



Investigating the Iraqi EFL Students' Recognition and Production of English Consonant Sequences

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ABSTRACT

. English allows for consonant sequences at the beginning of words, which poses a challenge for speakers of other languages, especially those whose native languages do not contain such sequences, such as Arabic. Therefore, this study aims to investigate students' recognition and production of initial consecutive consonants in relation to gender, and the significance of the statistical differences between students in recognition and pronunciation of consecutive consonants. Consequently, a cohort of fifty-two Iraqi college students (18 males and 34 females) were selected as a sample. A multiple-choice test of two phases was used as a research instrument. The results showed that females outperformed males in recognizing and producing consonant sequences. Notably, the findings revealed that students' performance in recognizing initial consonant sequences was significantly higher than their performance in producing. In addition, the results indicate statistically significant differences in favor of females in both recognition and pronunciation. The study's findings highlight the importance of focusing on both recognition and production in educational contexts and developing teaching strategies that support both skills. Finally, the research reveals how students' linguistic background, such as the absence of initial consonant sequences in Arabic, can impact their performance in English.

Keywords: : English Consonant Sequences, gender, Iraqi EFL students, production, recognition



استقصاء تمييز ونطق طلبة الكليات العراقية متعلمي اللغة الإنكليزية لغة أجنبية لتسلسلات الأصوات الإنكليزية الصحيحة

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المخلص:

تسمح اللغة الإنكليزية بتتابع الحروف الساكنة في بداية الكلمات، وهو ما يشكل تحدياً لمتحدثي اللغات الأخرى، وخاصة أولئك الذين لا تحتوي لغتهم الأم على مثل هذه التتابعات، مثل اللغة العربية. لذلك، تهدف هذه الدراسة إلى التحقيق في قدرة الطلبة على تمييز وإنتاج التتابعات الساكنة الأولية تبعاً لمتغير الجنس، وأهمية الفروق الإحصائية بين الطلبة في تمييز ونطق هذه التتابعات. وبناءً على ذلك، تم اختيار عينة مكونة من اثنين وخمسين طالباً عراقياً في المرحلة الجامعية (18 ذكراً و34 أنثى). إذ استُخدم اختبار متعدد الخيارات بمرحلتين كأداة بحثية. أظهرت النتائج أن الإناث تفوقن على الذكور في تمييز وإنتاج التتابعات الساكنة الأولية. ومن الجدير بالذكر أن النتائج كشفت أن أداء الطلبة في التعرف على التتابعات الساكنة الأولية كان أعلى بشكل ملحوظ من أدائهم في الإنتاج. بالإضافة إلى ذلك، تشير النتائج إلى وجود فروق ذات دلالة إحصائية لصالح الإناث في كل من التعرف والإنتاج. وتبرز نتائج الدراسة أهمية التركيز على كل من التعرف والإنتاج في السياقات التعليمية وتطوير استراتيجيات تدريسية تدعم كلا المهارتين. وأخيراً، تكشف الدراسة كيف يمكن أن تؤثر الخلفية اللغوية للطلبة، مثل غياب التتابعات الساكنة الأولية في اللغة العربية، على أدائهم في اللغة الإنكليزية.

الكلمات المفتاحية: التتابعات الساكنة في اللغة الإنكليزية، الجنس، الطلبة العراقيون متعلمو اللغة الإنكليزية لغة أجنبية، الإنتاج، التمييز

Abstract

English allows for consonant sequences at the beginning of words, which poses a challenge for speakers of other languages, especially those whose native languages do not contain such sequences, such as Arabic. Therefore, this study aims to investigate students' recognition and production of initial consecutive consonants in relation to gender, and the significance of the statistical differences between students in recognition and pronunciation of consecutive consonants. Consequently, a cohort of fifty-two Iraqi college students (18 males and 34 females) were selected as a sample. A multiple-choice test of two phases was used as a research instrument. The results showed that females outperformed males in recognizing and producing consonant sequences. Notably, the findings revealed that students' performance in recognizing initial consonant sequences was significantly higher than their performance in producing. In addition, the results indicate statistically significant differences in favor of females in both recognition and pronunciation. The study's findings highlight the importance of focusing on both recognition and production in educational contexts and developing teaching strategies that support both skills. Finally, the research reveals how students' linguistic background, such as the absence of initial consonant sequences in Arabic, can impact their performance in English. Keywords: English Consonant Sequences, gender, Iraqi EFL students, production, recognition

1. Introduction

Consonant clusters are sequences of adjacent consonant sounds (Crystal,1992). They can occur initially or finally in syllables. There are certain phonetic rules that govern the way they are formed (Pearce,2007). For example, the one-syllable word *plant* has an initial consonant sequence /pl-/ and a final consonant sequence /-nt/. The English language permits initial sequences of either two or three consonants as in *play* and *pray* (Catford, 1988). The syllable structure with a two-item initial consonant sequence can consist of two consonants followed by a vowel (CCV) as in *try* /traɪ/. The structure with a three-item initial consonant sequence can be (CCCV) as in *spry*//spreɪ/(Recasens,2018). English permits from 33 to 46 two-item initial consonant clusters, such as *play* /pleɪ/ and only nine three-item initial consonant clusters, as in *screen* /skri:n/ (Pearce,2007). Speakers of languages with many consonant sequences will not have any difficulty in pronouncing most of the English sequences. Speakers of languages with no consonant sequences at all or with very few ones or very short ones may have difficulty in stringing together two-item, three-item or four-item consonant sequences with no vowel between them(O'Connor,1980). Standard Arabic has no initial or medial consonant clusters. It has only two-item final consonant clusters, particularly in monosyllabic words such as /rəsm/ (drawing), (Al-Ani,1970). Arabic permits two medial consonant clusters or two final consonant clusters, whereas English allows initial clusters of two or three consonants and final clusters of four consonants with severe constraints on the possible consonant sequences. For example, three-item and four-item consonant clusters always include /s/(Trask,1996).

2. The problem of the study:

Iraqi EFL students face difficulty recognizing and producing English consonant sequences, specifically initial consonants. This challenge is rooted in the phonological differences between Arabic and English, as Arabic lacks some consonant sequences, particularly at the beginning of words, which hinders learners to recognize and pronounce these sequences accurately. Furthermore, the study addresses the observed discrepancy between students' high recognition skills and low production (pronunciation) of these consonant sequences, putting their overall pronunciation proficiency to the test.

3. Value of the study

The study value lies in promoting a better concept of the challenges faced by Iraqi EFL learners in mastering English consonant sequences, which represent key elements of accurate recognition and pronunciation in English. Based on the identification of gender differences and the discrepancy between recognition and production skills, the study offers a valuable insight and methodological approach that sheds light on specific phonetic barriers rooted in the native Arabic sound system and proposes specific solutions like teaching strategies, pronunciation training, and curriculum development. This may guide teachers and linguists in designing more effective teaching methods and

curricula to improve learners' pronunciation proficiency and overall communicative competence in English.

4. Theoretical background

English consonant clusters are classified by O'Connor (1980) according to position into initial, medial and final sequences. The study is concerned with the initial ones that are divided into sequences of two consonants and sequences of three consonants. The two-item initial consonant clusters are of two types. The first is /s/ followed by one of /p,k,t,f,m,n,j,w,l/ as in spy /spaɪ/, sky /skaɪ/, stay /steɪ/, sphere /sfiə/, small /smɔ:l/, snow /snəʊ/. In the second type, one of /p,b,t,d,k,g,f,θ,v,ʃ,m,n,h/ is followed by one of /j,w,l,r/. But some of them do not occur, e.g. /pw,dl/. Sequences of three consonants initially are /spr,str,skr,spj,stj,skj,spl,skw/ as in spread /spred/, straight /streɪt/, screw /skru:/, stupid /stju:pid/, skewer /skjuə/, splendid /splendid/, square /skweə/.

On the other hand, consonant clusters can also be classified according to sonority, the distinctness of speech sounds, into two types: rising consonant clusters and falling consonant clusters. The first type occurs at the beginning of words and syllables in drink and three, whereas the second consonant is more sonorant than the first. The second type occurs at the end of words and syllables (Trask, 1996). In other words, onset consonant clusters are rising ones. Some clusters are easy to pronounce in the onsets and difficult in the codas, whereas some are easy to pronounce in the coda and difficult in the onset (McMahon, 2002).

As for the syllable structure, the indispensable element in the syllable is a vowel, which is the nucleus. What comes before it is called the onset. What comes after it is called termination. Both can consist of one or more consonants. Onset consonant clusters can consist of two or three consonants (Forel and Puskas, 2005). There are phonological rules governing the construction of syllables. English permits both onset consonant clusters and coda consonant clusters, whereas standard Arabic does not allow onset consonant clusters (Alotaibi, 2021).

As for the process consonant cluster simplification, Recasens (2018) points out that coda consonants are shortened more than onset consonants. The process involves at least eliding or dropping one consonant in a sequence of adjacent consonants. Some English speakers tend to simplify longer clusters by eliminating some of the consonants. For example, asked may be pronounced as /æst/ instead of /æskt/ where /k/ is dropped (Catford, 1988).

According to Crystal (2008), epenthesis refers to a type of intrusion where an extra sound is inserted in a word. There are two types of epenthesis: anaptyxis (an additional vowel is inserted between two consonants) and prothesis (an extra sound is inserted initially in a word).

A recent experiment has found that consonants should be compressed when they occur in the onset clusters to fit in (Kim, 2006). A question may arise: Do Iraqi EFL students' perception of English initial

consonant sequences (also called clusters and blends) influence the duration of their production? In another way, do they shorten these clusters by deleting sounds or lengthen them by inserting sounds that are not found within them? In fact, standard Arabic has no initial consonant clusters, and the only sequence is an initial two-consonant cluster in monosyllabic words, such as /ism/ (Al-Ani, 1970). This fact raises another question: Which sequences of the 33 initial types are recognised and produced better by Iraqi EFL students: the two-consonant sequences or the three-consonant sequences? Al-khalsi (2001) claims that spoken Iraqi Arabic allows some onset consonant clusters, as in /hna/, (here). Does this make it easier for the students to pronounce certain English onset consonant clusters? O'Connor (1980) suggests that speakers of some languages have many consonant sequences and, accordingly, they will have no difficulty in pronouncing most of the English sequences.

5. Objectives

To answer the previous questions and more, the researchers of this study have developed five objectives to identify:

1. The students' recognition of consecutive consonants in relation to gender.
2. The students' pronunciation (production) of consecutive consonants in relation to gender.
3. The significance of statistical differences in students' recognition of consecutive consonants in relation to gender.
4. The significance of statistical differences in students' pronunciation (production) of consecutive consonants in relation to gender.
5. The significance of statistical differences between students in their recognition and pronunciation of consecutive consonants.

6. Methodology

6.1 Sample and Data Collection Tools

To fulfil the study aims, 52 (18 males and 34 females) Iraqi EFL seniors, who are studying English at the College of Languages in the English department, were selected to represent the study sample. The researchers designed a two-phase test of multiple-choice questions. Notably, there are various places where the students may insert an additional vowel into the sequences under discussion. Nearly all possibilities are taken into consideration when the two-phase test is designed. Therefore, each student receives a test paper containing 33 multiple-choice items with different numbers of choices.

Meanwhile, the sample members listen to an audio recording of the questions and then tick the correct answer as they recognize it.

A test paper with 33 multiple-choice questions is used in the second phase. The students were asked to choose what they really use. These choices represent five transcripts, one correct and four incorrect. Based on how they pronounce it, students were asked to choose the right transcript. The researchers

designed the test using many examples from O'Connor's Better English Pronunciation textbook (1980) that the students had not previously examined. The test was conducted in the college's sound laboratories within a day for each part.

6.2 Data Analysis

In processing the research data, the researchers used different statistical methods, including the arithmetic mean, standard deviation (SD), and T-test for one and two independent samples, using the SPSS package program.

6.2.1 Face validity

Kidder (1987:132) believes that face validity is the best way to ensure scale validity. Therefore, the scale was submitted in its initial form to a group of 12 experts from the Faculties of Languages, Education and Statistics and Measurement, who are professors in linguistics and teaching methodology, to take their opinions into account. Consequently, to determine the statistical significance of the experts' approval of the tool, the Chi-Square test was used, and the results are shown in Table (1) :

Table (1) Results of the Chi-Square values to ensure face validity of the scale for identifying the level of recognizing and pronouncing of English Consonant Sequences.

Experts		Chi-square value		Statistical significance
agree	Disagree	Calculated	tabular	
11	1	8.332	3.84	Significant

This result indicates that the current research tool has a high degree of reliability.

6.2.2 Reliability

To verify the reliability of the scale, Cronbach's alpha coefficient was used to measure internal consistency. The aim of finding the reliability coefficient in this way is to ensure the consistency of the individual's performance across the scale from one item to another, as it indicates the overall consistency of the scale items and the stability of individuals' responses. The more consistency the content of the scale is, the higher the internal consistency reliability will be (Nannally, 1978:230). The stability coefficient calculated using this method was 0.874, which is considered a good stability coefficient.

7. Results

1. To identify the students' recognition of consecutive consonant sequences in relation to gender.

To achieve this aim, a one-sample T-test was used to determine the statistical significance of the differences between the arithmetic mean (AM) of the sample individuals' scores and the hypothetical mean (HM) of the consecutive consonants' recognition test. The results are shown in Table (2) below.

Table (2) Results of a one-sample T-test to identify the students' recognition of consecutive consonants in relation to gender.

Scale	variables	No .	AM	SD	HM	T value		Significance level	Statistical significance
						Calculated	Tabular		
The students' recognition of consecutive consonants	Males	18	20,666	8,102	16,5	2,182	2,101	0,05	Nonsignificant
	Females	34	26,823	5,362		11,225	2,042	0,05	In favour of the sample mean
	Total	52	25,423	6,846		9,398	2,000	0,05	In favour of the sample mean

According to the data in the table (2) above, the results show that female students outperformed males in recognizing consecutive consonant sequences at a high level, as shown in figure (1). Overall, the entire sample group demonstrated an elevated ability to recognize consonants sequences.

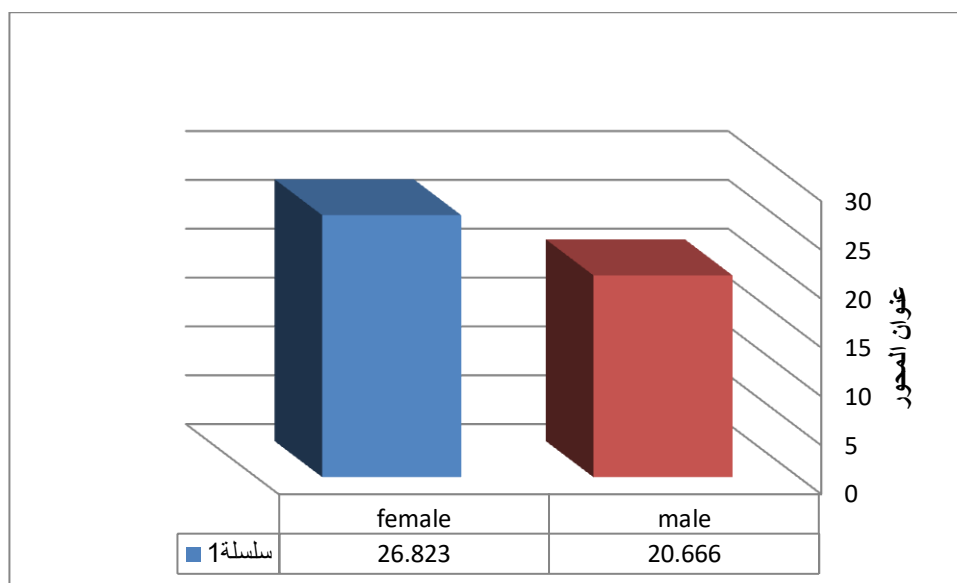


Figure (1) illustrates the differences in the level of recognizing of the consonant sequences between males and females.

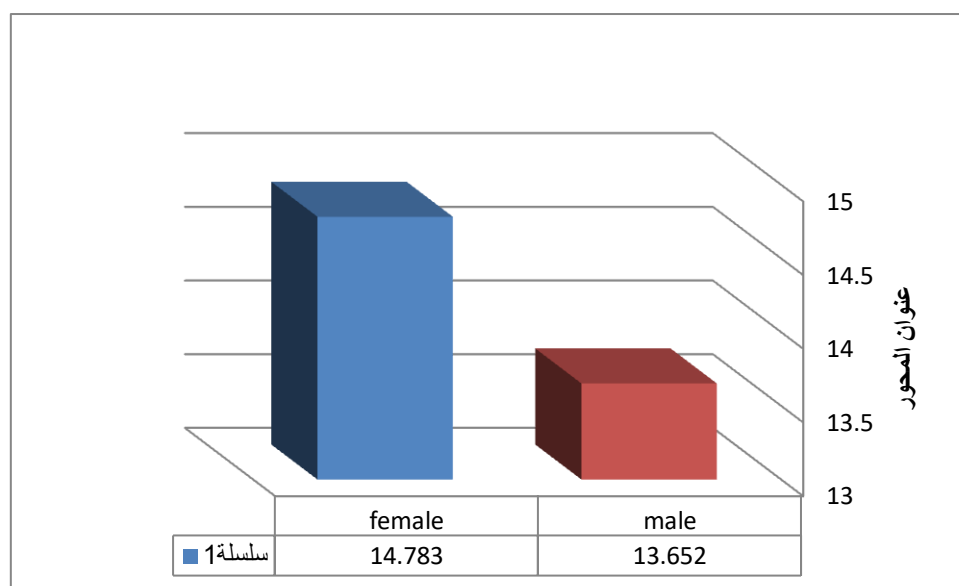
2. To identify the students' pronunciation (production) of consecutive consonant sequences in relation to gender.

A single-sample T-test was used to determine the statistical significance of the differences between the arithmetic mean of the sample individuals' scores and the hypothetical mean of the pronunciation test. The results are shown in table (3) below.

Table (3) Results of a one-sample T-test to identify the students’ production of consecutive consonants in relation to gender.

Scale	Variables	No	AM	SD	HM	T value		Significance level	Statistical significance
						Calculated	Tabular		
The students’ pronunciation (production) of consecutive consonants	Males	18	13.652	5.201	16,5	2.323	2,101	0,05	In favour of the hypothetical mean
	Females	34	14.783	4.332		2.310	2,042	0,05	In favour of the hypothetical mean
	Total	52	14.217	5.362		3.072	2,000	0,05	In favour of the hypothetical mean

The results of the table (3) above show that students in general (males and females) have a low level of pronunciation of consecutive consonant sequences, as shown in figure (2).



Figure(2) illustrates the differences in the level of production of the consonants between males and females.

3. The significance of statistical differences in students’ recognition of consecutive consonant sequences in relation to gender

To achieve this aim, a T-test for two independent samples was used to determine the significance of the statistical differences of the arithmetic means of the sample members on the recognition of consecutive consonants test. The results were as shown in Table (4)

Table (4) Results of a two-sample T-test to identify the significance of statistical differences in students' recognition of consecutive consonant sequences in relation to gender.

Scale	Gender	No.	AM	SD	T value		Significance level	Statistical significance
					Calculated	Tabular		
students' recognition of consecutive consonant sequences	males	18	20,666	8,102	3,287	2,000	0,05	In favour of the females
	females	34	26,823	5,362				

The results of the table (4) above indicate that the level of female students' recognition of consecutive consonant sequences is higher than that of male students.

4. The significance of statistical differences in students' pronunciation (production) of consecutive consonant sequences in relation to gender

To meet this goal, a t-test for two independent samples was used to identify the statistical significance of the differences in the arithmetic means of the scores of males and females on the production of consecutive consonant sequences. The results are shown in the table (5).

Table (5) Results of the T-test for two independent samples to determine the significance of differences in students' pronunciation in relation to gender.

Scale	Gender	No.	AM	SD	T value		Significance level	Statistical significance
					Calculated	Tabular		
students' pronunciation (production) of consecutive consonant sequences	Males	18	13.652	5.201	0.177	2,000	0,05	Nonsignificant
	Females	34	14.783	4.332				

It is clear from the results of the table (5) above that there are no statistically significant differences in the level of pronunciation of consecutive consonant sequences between male and female students.

5. The significance of statistical differences between students in their recognition and pronunciation of consecutive consonant sequences

A T-test was used for two independent samples to determine the significance of the statistical differences between the arithmetic means of the sample members' scores on the recognition and pronunciation of consecutive consonant sequences. The results are shown in table (6).

Table (6) Results of the T-test for two independent samples to determine the significance of differences in students' recognition and pronunciation of consecutive consonant sequences.

Scale	No.	AM	SD	T-value		Significance level	Statistical significance
				Calculated	Tabular		
Recognition	52	25,423	6,846	9.299	2,000	0,05	In favor of the recognition test
Pronunciation	52	14.217	5.362				

The results of the table (6) above show that the students' skill in recognition of consecutive consonant sequences is higher than their pronunciation.

8. Discussion of results

To identify the students' recognition of consecutive consonant sequences in relation to gender, the results reveal that female students showed a higher level of recognition of consecutive consonant sequences than their male counterparts. Female students had an arithmetic mean (AM) of 26.823 with a standard deviation (SD) of 5.362, whereas males had an arithmetic mean (AM) of 20.666 with an SD of 8.102, demonstrating a clear gap in their abilities. Many factors, like culture and social aspects, have a positive impact on females' proficiency, particularly in learning languages (Chan, 2018; Iqbal & Yongbing, 2017). Some cultures contribute to a societal push for females to master languages, which may not be prevalent among male students. Females generally show higher intrinsic motivation and proficiency in learning English language than males (Bećirović, 2017). Additionally, divergences in cognitive processing and learning strategies between males and females can also play a critical role in this observed variance. Research like (Baker, 2012; Swain, 2000) has indicated that females often benefit from collaborative and communicative approaches to language learning, which may enhance their ability to recognize and produce sounds.

On the other hand, to identify the students' pronunciation (production) of consecutive consonant sequences in relation to gender, the T-value was calculated at 0.177 for both genders, which leads to non-significant results at the 0.05 level, meaning that the variations in pronunciation of consecutive consonant sequences between male and female students were not statistically significant. The low mean scores for both genders indicate that Iraqi EFL students struggle in pronouncing English consecutive consonant sequences properly. The reasons behind this difficulty are mainly due to their linguistic background, particularly the phonological constraints of Arabic. The Arabic language restricts consonant sequences, especially in onset positions, which are common in English but absent

in Arabic, forming a considerable challenge for learners. Therefore, Arabic speakers tend to distort or simplify English consonant sequences by deleting or adding vowels or substituting unfamiliar sounds. Studies like (Al-Rubaat, A. & Alshammari, H., 2019; Al-Zoubi, 2019; Mahdi, S., 2024;) have shown that Arab students often mispronounce consonants such as /p/, /z/, and /ɪ/, as well as sequences of three or four consonants, due to their absence or variation in usage in Arabic. However, the lack of important pronunciation skills, such as authentic listening materials and interaction with native speakers (Hoque, M. & others, 2024) hinders the students from developing accurate pronunciation skills and practicing consecutive consonant sequences appropriately.

In terms of the significance of statistical differences in students' recognition of consecutive consonant sequences in relation to gender, the findings showed a notable difference in performance between males and females, which means that females overall have a superior ability to distinguish sequences of consecutive consonants compared to males, indicating a gender-specific advantage in perceiving or identifying these sequences. However, the absence of a significant gender disparity in the production of consecutive consonant sequences aligns with Flege (1995) findings, which indicate that gender does not significantly influence L2 speech production when controlling age and exposure. While women may excel in recognition and comprehension, pronunciation accuracy frequently exhibits minimal variation between genders. This may be attributed to pronunciation being more contingent on practice and auditory training, which both genders can attain equally through adequate exposure.

Finally, the computed t-value of (9.299) for both recognition and pronunciation considerably exceeds the tabulated t-value of (2.000) at a (0.05) significance level, indicating that students' ability to recognize consonant sequences is statistically superior to their pronunciation skill. These findings point out that while Iraqi EFL students may recognize English consonant sequences upon hearing them, they encounter considerable difficulties in generating these sounds correctly. This discrepancy between recognition and pronunciation can be attributed to the phonological structure of the native language, which lacks analogous consonant sequences, hence complicating articulation.

9. Conclusion

The study concludes that recognising and producing English consonant sequences present serious obstacles for Iraqi learners of English as a foreign language. The phonological constraints in their mother tongue, especially the absence of initial consonant sequences and a preference for simple consonant arrangements, contribute to this difficulty, leading to simplification or distortion of English sequences during production, alongside other challenges such as the lack of important pronunciation

skills and interacting with native speakers. The results reveal a significant gender difference in recognition abilities, with females outperforming males, which may reflect cultural, social, and cognitive elements, despite the absence of gender differences in pronunciation skills. Furthermore, the findings uncovered the need for understanding the influence of native language phonetics on English consonant sequences to develop effective teaching methodologies.

10. Recommendations

In accordance with the findings of the study on Iraqi EFL students' recognition and production of English consonant sequences, the following recommendations and ideas for further research can be proposed:

1. The results of the study showed a pressing need for focused voice training sessions aimed at improving recognition and production of English consonant sequences. This could include the use of auditory discrimination exercises, expression practice, and contextual training that emphasises consonant sequences.
2. Teachers should incorporate phonological awareness activities and pronunciation practice designed for Arabic-speaking learners to facilitate their mastery of English consonant sequences
3. Emphasise the use of cooperative and communicative learning methods in language teaching. Teachers can facilitate group activities that promote interaction and support among peers; these methods can enhance the overall learning environment for all students.
4. Use targeted pedagogical strategies that focus on phonetic training and exposure to English consonant clusters to bridge the gap between recognition and production, ultimately enhancing English pronunciation skills in general.
5. Teachers are invited to maintain regular preliminary assessments and feedback mechanisms to follow students' progress in recognizing and producing consonant sequences. This can direct educational strategies and help identify students who may need additional support.

References

- Alotaibi, A. N. (2021). Phonological constraints on the utterance of L2 clusters by Saudi ESL learners. *Arab World English Journal*, 12(4), 551–559.
<https://dx.doi.org/10.24093/awej/vol12no4.36>.

- Al-Rubaat, A. M., & Alshammari, H. A. (2020). Analysis of phonetic and phonological constraints of Saudi EFL learners. *English Language Teaching*, 13(1), 62-79. <https://doi.org/10.5539/elt.v13n1p62>.
- Al-Zoubi, S. M. (2019). The speech sounds of Arabic language and their effect on learning English pronunciation: A contrastive analysis. Ajloun National University, Jordan.
- Baker, W. (2012). From cultural awareness to intercultural awareness: Culture in ELT. *ELT Journal*, 66(1), 62-70. <https://mldbuletin.wordpress.com/wp-content/uploads/2018/04/article1.pdf>
- Catford, J. C. (1988). A practical introduction to phonetics.
- Chan, J. Y. (2018). Gender and attitudes towards English varieties: Implications for teaching English as a global language. *System*, 76, 62-79. <https://doi.org/10.1016/j.system.2018.04.010>
- Crystal, D. (1992). An encyclopedic dictionary of language and languages. Blackwell.
- Flege, J. E. (1995). Second-language speech learning: Theory, findings, and problems. In W. Strange(Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp.233–277). York Press. https://www.researchgate.net/publication/333815781_Second_language_speech_learning_The_ory_findings_and_problems/citations.
- Hoque, M. S., Oli, L., Selvi, T. M. D., Chowdhury, A. S. M. M. H., & Reza, M. M. (2024). Untangling the Tongues: Exploring Pronunciation Development Strategies for Learners of English at High Schools in Oromia Region of Ethiopia. *World Journal of English Language*, 14(5), 257–290. <https://doi.org/10.5430/wjel.v14n5p257>.
- Mahdi, R. S. (2024). Common pronunciation mistakes in Iraqi speakers of English on social media [Graduation paper, University of Babylon]. College of Education for Human Sciences. https://cdnx.uobabylon.edu.iq/undergrad_projs/4FPX4CNkgU6z0RUrwMX6mw.pdf
- McMahon, A. (2002). An introduction to English phonology. Edinburgh University Press.
- O'Connor, J. D. (1980). *Better English pronunciation* (2nd ed.). Cambridge University Press.
- Pearce, M. (2007). *The Routledge dictionary of English studies*. Routledge.
- Recasens, D. (2018). The production of consonant clusters: Implications for phonology and sound change. Walter De Gruyter.
- Sajid Iqbal, & Liu Yongbing. (2017). INVESTIGATING GENDER INFLUENCE ON LANGUAGE LEARNING BELIEFS. *European Journal of Education Studies*, 3(10). <https://doi.org/10.5281/zenodo.1036276>.

- Swain, M. (2000). The Output Hypothesis and beyond: Mediating Acquisition through Collaborative Dialogue. In J. P. Lantolf (Ed.), Sociocultural Theory and Second Language Learning (pp. 97-114). Oxford: Oxford University Press

<https://www.researchgate.net/publication/284106490> The output hypothesis and beyond Mediating acquisition through collaborative dialogue.

- Trask, R. L. (1996). A dictionary of grammatical terms.

Appendix A

6.

Recognition Test of Consonant Sequences

Q/ listen to the record carefully, then choose the consonant sequence that you believe is correct.

Choose none if there is no sequence heard.

item	Choices	Item	Choices
1. play	A. /pleɪ/ B. /preɪ/ C. /breɪ/ D. None	7. 18. fly	A. /flaɪ/ B. /vlaɪ/ C. None 8.
2. pray	A. /bleɪ/ B. /pleɪ/ C. /breɪ/ D. /preɪ/ E. None	19. from	A. /frəm/ B. /vrəm/ C. None 9.
3. pure	A. /pjʊə/ B. /bjʊə/ C. None	20. few	A. /fjuː/ B. /vjuː/ C. None
4. try	A. /traɪ/ B. /draɪ/ C. None	21. throw	A. /θrəʊ/ B. /ðrəʊ/ C. None
5. twice	1. /θwaɪs/ 2. /twaɪs/ 3. None	22. shriek	A. /ʃrɪk/ B. /zrɪk/ C. None
6. june	A. /tjuːn/ B. /djuːn/ C. None	23. view	A. /fjuː/ B. /vjuː/ C. None
7. climb	A. /kraɪm/ B. /klaɪm/ C. None	24. music	A. /mjuːzɪk/ B. /njuːzɪk/ C. None
8. cry	A. /graɪ/ B. /kraɪ/ C. None	25. new	A. /njuː/ B. /mjuː/ C. /nuː/ D. None
9. quite	A. /kwart/ B. /kvarɪ/ C. /gwart/ D. None	26. huge	A. /hjuːdʒ/ B. /huːdʒ/ C. None 10.

11. blow	A. /bləʊ/ B. /pləʊ/ C. None	27. spread	A. /spred/ B. /sbred/ C. None
12. bread	A. /bləʊ/ B. /pləʊ/ C. None	28. straight	A./streit/ B. /sdreit/ None
13. beauty	A. pred/ B. /bred/ C. /bled/ D. None	29. screw	A. /skru:/ B. /sgru:/ C. /zgru: D. None
14. dress	A. /bju:tɪ/ B. /bju:dɪ/ C. None	30. stupid	A./stju:pɪd/ B. /stu:pɪd/ C. None
15. duty	A. /dres/ B. /tres/ C. None	31. scure	11. A. /skju:ə/ B. /sgju:ə/ C. None
16. glass	A. /dju:tɪ/ B. /tju:tɪ/ C. None	32. splendid	12. A. /splendɪd/ B. /sblendɪd/ C. None 13.
17. green	A. /glɑ:s/ B. /kla:s/ C. None	33. Square	A. /skweə/ B. /sgweə/ C. /zgweə/ D. None
	A. /gri:n/ B. /kri:n/ C. None	14.	

15.

16. Appendix B

Production Test of Consonant Sequences

Q/How do you pronounce these words? Choose the correct answer:

Item	Choice	Item	Choice
1. place	A. /ibleɪs/ B. /bleɪs/ C. /ɪpleɪs/ D. /pleɪs/ E. /pɪleɪs/ F. Others	18. Flag	A. /flæg/ B. /ɪflæg/ C. /ɪvlæg/ D. /fɪlæg/ E. /vlæg/ F. Others
2. Press	A. /pres/ B. /ɪbres/ C. /bres/ D. /ɪpres/ E. /pires/	19. from	A. /frəm/ B. /vrəm/ C. None

	F. Others		
3. Purity	A. /bjʊərətɪ/ B. /pjʊərətɪ/ C. /ɪbjʊərətɪ/ D. /ɪpjʊərətɪ/ E. Others	20. Fuse	A. /fju:z/ B. /ɪfju:z/ C. /ɪvju:z/ D. /vju:z/ E. Others
4. Train	A. /treɪn/ B. /ɪtreɪn/ C. /ɪdreɪn/ D. /dreɪn/ E. /tɪreɪn/ F. Others	21. Three	A. /θri:/ B. /ɪθri:/ C. /vri:/ D. /ɪvri:/ E. Others
5. Twins	A. /twɪnz/ B. /ɪtwɪnz/ C. /dɪwɪnz/ D. /ɪdwɪnz/ E. /tɪwɪnz/	22. Shrubs	A. /ʃrʌbz/ B. /zɪrʌbz/ C. /ɪʃrʌbz/ D. Others
6. Tune	A. /tju:n/ B. /ɪtju:n/ C. /dju:n/ D. /ɪdju:n/ E. Others	23. Views	A. /fju:z/ B. /ɪfju:z/ C. /vju:z/ D. /ɪvju:z/ E. /vu:z/ F. Others
7. Climate	A. /klaɪmət/ B. /ɪklaɪmət/ C. /glɑɪmət/ D. /ɪglɑɪmət/ E. /kɪlɑɪmət/ F. Others	24. Mute	A. /mju:t/ B. /ɪmju:t/ C. /mu:t/ D. /ɲju:t/ E. Others
8. Crane	A. /kreɪn/ B. /ɪkreɪn/ C. /greɪn/ D. /ɪgreɪn/ E. /kɪreɪn/ F. Others	25. News 17.	A. /ɲju:z/ B. /ɲju:z/ C. /nu:z/ D. /mju:z/ E. Others
9. Quick	A. /kwɪk/ B. /ɪkwɪk/ C. /gʊɪk/ D. /ɪgʊɪk/ E. /kɪwɪk/ F. Others	26. Human	A. /hju:mən/ B. /ɪhju:mən/ C. /hu:mən/ D. Others
10. Cute	A. /kju:t/ B. /ɪkju:t/ C. /gju:t/ D. /ɪgju:t/ E. Others	27. Spray	A. /spreɪ/ B. /ɪsprɛɪ/ C. /sɪbreɪ/ D. /sprɛɪ/ E. /ɪsprɛɪ/ F. Others

11. Blue	A. /bilu:/ B. /ɪblu:/ C. /blu:/ D. /plu:/ E. ɪplu: F. others	28. Street	A./stri:t/ B. /ɪstri:t/ C. /sɪtri:t/ D. /sɪdri:t/ E. /sdri:t/ F. Others
12. Bride	A. /braɪd/ B. /ɪbraɪd/ C. /praɪd/ D. /ɪpraɪd/ E. /bɪraɪd/ F. Others	29. Screen	A. /skri:n/ B. /ɪskri:n/ C. /sɪkri:n/ D. /zɡri:n/ E. Others
13. Beautiful	A./ɪbjʊ:tɪfəl/ B./bjʊ:tɪfəl/ C./ɪpju:tɪfəl/ D./pju:tɪfəl/ E. Others	30. Student	A. /stju:dənt/ B. /ɪstju:dənt/ C. /stu:dənt/ D. /sɪtju:dənt/ E. Others
14. Dry	A. /draɪ/ B. /traɪ/ C. /ɪdraɪ/ D. /ɪtraɪ/ E. /dɪraɪ/ F. Others	31. Skew	A. /skju:z/ B. /sɪkju:z/ C. /ɪskju:z/ D. /zɪɡu:z/ E. Others
15. Duke	A. /dju:k/ B. /tju:k/ C. /du:k/ D. /ɪdju:k/ E. Others	32. Split	18. A. /splɪt/ 19. B. /ɪsplɪt/ 20. C. /sɪblɪt/ 21. D. /sɪplɪt/ 22. E. /zplɪt/ 23. F. /zɪplɪt/ 24. G. Others
16. Glide	A. /ɡlaɪd/ B. /ɡɪlaɪd/ C. /klaɪd/ D. /ɪɡlaɪd/ E. Others	33. Squeeze	A. /skwi:z/ B. /ɪskwi:z/ C. /zkwi:z/ D. /ɪzkwi:z/ F. Others
17. Greek	A. /ɡri:k/ B. /ɪɡri:k/ C. /kri:k/ D. /ɪkri:k/ E. /ɡri:k/ F. Others		