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# Iraqi Students' English Consonant Pronunciation Mistakes: An Analytical Study

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**ABSTRACT**

*In order to determine what kind of training is required for second language (L2) learners, it is helpful to diagnose the challenges they have with pronunciation. This study aimed to fill a gap in our understanding of Arab students' English pronunciation challenges by determining which English consonant phonemes and clusters Iraqi EFL students struggle with, and by exploring the ways in which the students' degrees of language proficiency impact their performance on these tests. The research included forty Iraqi female college students, twenty from each of two groups with varying degrees of English ability (20 from lower-intermediate to intermediate). A four-part productive pronunciation exam helped them see where they were going wrong while pronouncing certain clusters of consonants in different word positions. The participants' largest proportion of mistakes while pronouncing the following sounds were found in the data analysis: /ŋ/, /ʒ/, /p/, /ɹ/ and/ʧ/; /t/ and /d/ of the regular past tense morpheme -ed; and the three and four consonant clusters. In addition, students at the lower-intermediate level were more likely to make a mistake when pronouncing clusters and consonant sounds than those at the intermediate level. What's more, mistakes made by learners were more likely to vary in initial positions than in medial or final ones in words. According to the research, consonants which are located at the beginning or end of words are more likely to be problematic for pronunciation than those that are located in the middle of words.*

**KEYWORDS:** Iraqi learners, students learning English, Arab students, consonant pronunciation, English pronunciation, pronunciation mistakes.

## 1. Introduction

According to VaroI (2012), pronunciation is among the most important aspects of communication because it is responsible for making speech understandable and comprehensible. The acquisition of a second language can be facilitated by correct pronunciation, whereas incorrect pronunciation might be detrimental to the process (Zhang, 2009). When second language learners are brought into contact with a language system. that has characteristics that are distinct from those of their first language (L1), they have a more difficult time mastering the pronunciation of the target language. It is also possible for articulation problems to have an effect on other aspects of language, such as spelling. There are situations in which the native accent of the learner can influence the foreign accent of the learner in some manner or another (Vergun, 2006). Factors such as age, gender, self-motivation, previous language learning experience, and attitude towards the target language are some of the additional elements that have the ability to influence the pronunciation of second language learners.

Several research, such as Ambrozová (2014), Centerman and Krausz (2011), Nguyen (2007), and VaroI (2012), have attempted to shed light on the primary issues that students of English as a second language or English as a foreign language face when it comes to pronunciation. A number of additional studies have concentrated on determining the mistakes in English pronunciation that are frequently produced by Arab students of the language. Specifically, the purpose of these studies was to investigate the difficulties that students in "Yemen (Al-Shuaibi, 2009), Jordan (Al-Saidat, 2010), Sudan (Hassan, 2014), Oman (As-Sammer, 2014), and Saudi Arabia (Ahmad, 2011; Ahmad & Nazim, 2013; Al-Jasser, 1978, Alqarni, 2013; Ammar & Alhumaid, 2009; Binturki, 2008)" have in pronouncing the English language.

There is a need to arrive at a clearer profile of such challenges, despite the fact that A significant number of these research have uncovered significant findings regarding the challenges that Arab students of English encounter when it comes to spelling and pronunciation. This article presents the findings of a study that focused on detecting English consonant pronunciation problems made by Iraqi students of English as a foreign language. This was done in an effort to contribute to such a profile. The next section provides a summary of the challenges that the pronunciation of consonants in English is something that Arab students are likely to experience., as well as the potential variables that contribute to these issues. This section is presented in light of the goal of the current study.

**2. Consonants in English and Arabic**

It is necessary to take into account the linguistic differences that exist between the first language (L1) and the second language (L2) so as to get an understanding the process of acquiring a new phonological system. It is a well-known fact that the accents of people who speak a second language are a defining characteristic of the impact of their mother tongue. The phonological systems of Arabic and English are very distinct from one another. While Arabic is the most prominent member of the South-Central Semitic language family, which belongs to the Semitic branch of the Afro-Asiatic language family. It shares a close relationship with both Hebrew and Aramaic. (Al-Huri, 2015), English is a West Germanic Indo-European language related to Frisian, German, and Dutch. (Baugh & Cable, 2002). Arabic originates from the Central South Semitic language family. Arab students are likely to experience a great deal of difficulty with English pronunciation, particularly with regard to the pronunciation of English consonants, as a result of these phonological system variations. " Arabic and English consonants exhibit several fundamental distinctions. Arabic possesses a total of 28 consonants, while English has a somewhat smaller number of 25 consonants. The majority of consonants in Arabic and English are the same, although there are a few that are exclusive to one language and not the other. According to El Zarka (2013), "second language learners can readily acquire consonants that are present in both languages", but they have challenges when it comes to acquiring the pronunciation of consonants that are unique to one language. Modern Standard Arabic lacks English consonants like /p/, /v/, /g/, and /ʧ/.

There are several consonants that are not present in Modern Standard Arabic, but other than that, the phonological systems of the two languages are distinct from one another in terms of the properties of their consonant clusters which is a syllable structural feature that refers to a set of consonants which have no intervening vowel. It can occur at the initial or final position of words. In contrast to English, which allows for initial clusters of two or three consonants (for example, print and spring), and final clusters of two, three, or four consonants (for example, paint, painted, contexts), Arabic does not have any initial-consonant clusters, although it does allow for final clusters of two consonants (Amer, 2010). Therefore, compared to Arabic, English has a larger diversity of consonant combinations that are lengthier. Arab students learning English as a foreign language (EFL) or as a second language (ESL) may often add a vowel within a combination of consonants because of the numerous consonant clusters in English (Ammar & Alhumaid, 2009; Al-Shuaibi, 2009; Na'ama, 2011).

In addition, the contrasts between the writing systems of Arabic and English are another element that contributes to the difficulties that Arab learners have in uttering English consonants well. According to El Zarka (2013), Its two linguistic registers, Standard Arabic and spoken Arabic, and two orthographic depths, shallow, vowelized script and deep, un-vowelized script, make Arabic unusual. The English orthography system, on the other hand, is complex and goes beyond the concept of a relationship between sounds and letters. Due to the complexity of the English orthographic system, it is possible for sounds to be spelt in more than one way, and for letters to represent more than one sound. This is because the system allows for various spelling of sounds. Furthermore, the majority of the rules for spelling include a great deal of exceptions (Bascatetti, 2009). For example, the morpheme -s colud be uttered in three different ways in spoken English: the regular plural, the third-person singular simple present suffix, and the normal plural. However, written Arabic only employs one spelling for the morpheme. As a result of this

irregularity, it might be challenging to correctly pronounce the consonants in the English language for individuals who are not native speakers.

It is reasonable to assume that Arab students of English may experience the challenge to pronounce the English consonants. The explanation for for this is the divergence in the phonological systems of Arabic and English in terms of the features of consonant sounds and combinations. Not a lot of studies have been documented regarding the different kinds of challenges or the frequency of these problems, which is something that should be noted. In the following paragraph, this will be brought to your attention.

## 3. Previous Related Studies

Research has been conducted to investigate the challenges that non-Arab speakers of English face while attempting to pronounce words. For instance, Nguyen (2007) investigated the mistakes that Vietnamese students of English made while they were attempting to pronounce the final consonants in our language. Five students of different ages and their performance in terms of their pronunciation was assessed by five individuals who were native speakers of English. With regard to the articulation of English word-final consonants, the results of this research demonstrated that Vietnamese learners had a tendency to Either add the schwa sound or substitute it with phonemes that closely resemble the consonants of their native language. the effect that Turkish phonology has on the pronunciation of English terms that are borrowed from Indo-European languages and are used in Turkish for articulation was the subject of another study that was conducted by VaroI (2012). Based on the results of this research, it can be observed that Turkish adult speakers encounter challenges when it comes to uttering the English phonemes /θ/, /ð/, /ɹ/, and /t/, which are absent in their native language. Rather than using these sounds, the learners substituted the Turkish phonemes t, d, and r, which are the closest to them. In the setting of Sweden, Centerman and Krausz (2011) conducted an investigation to determine the mistakes that were made by children attending public schools when they were attempting to pronounce the English phonemes /θ/, /ð/, /ʃ/, and /ʤ in different position of words (initial and final). Because these sounds are absent in the Swedish language, the findings suggest that Swedish language learners who are learning English have a more difficult time pronouncing them when they are in the initial position than when they are in the final position. In a study conducted by Ambrozová (2014), it was discovered that it is the dental fricatives /θ/ and /ð/, aspirated plosives /p/, /t/, and /k/, bilabial approximant /w/, and velar nasal / ŋ/ that give Czech learners of English the most difficulty when it comes to how they pronounce the English language. According to the findings, the effect of the learners' first language phonetic system was the root cause of these issues in pronunciation. As can be seen, the primary reason for the pronunciation of consonants was found to be the difference between the phonological systems of the L1 and L2 languages, as observed in these studies.

In their research, the investigators examined the challenges faced by Arab students of English in pronouncing consonants. They utilised either the Contrastive Analysis Hypothesis (CAH) or the Critical Period Hypothesis (CPH) as the foundation for their findings. The hypothesis that variances in Arabic dialects and Arab origins are responsible for unique mispronunciations of English is substantiated by the collective findings of this research. Barros (2003) conducted a study on the difficulties faced by six Arabic-speaking individuals who moved to the United States after reaching adolescence, specifically focusing on pronunciation concerns in the context of English as a Second Language (ESL). The findings of the research indicated that the consonants /ŋ/, /p/, /v/, /d/, and /ʤ/ were the ones that were mispronounced the most frequently by the learners. However, the degree of difficulty in pronouncing these consonants differed among the learners due to the fact that they spoke diverse dialects of their first language. Al-Saidat discovered that Arab students of English had a tendency of inserting a short vowel between consonants at the beginning and end of certain syllables in English. This was seen in the setting of Jordan. On the other hand, the research conducted by Na'ama (2011) demonstrated that Yemeni University had a tough time uttering the clusters of three and four final consonants that are common in English words. This is as these clusters are absent in the segmental features of Arabic. In conclusion, Hassan (2014) discovered that Sudanese individuals who are learning English experience problems in

pronouncing consonant sounds that contrast with one another. These consonant sounds include /z/ and /ð/, /s/ and /θ/, /b/ and /p/, /ʃ/ and /tʃ/.

The majority of researches concentrated their attention specifically on the pronunciation mistakes that Arab students of English made for the first time. A previous investigation was conducted by AL-Jasser (1978), who discovered that sounds such /p/, /v/, /g/, /r/, /ʧ/, /ʒ/ and /ŋ/, which are not present in Arabic as independent phonemes, provide difficulties for Iraqi students who are learning English. In the context of English as a Second Language (ESL), Binturki (2008) discovered that Iraqi students encounter challenges when it comes to articulating the voiced interdental fricatives /v/, /p/, and /ɹ/. Furthermore, these issues are dependent on the word positions of the students. Ammar and Alhumaid (2009) conducted research on the phonetic interference that Najdi The influence that Arabic has on the learning of English consonants and consonant clusters by Iraqi female undergraduate students.

A number of studies were conducted with the purpose of analysing mistakes in pronunciation that were made by Iraqi students who were learning English. /p/, /v/, /g/, /r/, /ʧ/, /ʒ/, and / ŋ / were identified as hard sounds for Iraqi English learners in a prior study that was described by Abu-Haidar in 1991. This is due to the fact that these phonemes do not exist independently in Arabic. An investigation conducted by Binturki (2008) within the framework of English as a Second Language (ESL) revealed that Iraqi learners face difficulties while attempting to pronounce the voiced interdental fricatives /v/, /p/, and /ɹ/. There is a link between the exact positions of these sounds within words and the difficulties that are experienced. According to the findings of a study that was carried out by Ammar and Al-Ani (1970), the ability of Iraqi female students to comprehend English consonants and consonant clusters was influenced by the phonetic interference that arises from the use of Arabic. As part of their research, they investigated the phonetic characteristics of the sound's /p/, /v/, /ŋ/, /ʧ/, /ʤ/, /ð/, /θ/, /r/, and /l/ at different positions ( initial, middle, and final ) of the words. In this research, the effects of L1 interference on Arab students learning English as a second language were illustrated. In addition, Ahmad's (2011) research reveals that Arab English learners have difficulty while attempting to pronounce the consonant phonemes /p/, /d/, /v/, /ʧ/, /ʒ/, and /ŋ/. Based on the Common Arabic Heritage (CAH), Alqarni (2013) undertook a study to investigate the use of the English voiceless postalveolar affricate /ʧ/ by Arabic English as a Second Language (ESL) learners. According to the findings of this study, Learners experienced challenges in appropriately articulating the phoneme /ʧ/. They frequently substituted it with the phoneme /ʃ/, mainly when it appeared at the end of words. The authors Ahmad and Nazim (2013) employed a different approach to explore the viewpoints of teachers regarding English consonant pronunciation problems that were generated by Iraqi students of English as a foreign language. In accordance with the results of this study, the educators realised that their students frequently committed a multitude of mistakes when attempting to pronounce the sounds /p/, /d/, /v/, /ʧ/, /ʒ/, and /ŋ/ by themselves.

Prior research indicates that both Arab and non-Arab English learners face challenging when attempting to pronounce English consonants that do not exist in their native language's phonological systems. Arabic learners of English are likely to face more challenges due to the significant variances in consonant characteristics between the two languages. Therefore, additional research efforts are required to establish a more definitive understanding of the consonant pronunciation difficulties faced by Arab learners of English as a Foreign Language (EFL) or English as a Second Language (ESL), as well as the factors that may impact these difficulties. An effective approach to do this is to utilise a measure for assessing a wider range of potential challenges in pronouncing consonants in different word locations. It is crucial to consider how these mistakes change among learners with varying language proficiency levels. The current study aimed to address these challenges within the specific context of Iraq. It sought to provide answers to these two research inquiries that are listed below:

1- Which English consonant sounds and clusters provide challenges for Iraqi female EFL learners in terms of pronunciation?
2- What are the differences in English consonant pronunciation performance among learners with varying degrees of language proficiency?

## Method

### *3.1 Study Participants*

The participants included forty female students from Iraq who participated in this study as the sample. The data collection took place at an Iraqi university, where the participants were enrolled in an undergraduate programme. The individuals' ages varied between 19 to 24 years old during the data collection period. A total of twenty students were assigned to each of the two groups that were formed from the participants. A lower-intermediate level of English language proficiency was exhibited by the students in the second group, in contrast to the students who were in the first group, who showed an intermediate level of English language proficiency. Both the academic study levels of the participants, such as the fact that intermediate students were taking Level 4 classes and lower-intermediate students were attending Level 1 classes, as well as the evaluations of their language abilities that were carried out by their teachers, were used to determine the participants' level of language proficiency. Before enrolling in university, each of the participants had completed a formal English education in Iraqi schools for a period of six years, during which they attended four sessions each week, with each instruction lasting for forty-five minutes. There was no obligation for them to take part in the research study, and prior to the collection of the data, they gave their informed agreement to take part in the investigations.

### 3.2 A Test of English Consonant Pronunciation Used in the Research

An effective assessment of English consonant pronunciation was designed for the purpose of achieving the objective of this research, which was to evaluate the oral performance of the participants. Reviewing the tools that were utilised in the research conducted by Barros (2003), Binturki (2008), Ammar and Alhumaid (2009), and Ahmad (2011) served as the basis for the development of the test. The consultations that took place between the two authors resulted in the development of three different drafts of the test. See the appendix for a list of words that are included in each of the four sections that make up the final draft of the examination.

The first part of the article is comprised of a list of thirty words that each contain ten sounds that are challenging /p/, /v/, /ʧ/, /ʤ/, /ŋ/, /ʒ/, /ɹ/, /l/, /ð/ , and /θ/ are the sounds that are being referred to here. These sounds are presented in three different points inside the word: the initial one, the medial, and the final. One sound that diverges from this rule is the /ʒ/ sound, which manifests itself exclusively in the word-medial and -final positions. With the exception of the final position, the sound /ŋ / was only tested. In addition to that, twenty words were utilised as distraction items. The absence of these ten sounds in the Arabic phonological system was the reasoning behind the decision to concentrate on them in particular. Based on the contrastive analysis, the discrepancies between the phonological systems of Arabic and English led to the expectation that these ten consonant sounds are probably challenging for Arab students who are learning English. In the second and third parts of the assignment, the problems associated with the phonetic realisation of the morpheme -s, which is the regular plural and third-person singular simple present suffix, were tested. The morpheme -s has three different pronunciation alternatives, which are [s], [z], or [ɪz]. Similarly, the regular past tense morpheme -ed also has three different uttering ways, which are [d], [t], or [[ɪd].]. In addition to the six words that serve as distracters, these two portions contain a total of sixteen words, eight words for each morpheme. In conclusion, the fourth section contains a list of twelve words that were picked out in order to investigate the challenges that are associated with articulating English consonant clusters. Clusters of consonants were tested using six words that occur at the beginning of words, and in order to test the cluster, an additional six words were included. Additionally, six additional words were utilised as distractions. For the purpose of evaluating the learners`

articulation of consonant clusters in different position of words (initial and final), the measure utilised two and three consonant clusters (CC and CCC, respectively) in initial position. On the other hand, two, three, and four consonant clusters (CC, CCC, and CCCC, respectively) were utilised for final positions. In light of this, the examination encompassed five distinct forms of consonant clusters.

### *3.3 Methods for Collecting and Analysing Data*

Before beginning the data collection process, informed consent was obtained from both the institution and the participants. In addition to informing the participants that only for the purposes of academics and research would the examination be conducted, the researcher also provided them with an explanation of the general objective of the study as well as the recording processes. All of the participants were given the pronunciation test that was prepared in a secluded room at their respective universities. The printed form of the exam was provided to them, and they were instructed to read the four lists of words in silence for a period of six minutes in order to become acquainted with them. Subsequently, the researcher used a high-sensitivity recorder to record the pronunciation performance of each participant as the words were being read by them from the four different lists. Everyone who took part in the study was informed that they had the ability to reread any word if they believed it had been uttered incorrectly.

Immediately following the completion of the data collection process, the recording process were used digital sound files and subsequently labelled separately with numbers such as "S1, S2" and so on. This was done to facilitate accessibility as well as to guarantee that the student's identities would be secured. The two authors then proceeded to conduct a joint analysis of the recordings which followed this. The International Phonetic Alphabet (IPA) was utilised in order to do a phonetic transcription of each of the target sounds. After conducting an analysis of the students` pronunciation performance, the data that was gathered was calculated. A score of one was assigned to each pronunciation mistake that was made, while a score of zero was assigned to a response that was correct. There was a calculation of the pronunciation mistakes that were made by each participant, and those mistakes were turned into percentages. After that, the mean percentage frequency of mistakes in pronunciation were calculated for all challenging phonemes and consonant clusters. in each of the distinct word positions that were included in each group.

## 4. The Findings of the Research

In this section, the data that were acquired , there is a report of the results of the pronunciation test that the students took. The two research questions are taken into consideration prior to the presentation of these findings. To begin, a quantitative presentation of the findings from the analysis of the pronunciation of all of the participants is delivered. The second aspect that is shown is a comparison of the pronunciation mistakes that were made by the participants who were of different levels of language skill.

### *4.1 Frequencies of Mispronunciations of Consonants by Students*

The author, in this section, describes the frequency of the participants' mistakes in uttering the ten challenging consonants, the morphemes -s and -ed of the regular plural and simple present, as well as the past tense suffixes, and consonant clusters. With regard to the pronunciation of the 10 challenging consonants, the frequencies of the participants' mistakes are presented in Table 1. As evident from the table, the participants had difficulty pronouncing a significant number of these consonant sounds in English.

The participants made the most mistakes when pronouncing six specific consonants. These consonants were the voiced postalveolar fricative /ʒ/ (with an mistake percentage of 48.83%), the voiced velar nasal /ŋ/ (with a mistake percentage of 25.00%), the voiceless bilabial plosive /p/ (with a mistake percentage of 70.83%), the voiced alveolar approximant /ɹ/ (with a mistake percentage of 68.17%), the voiced interdental fricative /ð/ (with a mistake percentage of 16.17%), and the voiceless postalveolar affricate /ʧ/ (with a mistake percentage of 35.83%). In addition, they made mistakes in the remaining four consonants, but these occurred less frequently. These include the voiced labiodental fricative /v/ with a mistake percentage of 10.83%, the voiceless interdental fricative /θ/ with a mistake percentage of 9.67%, the

voiced alveolar lateral approximant /l/ with a mistake percentage of 17.50%, and the voiced velar plosive /g/ with a mistake percentage of 16.67%.

Table 1. *Mean mispronunciation percentages of difficult consonants*

| Challenging consonant sounds | Initial | Medial | Final | All positions |
|---|---|---|---|---|
| /ʒ/ | -- | 67.5% | 79% | 48.83% |
| /ŋ/ | -- | -- | 75% | 25.00% |
| /p/ | 56.5% | 71% | 85% | 70.83% |
| /ɹ/ | 46% | 72.5% | 86% | 68.17% |
| /ð/ | 20.5% | 13% | 15% | 16.17% |
| /ʧ/ | 29.5% | 30% | 48% | 35.83% |
| /v/ | 13% | 11.5% | 8% | 10.83% |
| /θ/ | 25% | 2% | 2% | 9.67% |
| /l/ | 22.5% | 15% | 15% | 17.50% |
| /g/ | 23% | 15% | 12% | 16.67% |

The percentage frequencies of pronunciation mistakes , the sound of words, varies depending on their position in a sentence. as illustrated in table 1, which also includes this information. When it comes to the pronunciation of /p/ and / ɹ/, for instance, the participants made a greater number of mistakes in the medial and final position of words compared to the initial position. Similarly, inside the word-final position, they exhibited a greater number of pronunciation mistakes compared to the medial and/or initial position of the letters /ʒ/, /ð/, and /l/. The articulation of /ʧ/, /v/, and /θ/ in initial position is characterised by a greater relative quantity of mistakes in comparison to the articulation of these phonemes in the medial and final positions. Except for /p/ and /g/ phonemes, the mistakes that are made in the pronunciation of most of the test words that are found in word-medial positions are not the most frequently used terms in any of the ten sounds. This is in contrast to the mistakes that are produced in the initial and final position of words.

Table 2 provides information regarding the frequency of mistakes made by the participants when uttering the morphemes -s and -ed of the regular plural, simple present, and past tense suffixes. According to the statistics presented in the table, it was observed that the highest percentage of mistakes occurred when the phonemes /t/ and /d/ of the morpheme -ed were mispronounced. The mistake rate was 65%. In numerous instances, the individuals who took part in the study committed this mistake by either omitting the morpheme or substituting it with -d and incorporating a vowel in front of it. For instance, they may have pronounced "champed" [tʃæmpt] as [tʃæʌmp] or [tʃæmpɪd]. When it came to the pronunciation of the morpheme -s, the second largest frequency of mistakes was produced in the phonemes /ɪz/, with the mistake percentage being 16%. When it came to uttering the /s/ or /z/ phonemes of the morphemes –s, as well as the /ɪd/ sound of the morpheme -ed, the participants made a few numbers of mistakes. Specifically, it is the habit of the participants to generalise their articulation by pronouncing them as /s/ or /d/, as well as The challenge lies in articulating word-final consonant clusters, which consist of the final consonant sound followed by -s or -d were the primary factors that led to the incorrect pronunciation of the phonemes of the two morphemes.

Table 2. students' mean mispronunciation percentages for the morphemes -s and -ed in plural, simple present, and past tense suffixes.

| -s | | | -ed | | |
|---|---|---|---|---|---|
| **/s/ or /z/** | **/ɪz/** | **Total mistakes** | **/t/ or /d/** | **/ɪd/** | **Total mistakes** |
| 14 % | 16% | 15% | 65% | 8% | 36.5% |

The mean percentages of all speakers' inappropriate pronunciation of consonant clusters in initial and final position of words are presented in Table 3, which can be found here. The participants' mispronouncing word-final clusters (mistakes percentage = 47.97%) are significantly higher than their mispronunciation of word-initial clusters (mistakes percentage = 11.58%), as was previously mentioned. They also made a significantly greater number of mistakes when pronouncing clusters of three and four consonants compared to clusters of two consonants. It may be deduced from this that the difficulty of pronouncing these clusters increases in proportion to the number of consonants associated with them. When it came to pronouncing the two-consonant clusters in the word-initial position, the participants made the fewest mistakes (mistake percentage = 0.83%). According to Al-Saidat (2010), this might be regarded as a result where their Arabic dialect permits a variety of this consonant cluster type that are permissible at the beginning of the syllable. However, the highest number of mistakes, are found in the pronunciation of the clusters of four and three consonants in the final position of the word (the percentage of mistakes for these clusters is 83.75% and 51.25%, respectively). Because such cluster combinations have appeared in Arabic, this is one of the main reasons for it.

*Table 3.* Students' mean percentages of mispronunciation of consonant clusters at the initial and final position of words

| Initial Clusters | | | Final Clusters | | | |
|---|---|---|---|---|---|---|
| **CC.** | **CCC.** | **Total mistakes** | **CC.** | **CCC.** | **CCCC.** | **Total mistakes** |
| 0.84% | 22.33% | 11.58% | 11.00% | 50.26% | 82.65% | 47.97% |

When the authors were analysing the mistakes made by the participants, they discovered that a significant number of them utilised two processes in their articulation of consonant clusters. The processes were (1st) the insertion of vowels and (2nd) the deletion of consonants. Under certain circumstances, the individuals who took part where a short vowel was included in the study. To give one example, they uttered the word incorrectly "strap" /stræp/ as [sɪtræp] or[stɪræp], and they mispronounced the word "terms" /tərmz/ as [tərmɪz] or [tərʃmz]. Two vowels were introduced into the word "against" [əgenst], which was pronounced incorrectly as [əgenɪsɪt]. This was the only instance in which this occurred. Regarding the deletion of consonants, it was observed that the speakers decreased the cluster by removing the consonants, one or two of them that were included in it. It is possible for the deletion to take place in the medial consonant(s), such as when "twelfths" (/twelfθs/) is reduced to [twelfɪθs] or [twelfs], or after the inflectional suffix has been removed from the final consonant or consonants, as in the case of pronouncing "cards" /kɑ:dz/ as [kɑ:rdɪz] or [kɑ:rd].

### 4.2 Phonetic Mispronunciations of Consonants by Students with Varying Levels of English Proficiency

The second study question aimed to investigate the extent to which the level of English competence of learners may have an impact on the pronunciation mistakes they make with consonants. Thus, so as give a

response to this inquiry, the authors conducted a comparison of the consonant pronunciation mistakes that were produced by students who had an intermediate level of English language proficiency (I. learners) and those who had a lower-intermediate level (L.I. learners). The following table provides the percentages of the mistakes that were made when they were articulating the ten consonants that were difficult. According to the data presented in the table, students who were at a lower intermediate level had a higher or equivalent percentage of mistakes in their pronunciation of the ten challenging consonant sounds compared to students who were at an intermediate level. There were only a few uncommon cases in which students at the intermediate level showed greater percent mistake frequencies were when they were uttering the phoneme /v/ uttered in the final position, while the phoneme /g/ uttered at the initial position of the word. It's possible that this can be attributed to certain pronunciation habits that some of students in this group have formed. Another thing that is remarkable is the difference in the percentage of mistakes that the two groups made when they were pronouncing the ten sounds in the three different places. The variance of the mistakes that were made by both groups is often bigger in the initial position than it is in the medial and final position of words, as was mentioned before.

Table 4. *Percentages of lower-intermediate (L.I.) and intermediate (I.) speakers' pronunciation mistakes for the 10 challenging consonant sounds*

| Challenging consonant | Initial | | Medial | | Final | | All positions | |
|---|---|---|---|---|---|---|---|---|
| | L.-I. S. % | I. S. % | L.I. S. % | I. S. % | L-I. S. % | I. S. % | L-I. S. % | I. S. % |
| /ʒ/ | -- | -- | 81.5 | 53.5 | 88 | 70 | 84.75 | 61.75 |
| /ŋ/ | -- | -- | -- | -- | 69 | 81 | 69 | 81 |
| /p/ | 60 | 53 | 72 | 70 | 85 | 85 | 72.3 | 69.3 |
| /ɹ/ | 58 | 34 | 72 | 73 | 85 | 87 | 71.66 | 64.66 |
| /ð/ | 33 | 8 | 16 | 10 | 30 | 0 | 26.33 | 6 |
| /ʧ/ | 25 | 34 | 51 | 9 | 17 | 79 | 31 | 40.66 |
| /v/ | 9 | 17 | 19 | 4 | 12 | 4 | 13.33 | 8.33 |
| /θ/ | 40 | 10 | 0 | 4 | 0 | 4 | 13.33 | 6 |
| /g/ | 30 | 15 | 24 | 6 | 30 | 0 | 28 | 7 |
| /l/ | 26 | 20 | 26 | 4 | 9 | 15 | 20.33 | 13 |

Additionally, the students who were in the lower-intermediate level produced a greater number of mistakes in their articulation of the regular morphemes -s and -ed than the learners who were in the intermediate level. This category of consonant sounds is broken down into two groups, and the percentages of the mistakes that each group made are presented in Table 5. According to the data presented in the table, it is evident that the learners who were at the lower-intermediate level, with the exception of those who were at the intermediate level, exhibited higher or equal percent frequencies of mistakes in the other morpheme articulation choices. These include /s/ or /z/, /t/ or /d/, and /ɪd/. Additionally, it is important to note that there is just a slight variance between both groups in terms of the percentage of times they pronounce this consonant type incorrectly.

*Table 5. Lower-intermediate and intermediate learners' percentage of mistakes in pronunciation of the morphemes -s and -ed*

| | -s | | | -ed | | |
|---|---|---|---|---|---|---|
| | **/s/ or /z/** | **/ɪz/** | **Total mistakes** | **/t/ or /d/** | **/ɪd/** | **Total mistakes** |
| L.I.s. | 14 % | 16% | **15%** | 65% | 8% | **36.5%** |
| I.s. | 8.5 | 22.25% | **15.4%** | 60% | 9% | **34.5%** |

Regarding the mistakes that were made by both groups when it came to the pronunciation of initial and final consonant formations. Based on the data presented in the table, it can be observed that learners with lower intermediate levels had higher mistake. percent rates compared to those with intermediate levels when it came to pronouncing all five types of consonant clusters. In the table, there are two issues that are significant. To begin, both groups made more mistakes when pronouncing clusters of three and four consonants than they did when pronouncing clusters of two consonants, and they made more mistakes while final clusters were more difficult for them to pronounce than initial clusters. Second, the variance in the percent frequency of mistakes that are made between both groups is much higher in final clusters than it is in initial clusters of words.

Table 6. *Lower-intermediate and intermediate learners' initial and final position of consonant cluster pronunciation mistakes.*

| | Initial Cluster | | | Final Cluster | | | |
|---|---|---|---|---|---|---|---|
| | **CC** | **CCC** | **Total mistakes** | **CC** | **CCC** | **CCCC** | **Total mistakes** |
| L.I.s. | 1.75% | 24 % | 12.87% | 14.00% | 63.50% | 89 % | 55.50% |
| I.s. | 2% | 20.67 | 11.88 | 6% | 39% | 78.50% | 41.16% |

## 5. Discussion and Conclusion

The results of this study have offered additional data regarding the challenges that Iraqi students of English as a foreign language face while attempting to pronounce certain consonant sounds and clusters in English. According to the findings of the study, individuals tend to make several mistakes while pronouncing as follows: /ʒ/, /ŋ/, /p/, /ɹ/, and /ʧ/; /t/ and /d/ of the past morpheme -ed; and the clusters of consonants with four and three consonants. The findings also suggest that the placement of certain consonant phonemes and clusters inside the words is a important factor in the extent of the difficulty associated with pronouncing those consonants and clusters. For instance, it was observed that there were a greater number of mistakes made in the pronunciation of the following: /p/ and /ɹ/ in medial and final position; /ʒ/, /ð/, and /l/ in final position; /ʧ/, /v/, and /θ/ in initial position of word; and final consonant clusters. Hence, the findings indicate that the presence of a greater number of consonants in the initial and end positions of a word is more likely to result in issues with pronunciation than the presence of consonants in the medial position of the word. According to the results of the research, the level of English proficiency of the learners had a significant impact on the number of consonant pronunciation mistakes they made. When it came to pronouncing the majority of words, the students who were in lower intermediate made more mistakes than those who were in intermediate. those clusters and sounds that are consonant. As was mentioned, the difference in the percentage of mistakes that were produced by both groups when uttering the ten challenging sounds is typically greater in the initial position of words than it is in the medial and final positions.

The current research supports the CAH and supports previous findings that Arab and Iraqi English students have difficulties pronouncing certain consonant sounds and clusters. However, the fact that the

degree of difficulty and The sequence of phoneme difficulties The relative difficulty of each sound differs throughout different studies. Arabic, in contrast to English, does not include a large diversity of consonant clusters; hence, it is expected that many syllables in English will be challenging for Arab students to acquire. It is possible to claim, in light of these findings that are consistent with one another, that the majority of the pronunciation mistakes that were produced by the speakers were the result of the effect of their first language phonological system. In addition, Students challenged with the types of consonant clusters that are not commonly used in Arabic. This was because of the phonological variations between the two languages. This substantial influence of L1 is in reverse related to language proficiency level, the degree of linguistic competency, which is the second component of challenges in pronunciation that is examined in this study. Ammar & Alhumaid (2009) suggest that this is the case. These findings are in agreement with the findings of the earlier study conducted by Sadah (2011), VaroI (2012), and Al-Jasser (1978), which were reported together. Krashen's (1985) Input Hypothesis provides more support for the function that proper input or learning experience serves in the learning process.

The absence of consciousness raising is a third component that was found to be responsible for the difficulties in pronunciation that were observed. In the case of the participants' articulation of the morphemes -s and -ed, this may be considered the primary reason for the mispronunciations that they made. If the students had been provided with certain activities that targeted improving their knowledge of such pronunciation rules or guidelines, it is believed that they would have been able to avoid making the mistakes that they did. This is due to the fact that there are rules that can be learned in order to master the pronunciation of these two morphemes.

Taking into consideration the empirical evidence that was presented in the present research as well as past research that is connected to the topic, it is necessary to Arabic students in general and Iraqi in particular will benefit from future training in English consonant articulation. To be more specific, teachers who provide and create such training should know that consonant phonemes and clusters are easier or challenging for their learners, as well as the word-position and learner level affect articulation. The phonological systems of English and Arabic are distinct from one another, and teachers should be aware of these distinctions of the factors that may cause articulation challenges for their students. It is also important to make use of computer-aided articulation training (CAAT), as a result of which learners receive numerous advantages of English as a second language and English as a foreign language. Among these advantages is the provision of a comfortable and stress-free learning environment that is replete with a limitless supply of educational materials, performing practice that is both personalised and independent, and receiving immediate feedback. Additionally, students receive instruction in the pronunciation features that are related t

It is necessary to conduct additional studies in order to give support for the information that was presented in the current study as well as the prior studies regarding the difficulty that Arab students have in pronouncing English consonants. In light of the fact that Through the use of word lists, the speakers in this study were tested for their ability to articulate their words, it is possible that future research will investigate the same issue by employing different methods, such as sentence reading and spontaneous speaking. It is also possible for future research to investigate the challenges in pronouncing English consonants that are experienced by male students attending universities in Iraq, as well as by Iraqi students attending pre-university or students who come from different Arab backgrounds. In point of fact, this would be helpful in investigating the influence of characteristics, for example gender, linguistic input, and age on the acquisition of a second language on difficulty in pronouncing consonants. Another significant matter that warrants more investigation is the connection that exists between the perception of consonants and their articulation. Last but not least, it will be interesting to investigate. the efficiency of courses that make use of a variety of training therapies to improve the pronunciation of English consonants by Arab learners.

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# Appendix

## The Pronunciation Test for English Consonants

***A- Words that are listed below should be read out, please.***

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | linguistics | pass | cappy | strop | raft | floor |
| 2. | hose | valley | valiant | cover | wonder | live |
| 3. | red | gale | neglected | big | glass | aggressive |
| 4. | amplification | vogue | langrage | barge | ton | skit |
| 5. | land | cheap | mature | touch | blond | parch |
| 6. | peril | riding | bringing | clink | block | Thanking |
| 7. | sell | ran | dram | redden | pottage | cars |
| 8. | fat | than | bathe | bath | freezer | things |
| 9. | leather | there | skill | thirsty | widow | Other |
| 10. | fun | lag | balding | taproot | bell | classes |

B- ***Words that are listed below should be read out, please***

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | rats | bank | blips | slaps | verts | England |
| 2. | vans | bountiful | wolves | passalongs | clears | food |
| 3. | pushes | loaf | bases | matches | churches | gardener |

***C- Words that are listed below should be read out, please***

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | chumped | luck | passed | marked | drink | pitched |
| 2. | posed | landed | rent | planed | clap | loved |
| 3. | aided | painted | hate | noted | excided | pray |

C- ***Words that are listed below should be read out, please***

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | drunk | enjoy | printer | greenhouse | pen | stream |
| 2. | dell | spry | start | flour | clad | hotel |
| 3. | insects | see | comp | ferniest | trams | folks |
| 4. | bursts | cuffs | baths | dresses | cords | prompts |