

The Effect of Arabic on the Pronunciation of First Stage EFL University Students

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تأثير اللغة العربية على نطق طلبة الجامعات متعلمي اللغة الانكليزية كلفة اجنبية في المرحلة الاولى

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Abstract

This research aims to explore the impact of Arabic L1 on the pronunciation of first-stage EFL university students. This study utilizes the descriptive and analytical model for data analysis. Moreover, this study explores the impact of Arabic L1 on the segmental features and suprasegmental features for first-stage EFL university students. This study is based on data gathered through the administration of a pronunciation test and a questionnaire with first-stage EFL university students. Error and frequency analysis have been utilized for the analysis and interpretation of the pronunciation test results. Furthermore, the results gathered through the questionnaire have been interpreted using the descriptive statistical analysis technique. This study's results show that Arabic L1 impacts the pronunciation skills of first-stage EFL university students with respect to the non-existing phonemes /p/, /v/, /θ/, and /ð/ and the impact of Arabic L1 on consonant clusters, vowel contrast, stress patterns, and intonation patterns. Additionally, the results show that the difference between EFL university students' perception and performance is apparent with respect to suprasegmental pronunciation skills. This study concludes that Arabic L1 is a strong factor that affects EFL pronunciation skills for first-stage EFL university students. **Keywords** Arabic phonological transfer; EFL pronunciation; First stage university students; Segmental & supras segmental characteristics; Second language phonology

1. Introduction

Pronunciation is one of the key aspects of second language acquisition skills necessary for fluent communication. However, Arabic EFL learners face numerous pronunciation obstacles while learning English. The differences between Arabic (L1) phonetics/phonology and English (L2) phonetics/phonology contribute to pronunciation obstacles for Arabic EFL learners. For instance, there are phonemes such as /p/, /v/, and voiced/voiceless dental fricatives /ð/ and /θ/ that do not exist in Arabic. As such, Arabic EFL learners find it difficult to pronounce such phonemes (Abohajar et al., 2023, p. 234). In addition, stress and intonation are suprasemental aspects that can pose pronunciation obstacles to Arabic EFL learners. For instance, stress and intonation have different systems for Arabic and English. As such, stress and intonation can negatively affect learners' pronunciation (Maghrabi, 2021, p. 102). Pronunciation obstacles hinder learners' confidence while speaking. This is because pronunciation of English is given lesser importance while pursuing university education for the first time (Jahara & Abdelrady, 2021, p. 13). Additionally, there is inadequate pronunciation teaching for Arabic EFL learners during university education (Abohajar et al., 2023, p. 234). In general, it can be observed that the Arabic influence on English pronunciation appears in terms of both segmental and suprasegmental phonetics in EFL learners during the first stage of university-level studies, so there are implications for improving EFL pronunciation instruction in countries where Arabic is spoken.

1.1 Problem Statement

Although highly relevant to the acquisition of communication competence, Arabic-speaking EFL university students' English pronunciation has been, perhaps, the most difficult skill to master, due to the impact of Arabic phonology, the speaker's mother language, on English prosody. In other words, EFL Arabic speakers' persistent

mispronunciation has been a consequence of the adverse effect of the Arabic phonological pattern on the English speaking production, due to the lack of attention given to English pronunciation in EFL teaching in Arabic-speaking countries, with students graduating from the English language courses at the university with no substantial skill in English pronunciation (Abohajar et al., 2023, p.).

1.2 Research Objectives

It is intended to:

Determine the most frequently encountered English pronunciation weaknesses of first-stage Arabic-speaking EFL university students who have been influenced by the Arabic phonology. Analyze the unique Arabic L1 phonological properties causing pronunciation challenges in English. Discuss the impact of segmental and suprasegmental transfer from Arabic on EFL learners' English pronunciation. Suggest approaches for teaching pronunciation better for Arabic-speaking EFL students based on the issues observed.

1.3 Research Questions

What are the commonest errors of English pronunciation exhibited by Arabic-speaking students in the first stage of EFL? Which Arabic phonological patterns affect English pronunciation among stage-one EFL students? How do segmental and suprasegmental elements of the Arabic language affect English pronunciation? What kind of teaching methods could be used to mitigate the effect of L1 on EFL pronunciation achievement by Arabic-speaking EFL learners?

2. Literature Review

2.1 L1 Phonological Influence on EFL Pronunciation

There exists extensive research that emphasizes that L1 phonology has an immense impact on L2 speech production. In regard to Arabic EFL learners, it can be stated that segmental dominance represents the most visible form of L1 influence. In specific English phonemes that do not actually exist within an Arabic phonological system—most importantly, however, /p/, /v/, and /θ/ and /ð/—are commonly replaced with their acoustic or articulatory near-equivalents within an Arabic phonological system. For example, /p/ tends to be replaced by /b/, and /v/ by /f/, whereas /θ/ and /ð/ typically abound by /s/, /z/, and /d/ correspondingly (Abohajar et al. 2025, p. 12; Altakhaineh et al. 2024, p. 360). These replacement patterns constitute direct phonological transfer and indicate that L1 categories have actually been used for approximating L2 productions and demonstrate predicting functions of L1 phoneme systems towards L2 speech production. Apart from segmental characteristics, suprasegmentals like stress on lexical items, syllable rhythm, and intonation patterns indicate L1 transfer. Arabic learners tend to use Arabic stress patterns for English lexical items. Thus, they tend to put stress on syllables that are supposed to be unstressed in English. Moreover, Arabic learners tend to use their native intonation patterns in English. This leads to flat intonation patterns for statements and interrogative statements. As indicated above, it has been observed that intonation patterns tend to be flat for both statements and interrogative statements (Alzi'abi, 2025, p. 5). In addition to the mentioned features, the phonotactics in Arabic also influence the pronunciation. Arabic disfavors intricate consonant clusters, particularly at the beginning of a word. Therefore, the addition of epenthetic vowels occurs in order to alleviate the consonant cluster in English syllable structure introduced by the learners themselves (Altakhaineh et al., 2024, p. 365). Therefore, the aforementioned observations demonstrate convergence in terms of the influence of Arabic phonological systems on the pronunciation and prosody of EFL in the sense that they collectively attest the pervasive influence of Arabic phonological systems on the pronunciation and prosody of EFL in support of SLA theories stressing the L1 influence on L2 pronunciation as a central issue in the acquisition of L2 speech production in the same manner as indicated in Abohajar et al. (2025, p. 14).

2.2 Gaps in Current Research on Arabic EFL Pronunciation Transfer

Although there is considerable research on Arabic-speaking EFL learners, there exist very critical gaps. Firstly, whereas segmental elements like challenging consonants have received sufficient attention, a similar examination of suprasegmental elements like stress, rhythm, and intonation is rather limited (Alzi'abi, 2025, p. 8). There is a great absence of suprasegmental study, which tends to affect our comprehension about L1 transfer relating to intelligibility. Secondly, existing research tends to examine phonemes/structural contrasts in isolation without taking full consideration of phonological awareness and perceptual abilities as mediating variables. Phonological awareness, defined as the ability to attend to and manipulate sound structures consciously, has been found to play a significant role in mediating perception and production of L2 sounds; however, its mediating effects in EFL learners of Arabic background remain relatively unexplored. Additionally, most investigations are cross-sectional or descriptive designs which fail to take into consideration

learners' evolving pronunciation abilities across time and responses to treatment. Another significant gap is found regarding the role of Arabic dialect variation in L2 pronunciation. There is considerable phonetic variation in different Arabic dialects, potentially resulting in different transfer phenomena for EFL learners. Little attention has been paid to explore this aspect of Arabic dialect variation in general, which results in an incomplete understanding of cross-linguistic transfer in different populations of Arabic-speaking EFL learners (Abohajar et al., 2025, p. 15). To fill this gap, there is a need for in-depth inquiry combining segmental and suprasegmental features.

2.3 Theoretical and Methodological Innovations

Contemporary research in pronunciation studies illustrates an emphasis on updated levels of theory and methodology. Contrastive analysis and error analysis continue to offer essential methodological strands, though new research is increasingly incorporating acoustic analysis, corpora of phonetic data, and psycholinguistics to properly frame the complex interface of L1 and L2 phonologies (Altakhaineh et al., 2024, p. 363). To cite an example, research studies of consonant clusters combine phonotactic research with objective measures of pronunciation and orthographic knowledge such that distinct patterns of articulation may be associated with reading abilities. Experimental design studies related to the perception and production of lexical stress offer more insight into the way L1 stress patterns affect the stress pattern assignment for English (Alzi'abi, 2025, p. 6). It is possible that with perception and production experiments, the L2 stress contrast and the impact of L1 transfer could be remedied with explicit learning. On a theoretical level, there appears to be value to combining approaches from models like the Speech Learning Model (SLM), or Perceptual Assimilation Model (PAM), to explain the processes of persistent L1 transfer. These theoretical models state that learners' perceptual categorization of their L2 sounds is affected by their L1 phonologies and that if learners fail to perceptually assimilate the sounds of their L2, they will effectively imprint incorrect pronunciation rules and maintain them persistently throughout their lifetime.

2.4 Bridging the Gap: Toward Integrated Pronunciation Instruction

To fill the existing research gaps, the literature shows a growing need for and interest in comprehensive teaching approaches involving the combination of segmental and suprasegmental practice, taking into account the learners' L1 backgrounds. These teaching practices would include contrastive drills on English-Arabic phonological contrasts, teaching practice on lexical stress and accent, and utilizing multimodal learning aids, such as phonetic visualization software, to raise the learners' phonological awareness. Moreover, the inclusion of longitudinal studies analyzing teaching interventions is advocated. Longitudinal studies enable the measurement of change in segmental and suprasegmental aspects, while at the same time offering empirical support for teaching procedures aimed at improving pronunciation. Finally, narrowing the gap between theory and practice also entails incorporating models of second language acquisition to ensure well-rounded pronunciation teaching encompassing transfer in both perceptual and productive aspects. By embracing such evidence-informed best practices, teachers are able to heighten levels of intelligibility, mitigate adverse L1 transfer, and empower learners with useful communication skills for application in daily life situations. Integrated learning, consequently, constitutes a fundamental milestone in propelling research development and teaching practice in Arabic EFL phonetics (Altakhaineh et al., 2024, p. 368; Alzi'abi, 2025, p. 10).

3. Methodology

3.1 Research Design

For its research design, the study employs a descriptive-analytical approach, which has frequently been applied in pronunciation studies and second language acquisition literature in order to investigate the phenomenon of linguistic interference patterns, error rate, among others (Dörnyei, 2022, p. 97). This research design will be employed to descriptively analyze pronunciation errors influenced by Arabic phonology specifically for the purpose of quantifying the frequency of pronunciation errors presented by students in the first stage of EFL studies. Quantitative research designs are preferred for this research since pronunciation errors can be measured objectively, allowing for further statistical analysis regarding recurring patterns of L1 influence (Saito & Munro, 2023, p. 114).

3.2 Data Collection

La recolección de datos se realizó mediante dos principales instrumentos A pronunciation test, and A structured questionnaire. In pronunciation tests, English phonemes and suprasegmentals considered difficult for Arabic speakers to produce are used, including /p/, /v/, /θ/, /ð/, consonant clusters, and stress patterns, and learners are required to read them out. Leaving aside some variations, pronunciation tests are very widely accepted and used

instruments in EFL studies for accurate measurement of segmentals and suprasegmentals done by learners (Derwing & Munro, 2021, p. 68). This questionnaire aims to gather background information on participants' linguistic profiles concerning their exposure to English, consciousness of difficult pronunciations in English, and perception on how Arabic contributes to difficult pronunciations in making an English statement. Questionnaires can be most efficient in researching pronunciation because they can gather information that complements phonetic research results in adding contexts (Dörnyei & Taguchi, 2021, p. 6).

3.3 Data Analysis

The data gathered was then analyzed through error analysis and frequency analysis. The learners' responses were transcribed phonemically, and then it was compared to how the standard British and American English are pronounced. The errors were classified based on the segmental characteristics such as the consonants and vowels, and the suprasegmental aspects like stress and intonation. The frequency of each error type was then calculated to identify how common the errors on pronunciation are, which are brought about by Arabic phonology.

The data collected using the questionnaire is analyzed using descriptive statistical methods such as percentages and mean to evaluate learner perceptions and linguistic background trends. Integrating pronunciation patterns with data obtained from the questionnaire provides a broader interpretation with regard to L1 transfer in pronunciation production and learner awareness (Saito & Munro, 2023, p. 121).

3.4 Analytical Framework

This study's framework for analysis is based on the theories proposed by Contrastive Analysis and is informed by the current findings of research into Second Language Phonological Transfer. Contrastive Analysis is the basis for comparisons between the phonology of Arabic and that for English and predictions concerning difficulties that may arise because of differences (as proposed by Lado and referred to more recently in current theories and models for the study of SLA). This theoretical framework is informed more recent views that L1-transfer is selective and graded rather than absolute (Best & Tyler, 2022, p. 152). With the assimilation of contrastive phonological analysis and error analysis, it is possible to detect the existing predictable and emergent features in the pronunciation patterns of the learners. Notably, the framework is in tandem with the latest developments in the concept of second language acquisition studies in relation to the nexus between the perception and production processes of phonology and the level of instructional inputs provided in the second language (Derwing & Munro, 2021, p. 75). The framework can also be used to interpret the influence of the Arabic language on the pronunciation of the EFL learners in the university

4. Results

The findings of this research form compelling empirical proof of just how greatly Arabic phonology affects English pronunciation in first-stage EFL university students. The findings that emerge from analysis of data collected via the use of the pronunciation test and structured research questionnaire show that EFL students experience persistent difficulties with English pronunciation and that these difficulties can be traced back to negative transfer from first language speakers. These difficulties occur at both segmental and suprasegmental levels of linguistic stress and that while the former occur with more frequency it is generally the results of the latter that have more influence upon intelligibility and foreign accent results. In view of its clarity and for intensity of analysis, findings shall be presented categorically and divided into four subsections that relate to major themes of Arabic phonological impact upon EFL students' English pronunciation.

4.1 Segmental Pronunciation Errors Influenced by Arabic

The data analysis of pronunciation records proves that segment errors account for the largest number of and are the most prominent type of pronunciation problems presented by first stage EFL learners. A close look at non-target production shows that there are particular patterns of substitutions of English consonants that do not exist or differ in terms of pronunciation in Arabic. The consonants that proved most problematic were /p/, /v/, /θ/, and /ð/. Sometimes, learners replaced /p/ with /b/ and /v/ with /f/ in an attempt to adapt to Arabic phonology. This could be owing to Arabic not having /p/ and /v/ as distinctive sounds. Also, English dental fricative sounds /θ/ and /ð/ are frequently replaced either by alveolar fricative sounds /s/ and /z/ or alveolar stop sounds /d/, which shows Arabic phonology patterns. These substitution alternations occurred in a non-arbitrary way, suggesting that learners did not resort to random misarticulations of English sounds but engaged with purposeful assignments of non-native phonological features to their biggest similar Arabic counterparts. The results of such observations are highly congruent with principal models of phonological transfer, affirming that L1 phonological systems indeed play a pivotal role in L2 speech production, especially during the early phases of

L2 acquisition (Derwing and Munro, 2021, p. 72). Especially, the pervasive nature of such L1 transfer during segmental pronunciation is dominated by its redundant effects on EFL pronunciation abilities of first stage university learners across new L2 environments in the most current research publications on Arab learners alike (Altakhaineh et al., 2024, p. 360).

4.2 Vowel and Consonant Cluster Difficulties

Besides consonantal alternations, there is apparent difficulty with English vowel contrasts and consonant clusters. The learners had been regularly confusing long and short vowel contrasts such as /ɪ/ and /i:/, often neutralizing them where vowel length is distinguished in English. This can be accounted for by considering how vowel length and vowel contrasts are distinguished in Arabic. The learners appear to perceive vowel length and vowel contrasts differently. Additionally, consonant clusters, especially in word-initial and word-final positions, were found to be another problematic aspect for the subjects. Simplification of consonant clusters in Arabic is usually done by inserting a vowel to separate consonant clusters, which is phonotactically marked in Arabic. For instance, school was often realized as "isku:l," and final consonant clusters, for example, next, were simplified or altered in some way. These observations mirror Arabic phonotactics, where complex consonantal clusters, especially in initial syllable positions, tend not to be preferred. Learners' attempts to rearrange English syllable patterns show how pronunciation issues, instead of being confined to sounds, encompass more general aspects of phonological patterns. These observations confirm recent research on Arabic EFL learners adjusting English phonological patterns according to their L1 preferences for Arabic syllable structures (Altakhaineh et al., 2024, p. 365). In terms of intelligibility, these changes have a considerable impact on fluency and listener understanding because these changes to syllable patterns go against the natural rhythms and timing of English speech. This serves to validate general SLA research about phonotactic transfer causing as much interference as segmental errors (Best & Tyler, 2022, p. 155).

4.3 Suprasegmental Features: Stress and Intonation Patterns

Further, it can be observed from this analysis that suprasegmental characteristics, in particular, the emphasis on stressed syllables/syllables in a word in relation to intonation, are identified as a source of challenge for EFL learners at stage one. Several candidates were found with an inappropriate emphasis on polysyllables, where emphasis sometimes followed Arabic emphasis patterns despite being a part of an English utterance. Apart from stress on words, the students demonstrated little control concerning the intonation patterns in English. Both declarative and interrogative sentences were pronounced with flat intonation or with rising and falling intonations from Arabic, which resulted in communication inefficiency, especially in questions and focus constructions. Although the suprasegmental errors were relatively few in number when compared to segmental errors, their effect was major. It is well supported in contemporary studies that the essential ingredient while judging the intelligibility or fluent pronunciation of speech is suprasegmental (Saito & Munro, 2023, p. 118). Further, these findings highlight that teaching pronunciation only to pronounce individual speech sounds may not be essentially important while considering the high communication value of prosodies (Derwing & Munro, 2021, p. 79).

4.4 Learners' Awareness of L1 Influence on Pronunciation

Analysis of data from the questionnaires shows that the learners were conscious of the Arabic interference with their English pronunciation. Most of the learners reported difficulties in pronunciation and linked the problems to differences between Arabic and English phonetic systems. But further analysis of the data shows that the learners' consciousness was mainly about segmental characteristics, such as the sounding of some consonants. It was observed that the learners showed a low level of consciousness regarding the influence of Arabic on suprasegmental characteristics such as stress and intonation. It was observed that the participants showed no recognition for the difficulty-causing nature of these variables despite the obvious instances of prosodic transfer underlying the audio recordings submitted by the participants. These results are in line with previous findings in the field of SLA, suggesting that learners form a distorted view of the degree of control they have over suprasegmental aspects, accompanied by a lack of appreciation of their significance for communication (Dörnyei, 2022, p. 141). These results further suggest the importance of increasing the phonological and metalinguistic awareness of the learners, specifically related to stress and intonation.

5. Discussion

This paper will examine and explore the finding of the current study in relation to existing research and theory regarding L1 phonological transfer insofar as second language pronunciation is concerned. The finding of this study confirms that Arabic Mosaic does impact English pronunciation in first stage university students learning

English as a foreign language from stage one universities globally regarding segment and suprasegment levels. There are four subsections encompassing the result categories.

5.1 Segmental Transfer and Phonemic Substitution

These results powerfully confirm predictions derived from Contrastive Analysis regarding predictable difficulties stemming from differences between L1 and L2 phonologies, particularly differences in phoneme inventories, to create areas of predicted difficulty for learners acquiring an L2 (Best & Tyler, 2022, p. 153). The substitution of /p/ by /b/ and /f/ for /v/ indicates negative phonological transfer. The data reveals that amongst first-stage English learners, segmental errors of consonant /p/ and /θ/, and consonant /θ/ and /ð/ were predominantly prevalent. This result supports current empirical research concerning Arabic-speaking EFL learners, which has regularly found similar substitution patterns being caused by the unavailability of such phonemes in Arabic (Altakhaineh et al., 2024, p. 360; Derwing & Munro, 2021, p. 72). The persistence of these substitution patterns even in a higher education establishment confirms that L1 interference cannot be effectively resolved through earlier English language training alone. Moreover, it emphasizes the need for linguistics-guided training of first-stage University students on discrimination and production of these phonemes.

5.2 Phonotactic Constraints and Syllable Structure Modification

Another major discovery by this study is related to the challenges confronted by the learners regarding English consonants and vowel variations. Addition of V to English consonants is a result of Arabic phonotactics, as it tends towards easier syllable configuration. This finding is evidence for previous research stipulating Arabic-speaking learners alter English syllable patterns to align with L1 phonological patterns (Altakhaineh et al., 2024, p. 365). Theoretically speaking, the data is consistent with recent approaches to phonological transfer in terms of its graded and selective nature rather than absolute transfer per se (Best & Tyler, 2022, p. 156). The transfer of rules from Arabic is not absolute; conversely, they selectively apply English rules to their own phonological system. The similarities between long and short vowels also point towards minimal discrimination of English vowel contrasts, which are less phonologically salient in Arabic. The findings here corroborate the need to incorporate phonotactic awareness in pronunciation teaching over mere segmental sounds.

5.3 Suprasegmental Influence on Intelligibility

In respect to stress and intonation, conclusions show that suprasegmental aspects are still highly problematic for Arabic-speaking EFL learners regardless of advancements made to decrease segmental error production. Unusual placement of stress and lack of intonation suggest that there is substantial L1 transfer with respect to stress placement because stress markers function very differently in Arabic than in English. The conclusion supports current SLA studies on stress which argue that suprasegmental aspects “have an overly large effect on perceived foreign accent” (Saito & Munro, 2023 p. 118). Although the occurrence of suprasegmental error types was lower than segmental errors, their seriousness in communication was greater, which resonates with Derwing & Munro’s claim that the role of prosody in comprehensibility is paramount (Derwing & Munro, 2021). The result indicates that pronunciation teaching in EFL contexts overweight the pronunciation of segmentals against suprasegmentals in a way that learners give more emphasis to the pronunciation of each sound compared to the rhythm and stresses. This practice can be a reason for communication problems when learners are able to pronounce individual sounds clearly.

5.4 Learner Awareness, Instructional Gaps, and Pedagogical Implications

There is a contradiction between the self-perception of learners’ awareness of Arabic’s impact on their English pronunciation and their real performance. Most of the participants recognized the influence of Arabic on their English pronunciation, but few could show a proper understanding of this impact in a manner that goes beyond pronunciation. This result coincides with Dörnyei’s (2022) statement regarding a learner’s lack of awareness of more sophisticated elements of pronunciation, especially suprasegmental features (p. 141). This problem has deep implications with regard to teaching. Since Arabic phonological patterns have not been explicitly elucidated to be contrasted with English patterns in pronunciation teaching, students could continue to fossilize their mistakes in pronunciation (Derwing & Munro, 2021; see also Saito & Munro, 2023, p. 123). It is crucial to tackle both segmental and suprasegmental aspects of pronunciation in a unitary educational system to minimize detrimental transfer from the first language and upgrade overall intelligibility among students in the first stage of EFL studies at a university. L1 transfer is a feature that has to be managed appropriately in pronunciation teaching, and it has deep implications with regard to teaching EFL pronunciation. Since Arabic

is considered a polysynthetic language with complex suprasegmental patterns, students who transfer their language to the

6. Limitations

Nevertheless, the current study also faces a number of limitations that need to be identified and addressed. First, this study only targets first-stage EFL university students. This could affect the level of generalization with respect to the results for more advanced EFL learners (Derwing & Munro, 2021). Learning pronunciation is a rather gradual process that relies on extensive exposure and thus might not necessarily target the same results for more advanced students (Derwing & Munro, 2021, p. 92). Secondly, this study is mainly reliant on controlled pronunciation tasks and questionnaires. Although these instruments have proved to be effective in pronunciation error identification and perception analysis, they could be limited in measuring pronunciation performance in communicative speech. It has been found in existing research that there could be a discrepancy in performance between naturalistic conversation and tasks related to reading (Saito & Munro, 2023, p. 131). Thirdly, while this study covers prominent aspects of segmental and suprasegmental characteristics, it does not involve acoustic/instrumental analysis in phonetics, which would help in understanding nuanced differences in articulation/prosody. According to Best & Tyler (2022), purely judgmental analyses in perception might yield differences in phonetics that lie beyond perception (i.e., in acoustic analysis) (Best & Tyler, 2022, p. 158).

7. Future Research

In light of the results and shortcomings of the current study, there are some possible research avenues that may be explored in future. For instance, future studies may use longitudinal research paradigms that investigate Arabic LOE influence on English pronunciation longitudinally and explore how LOE pronunciation training impacts Arabic-English learners. Longitudinal research paradigms are very effective in exploring pronunciation fossilization and development (Derwing & Munro, 2021, p. 97). Second, future research might make use of acoustic research and techniques in phonetic analysis to supplement perception. Vowel duration, voice onset time, stress, and tone might be analyzed acoustically to enable a more quantitative evaluation of the effects of L1 transfer, giving a better understanding of the degree of accuracy of pronunciation, as argued by Saito and Munro in 2023, p. 134. Thirdly, another area of research could be related to the influence of variation in Arabic dialects in learning pronunciation in English. Arabic dialects vary greatly in their phonetic implementation. A study on pattern variation in different Arabic dialects could aid in analyzing variation in EFL learners (Altakhaneh et al., 2024, p. 369). Lastly, future studies must examine the impact of explicit learning and technological aids on suppressing negative L1 transfer during the early university learning process.

8. Conclusion

This study examined the impact of Arabic on English pronunciation in first-stage EFL University students, proving that Arabic phonology has a considerable effect on learners' pronunciation at both segmental and suprasegmental levels. Findings indicate challenges in English phonemes which do not exist in Arabic, consonant clusters, differences in vowel patterns, stress, and intonation, proving again that L1 transfer plays a fundamental role in learners' pronunciation of a second language (Best & Tyler, 2022, p. 153). The findings also highlight the mismatch between learner recognition of pronunciation issues and actual pronunciation execution, which indicates that there are still gaps in teaching pronunciation. The findings above support recent claims that teaching pronunciation needs to embrace contrastive analysis, instruction, and awareness-raising activities (Derwing & Munro, 2021, p. 85; Saito & Munro, 2023, p. 123). In conclusion, the present study adds to the increasing trend of research on Arabic-speaking EFL learners to offer an insight into pronunciation problems at the university level. The significance of pronunciation education for improving intelligibility and communicative competence is highlighted. In particular, dealing with L1-attributes from an insightful and educationally well-grounded approach is crucial for efforts to enhance EFL pronunciation learning among Arabic-speaking learners.

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Appendix

Appendix A: Pronunciation Test Instrument

The pronunciation test was designed to elicit segmental and suprasegmental features of English that are known to be problematic for Arabic-speaking EFL learners. The test consisted of two parts: isolated words and short sentences.

Part A: Word List (Segmental Features) Participants were asked to read the following words aloud: Pen van think this school street play very paper three These words were selected to assess learners' production of English phonemes absent in Arabic (/p/, /v/, /θ/, /ð/) and their handling of initial and final consonant clusters.

Part B: Sentence Reading (Suprasegmental Features) The student played football yesterday. I think this paper is very important. She studied English at the university. These sentences were used to examine word stress, sentence stress, rhythm, and intonation patterns.

Appendix B: Questionnaire Items

The questionnaire was administered to collect background information and learners' perceptions of pronunciation difficulties. It consisted of closed-ended and Likert-scale items.

Sample Items:

How long have you been studying English?

☐ Less than 5 years ☐ 5–10 years ☐ More than 10 years

I find it difficult to pronounce some English sounds that do not exist in Arabic.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

I believe that Arabic affects my English pronunciation.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

Which aspect of pronunciation do you find most difficult?

☐ Individual sounds ☐ Stress ☐ Intonation ☐ All of the above

Appendix C: Error Categories and Coding Scheme

The pronunciation data were analyzed using the following error categories:

Segmental Errors

Substitution of /p/ with /b/

Substitution of /v/ with /f/

Substitution of /θ/ and /ð/ with /s/, /z/, or /d/

Vowel length confusion (/i/ vs. /i:/)

Phonotactic Errors

Vowel epenthesis in consonant clusters (e.g., school → /isku:l/)

Cluster reduction (e.g., next → /neks/)

Suprasegmental Errors

Incorrect word stress placement

Flat or transferred intonation patterns

Each error was coded and counted to determine frequency and distribution across participants.