2024). Analisis Kontrastif Fonologi Bahasa Arab dan Bahasa Indonesia: Perbandingan Vokal dan Konsonan. *Albariq: Jurnal Pendidikan Bahasa Arab*, *5*(1), 61–75.

Mizukoshi, K. (2023). Case Study Research and Applications. *Japan Marketing Journal*. https://doi.org/10.7222/marketing.2023.045

Rohmah, N. D. N., & Kuswardono, S. (2025). INTERFERENSI FONOLOGIS SISWA KELAS VII MTs AL-ASROR SEMARANG DALAM PEMBELAJARAN BAHASA ARAB. In *Lisanul Arab: Journal of Arabic Learning and Teaching* (Vol. 14, Issue 1, pp. 79–88). Universitas Negeri Semarang. https://doi.org/10.15294/laa.v14i1.24215

Setianingsih, R., & Robbani, A. S. (2024). Problematika pembelajaran bahasa arab: studi kasus pada siswa sanggar bimbingan permai penang malaysia. *Diglosia: Jurnal Kajian Bahasa, Sastra, Dan Pengajarannya*, *7*(4), 655–664.

Sofiana, A. N., Paramitha, N. H., & Huda, N. (2021). The Problems of Reading Arabic Text in Terms of Phonological Aspects (Case Study in Fifth Grade Students of SD Qurrota A'yun Babadan Bantul DIY Academic Year 2020/2021). In *al Mahāra: Jurnal Pendidikan Bahasa Arab* (Vol. 7, Issue 1, pp. 138–162). Al-Jamiah Research Centre. https://doi.org/10.14421/almahara.2021.071-08

Subakti, Hani, Roberta Uron Hurit, D. (2020). *Metode Penelitian Kualitatif*.

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Sungkar, A. (2019). Problematika Linguistik Dalam Pembelajaran Mahārah Qirā'ah Pada Jurusan Pendidikan Bahasa Arab Uin Raden Intan Lampung. *Arabia: Journal of Arabic Language Education*, *11*(1), 134–153.

Takdir, T. (2020). Problematika pembelajaran bahasa Arab. *Jurnal Naskhi Jurnal Kajian Pendidikan Dan Bahasa Arab*, *2*(1), 40–58.

Tungkagi, F. M., Ali, I., & Kasan, Y. (2022). Problematika Pembelajaran Bahasa Arab pada Mahasiswa Lulusan Non-Madrasah di Prodi Pendidikan Bahasa Arab IAIN Sultan Amai Gorontalo. *Al-Fakkaar*, *3*(1), 1–16.

Wayland, R. (Ed.). (2021). Contents. In *Second Language Speech Learning: Theoretical and Empirical Progress* (pp. vii–ix). Cambridge University Press. https://www.cambridge.org/product/AF6E90F81353F09418C14308F7BD60B4

Wulandari, N. (2020). Analisis kesalahan fonologis dalam keterampilan berbicara bahasa Arab. *Al-Fathin: Jurnal Bahasa Dan Sastra Arab*, *3*(01), 71–84.