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| RESEARCH ARTICLE

Mapping Pronunciation Errors in English Silent Consonants: A Corpus-based Study of Saudi EFL Undergraduates

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| ABSTRACT

This study sought to explore Saudi EFL undergraduate students' mispronunciations of silent consonants /b, d, h, l, n, s, t, w/ in English words. 115 words in which the students sounded out silent consonants were collected from the spontaneous daily speech of students who were studying English as a foreign language at King Saud University. Data analysis showed that the students had varying degrees of difficulties with the different silent consonants as follows: Words with Silent d (27%) (handsome, grandmother, windmill), including 12% Silent d due to assimilation (bridge, budget); Silent t (21%) (castle, soften, wrestling); Silent b (14%) where silent b typically follows the pattern of mb (bomb, bombing, plumber); Silent l (8%) (salmon, almond); Silent h (9.5%) (honor, honest); Silent s (7%) (island, Illinois); and Silent n (6%) (autumn, mnemonic). On the contrary, the students seemed to have less difficulty in pronouncing words with Silent k (3%) (Connecticut), and Silent w (3.5%) (Warwick). Interestingly, Saudi students sound out silent consonants in some English words but not others. The students did not sound out silent consonants in words with a Silent k (knee, knife), Silent gh (light, through) and Silent g (sign, design, foreign). In these words, silent consonants seem to be difficult to pronouns as they will form a consonant cluster that does not conform to the Arabic phonological system. Additionally, the students might have learnt these as exceptions. Since Silent letter patterns are not always predictable, the students can sometimes recognize common silent letter patterns (kn-, -gh), but others as in (Wednesday, handkerchief, mortgage). Pronouncing silent consonants in English words can be attributed to transfer from Arabic which is a phonetic language that lacks true silent consonants. Many students rely on spelling to determine pronunciation. Also, the students lack exposure to the pronunciation of English speakers native. The study recommends explicit pronunciation instruction, structured pronunciation exercises, phonological awareness exercises, and contrastive phonetic analysis. Text-to-speech software, YouTube videos, TED talks, podcasts, mobile audiobooks, MP4 lessons and mindmaps can be integrated into pronunciation instruction and practice.

| KEYWORDS

English Silent consonants, mispronunciation, sounding out silent consonants, undergraduate students, EFL students, Saudi students, Arabic phonology, Arabic silent consonants.

| ARTICLE INFORMATION

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1.Introduction

Pronunciation[1] is the way in which a word or letter is said by a native speaker, or the way in which a language is spoken by native speakers. Pronunciation[2] usually refers to generally agreed-upon sequences of phonemes used in uttering a word, a phrase, a sentence or a stretch of discourse in a specific dialect that is considered correct or standard pronunciation. In other words, it is the way a particular person speaks a word in a language. The pronunciation of a word can be found in dictionaries that include standard pronunciation. However, regional or dialectal pronunciations may be found in more specific reference works. A word in a particular

[1] https://dictionary.cambridge.org/dictionary/english/pronunciation
[2] https://en.wikipedia.org/wiki/Pronunciation

language can be spoken in different ways by various individuals or groups of people, depending on their educational level, ethnic group, social class, the location of their current residence, the duration of their exposure to the language in their childhood, and speech or voice disorders.

When students learn a foreign language, they need to learn phonetics and pronunciation, understanding sounds, stress patterns, and intonation, vocabulary and idioms, grammar and sentence structure, listening, speaking, reading and writing in, and cultural and contextual understanding of the foreign language.

A term that is closely related to pronunciation is grapheme-phoneme correspondence (GPC), sound-symbol association, or letter-sound correspondence because it defines the relationship between written symbols (graphemes) and spoken sounds (phonemes) in a language. In languages with consistent GPC, like Spanish or German, each grapheme corresponds with a specific phoneme. But, in English, GPC is highly irregular, leading to pronunciation challenges, especially for foreign language learners. Sometimes GPC causes pronunciation difficulties as in the case of silent consonants (k in *knight*, b in *comb*); multiple pronunciations (*ch pronounced (/k/in chemical, (/ʃ/) in chef, and /ʧ/ in choose; c in receive, (/ʧ/) in cello, (/k/*) in *Canada)* and phonetic Interference from the native language as in consonant clusters, archaic graphemic forms, even when pronunciation changes (*island* with a silent s).

Understanding this relationship enables students to read by connecting graphemes with phonemes and blending phonemes together to sound out words. It also enables them to spell words by breaking them into phonemes that have corresponding graphemes. Aquiring phoneme-grapheme correspondence skills occurs largely in the context of learning the native or foreign language and when individuals decode and spell words[3] (Al-Jarf, 2019; Al-Jarf, 2008a).

Due to the complexities of the English phoneme-grapheme correspondence system, many Arab learners face difficulties in pronouncing English words. Many studies in the literature explored the types of pronunciation problems that Arab students learning English in Yemen, Saudi Arabia, Jordan, Oman, Egypt, Iraq, Sudan, United Arab Emirates, Malaysia, Turkey and USA have such as the perception and production of consonants and vowels in British English (Evans & Alshangiti, 2018); perceptual confusions of consonants and vowels in American English by Arab bilinguals at Rush University Medical Center in Chicago, IL (Shafiro, Levy, Khamis-Dakwar & Kharkhurin, 2013); initial and final consonant clusters as /spr/, /kst/ (Aptocaine, AL-Junaid & Younes, 2024; Alsuhaibani, Mahdi, Al Fadda & Alkadi, 2024; ALZahrani & Shoeib, 2021; Al-Yami & Al-Athwary, 2021; Al Azmi, 2019; Esshali; 2013); identical adjacent consonant consonants in English words (Altakhaineh, Al-Namer, & Alnamer, 2024); bilabial plosive /p/ (Al-khresheh, 2024); fricative consonants (Wahidah, Sajidin & Aminuddin (2025); over-emphasizing geminates (Ahmed & Sameer, 2016); and difficulties in pronouncing English morphemes as plural '-s', past '-ed' (**Abker, 2020)**; geminating consonants in city and country names (Peking, Venezuela, Minnesota); inserting a vowel in consonant clusters in Proper Nouns and acronyms (Logansk, Zelinsky, GMC SNAS), and pronouncing words the way they are spelled (Nazi, Huawei Nike, Wednesday, Hyundai,) (Al-Jarf, 2022b; Al-Jarf, 2022c).

Most studies in the literature focused on the perception and production of single consonant phonemes. For example, Saudi students learning English had problems with the perception and production of vowels and consonants in British English. The students' difficulties included /æ/, /ʌ/, and /ɒ/ in vowels, and /p/, /v/, and /ŋ/ in consonants (Evans & Alshangiti, 2018). In Ahmad & Muhiburrahman's study (2013), teachers reported Saudi EFL learners' consonant substitutions errors like /b/ for /p/ and /t/ for /θ/. Yemeni university as well as secondary students' have consonant pronunciation problems with /p/→/b/, /θ/→/t/, /ð/→/d/, /θ/→/s/ (Salah, 2024; Al Mafalees, 2020; Hadjah & Hamzah, 2023; Al-Rubaat, 2017). Masroor et al.'s (2022) study found that the most mispronounced consonants by Yemeni undergraduates were /p/, /v/, /θ/, and /ð/. The students often replaced them by /b/, /f/, /s/, and /z/. Learners in Kuwait and Egypt had consonant difficulties, with /p/, /v/, /θ/, and /ð/. These consonants were substituted by /b/, /f/, /t/, and /d/ (do Val Barros, 2003). Iraqi students struggled with English consonants /p/, /v/, /θ/, and /ð/. Substitutions such as /b/ for /p/ and /f/ for /v/ were common (Almuselhy, 2024). Emirati university students confused /p/, /v/, and /ŋ/ with /b/, /f/, and /n/ (Salim & Al-Badawi, 2017). Sudanese EFL university students had difficulties pronouncing the English consonant sounds /p/, /v/, /θ/, and /ð/, which were frequently substituted by /b/, /f/, /t/, and /d/ (Abker, 2016). Adult Arab EFL learners in Malaysia mispronounced the consonants /ŋ/ (as in "sing"), /ɬ/ (dark L), /p/, /d/, /ʒ/ (as in "measure"), and /v/ (Jubier, 2019). Rehman, Silpachai, Levis, Zhao and Gutierrez-Osuna (2022) used a data-driven approach to identify the pronunciation problems of Arabic speakers from Saudi Arabia, Jordan, Iraq, and other Arabic-speaking regions. They found English segmental errors with the consonants /p/→/b/, /v/→/f/, /θ/-/t/, /ð/-/d/, and vowel centralization (/æ/→/ɑː/).

[3] https://onlit.org/phonics-overview/

Further studies as Luthfi & Lubis (2025),-Ülkersoy & Shammaa (2024), Adel et al. (2023), Abohajar et al. (2023), Al-Zoubi (2019), Al Yaqoobi, Ali, & Sulan, 2016), Awaj & Mohamed (2017), Lardhi et al. (2017), Shariq (2015), Al-Hattami (2010), Amer (2001) and others focused on the mispronunciation of English consonants.

The literature review showed lack of studies that investigate mispronunciations of silent consonants in English words. Therefore, this study seeks to shed light on Saudi EFL undergraduate students' difficulties with silent consonants in English words such as /b, d, h, l, n, s, t, w, ng/, give examples of words in which the students sounded out each silent consonant, the hierarchy of difficulty of these silent consonants and whether there are silent consonants that are not mispronounced.

Findings of the current study provide valuable insights into the specific pronunciation challenges faced by undergraduate EFL Saudi students related to silent consonants. The data can be a strong basis for developing targeted and effective pronunciation teaching strategies. They are also significant for raising students and instructors' awareness of the silent consonant pronunciation inaccuracies produced by some EFL learners and which need further attention in EFL instruction.

2. Definition of Terms

In Arabic, the concept of truly silent letters as in English (k in knife & w in write) does not exist. Instead, some letters are not pronounced in specific contexts, and this is primarily due to grammatical or assimilation rules as in the following cases:-(i) The و waw at the end of proper noun عمرو Amr to distinguish it from عمر Omar. (ii) The alif in the middle of a word (مائة one hundred, مائتين two hundred). (iii) The alif at the end of masculine, plural past tense verbs ending in waw (درسوا they studied, كتبوا they wrote). (iv) The و waw in the middle of a word (أولاء، أولئك، أولو، أولات these/those). (v) The solar lam {al-} when followed by a word beginning with a solar consonant ت ث د ذ ر ز س ش ص ض ط ظ ل ن (الدرس /addars/, السكين /assikkiyn/). (vi) The alif at the end of a noun with nunation (كتاباً a book, فتىً a boy, عصاً a stick). (vii) hamzat al-wasl in the imperative triliteral (اكتب), four-consonant (اكتمل complete), and five-consonant letter verbs (استعلم). (ix) hamzat al-wasl in verbal nouns derived from five-consonant letter verbs (استعلام inquiry; ابتسام smiling). (x) hamzat al-wasl in the following nouns as اثنان two, امرأة woman, اسم name (Al-Jarf, 2018; Al-Jarf, 1992; Al-Jarf, 2003; Al-Jarf, 1990; Al-Jurf, 1994).

On the contrary, English has many silent vowels and consonants. Specifically, it has single consonant phonemes and consonant digraphs that are not pronounced as in *Silent B (dumb, comb, debt); Silent D (grandma, handsome, Wednesday; Silent E (name, hope, breathe); Silent G before 'N' (e.g., gnome, sign, foreign); Silent H (honor, hour, ghost, silhouette), or after 'R' (rhyme, diarrhea); Silent K before 'N' (knee, know, knight); Silent L (calm, half, could); Silent N after 'm' (autumn, column); Silent P (psychology, pneumonia, receipt); Silent S (island, isle); Silent T (castle); Silent W before 'R' (sword, write, wrong, wrap); Silent gh: (sight, through, daughter); Silent ch (yacht)* (Al-Jarf, 2010).

3. Methodology

3.1 Informants

A sample of informants consisting of 120 undergraduate students majoring in English and translation at the College of Languages Sciences, King Saud University, Riyadh, Saudi Arabia, participated in the study. The informants were all Saudi, were native speakers of Arabic with Saudi Arabic as their Colloquial Arabic dialect and were in different levels of the translation program.

3.2 Data Collection and Analysis

A sample of 115 words with mispronounced silent consonants was collected from spontaneous daily speech of undergraduate Saudi students who were studying English and translation at the College of Language Sciences. The author collected the pronunciation errors from observations of the informants in natural conversational situations over 5 semesters, whether the informants were code-switching (mixing Arabic discourse with English words) or were fully speaking in English. The informants were observed in and out of the classroom. The author used the diary methodology as a data collection technique. Only errors in sounding out silent consonants in English words were recorded. Pronunciation errors in silent vowels were ignored. The set of English words with silent letter errors and how they are pronounced by each informant was recorded together with a transcription of their faulty pronunciation. No tests or questionnaire survey was used. The informants were not prompted or given any stimuli to pronounce English words with silent letters.

Pronunciation errors were grouped and categorized according to the silent consonants /b, d, h, l, n, s, t, w, ng/, i.e., words with faulty pronunciation of the same silent letter were classified and grouped under each silent letter. The percentage of words with each silent letter was calculated regardless of how many students produced the same faulty word. Results are reported quantitatively and qualitatively.

4. Results

Table 1 shows that silent consonants are a major source of pronunciation difficulty for undergraduate Saudi EFL students, with percentages ranging between 1% and 27%. This means that the English silent consonants /b, d, h, l, n, s, t/ constitute a challenge for these students, as English orthography is irregular and does not always directly reflect pronunciation or correspond with the written graphemes they represent.

Saudi EFL college students in the current study sounded out silent consonants /b, d, h, l, n, s, t/ when pronouncing the words presented in Table 1. Table 1 also shows that words with the highest frequency of pronunciation errors are those with a Silent 'd' (27%) including Silent D due to assimilation as the most problematic silent consonant, probably because of their high frequency of occurrence in common words (*Wednesday*, *handsome,* grandfather, sandcastle, landmark, windmill, windshield, mindset) and assimilation cases (*bridge*, *knowledge*), where the 'd' either disappears or merges with the /j/. Assimilation often happens in natural speech, where a sound changes to become more like its adjacent sound. This suggests that students struggle significantly with words containing silent consonant d.

Secondly, Silent 't' (20%) represents one fifth of the mispronounced words in the sample, indicating a widespread issue probably because many of the words like *often*, *listen*, and *castle* are high-frequency words which challenge phonetic expectations as the problem here is not just with unfamiliar vocabulary. The variety of word structures (-stle, -ften) points to different contexts where the 't' becomes silent. Clusters (*-tle*, *-sten*) seem to be unintuitive for EFL Saudi students who have not mastered the English phonological system yet. Words like *castle* and *listen* are commonly mispronounced by Arab students. It seems that the students struggle most with silent consonants embedded in complex consonant clusters (*Wednesday, strength, listen*). The mispronunciation of "often" is particularly common for EFL learners.

Thirdly, Silent b (14%) is problematic because most of these examples follow the pattern of 'mb' at the end of a word, where 'b' is typically silent. "Cupboard" and "raspberry" are interesting exceptions, showing that the silent 'b' can appear in word medial position. Words with a Silent l (8%) often feature 'al' combination in (*palm, salmon, calm, almond, calf, half*) where the 'l' is silent. The difficulty mostly stems from students applying a phonological rule that does not exist in English. Words with a Silent h (9.5%) are commonly mispronounced words, particularly for students from languages where 'h' is always pronounced. The distinction between stressed and unstressed syllables might also play a role in whether 'h' is silent as in (honest, herb, herbal, silhouette, Tottenham, Debenham). Words with Silent s (7%) have unusual spellings in English. The consistency of 'is' in "island, isle, aisle, islet, isthmus," might be a source of confusion for the students. The students seem to be unfamiliar with place names with a silent s (Arkansas, Illinois, Des Moines). Words with Silent n (6%) often occur after 'm' at the end of a word (government, autumn, hymn, mnemonic, solemn) is a common example of this difficulty.

On the contrary, the students seem to have less difficulty in recognizing silent consonants in words with Silent k (3%) and Silent W (3.5%) which means that these two silent consonants are less of a widespread problem as they are very specific (Connecticut, biscuit, Norwich, Warwick). The students have no problem with (sword) which is a classic example of silent 'w'. Other common examples with a silent w which are not problematic for the students are (write, wrong, answer).

Furthermore, data analysis showed absence of words with some silent consonants that might be difficult for undergraduate Saudi students in the current study as much, as in Silent k (*knee*, *knife*) which did not occur in the error data, probably because the 'k'-before-'n' rule is explicitly taught. Similarly, Silent gh (*light*, *through*) and Silent g (*sign, design, foreign*) do not seem to be a problem probably because the students may have learnt these as exceptions, which means that the students do not have any problems with them. In addition, it is not easy to sound out those silent consonants which will result in consonant clusters that do not occur in word initial and word medial positions in Arabic. Hence the students would have difficulty pronouncing the consonant cluster kn.

It is noteworthy to say that the mispronounced words and their percentages offer an approximation. The variation in the percentages and the absence of mispronounced words with certain silent consonants mean that the students have trouble pronouncing certain words but not all words containing silent consonants and not all the words containing a particular silent letter. The percentages and examples in Table 1 are representative but not exhaustive. The actual scope of mispronunciation related to silent consonants varies from one silent letter to another. This depends on the students' word knowledge, their familiarity with some but not others, and the frequency of words containing each silent consonant in the English language.

Table 1: Distribution of Mispronounced English Words According to The Silent Consonants

Silent Consonants	%	Examples
Silent d	15%	handsome, hands, brands, sandwich, Wednesday, granddaughter, grandson, grandmother, grandfather, sandcastle, landmark, windmill, windshield, mindset, soundtrack, sounds, grandma
Silent d due to assimilation	12%	pledge, hedge, edge, bridge, fudge, lodge, badge, grudge, knowledge, nudge, ridge, sledge, budget, adjective
Silent t	20%	apostle, bustling, castle, fasten, nestle, soften/ softener, wrestle, wrestling, hasten, listen, glisten, soften / softener, moisten, mortgage, often, whistle, rustle, thistle, postman, rapport
Silent b	14%	bomb, bombing, catacomb, climb/ climber, dumb, plumber, tomb, womb, lamb, thumb, comb. limb, cupboard, raspberry
Silent h	9.5%	honest, honor, honourable, vehicle, herb, herbal, silhouette, Utah, Tottenham, Debenham, Derham
Silent l	8%	palm, salmon, calm, almond, calf, half, folk, balm, Lincoln
Silent s	7%	Island, isthmus, isle, aisle, islet, Arkansas, Illinois, Des Moines
Silent n	6%	autumn, column, condemn, hymn, mnemonic, solemn, government
Silent w	3.5%	Biscuit /biskwi :t/, Norwich, Warwick
Silent p	3%	pneumatic, psalm, psychology
Silent k	1%	Connecticut
Silent ch	1%	yacht
Silent ng	1%	Wyoming

5. Discussion

Findings of the current study revealed that EFL Saudi undergraduates make mistakes in pronouncing silent consonants in some English words. This finding is similar to findings of other studies in the literature conducted with non-Arab students. For example, a study by Pusfarani, Mukhrizal & Puspita (2021) examined pronunciation errors related to English silent consonants among seventh-semester students at Bengkulu University in Indonesia. Analysis of errors from a pronunciation test containing sentences with 13 silent consonants (e.g., *k, gh, th, g, p, l, t, s, w, n, b, h, d*) revealed that the most mispronounced silent consonants were *g* (*gnaw*) and *b* (*doubt*), These errors constituted 77% of all errors. The researchers concluded that Indonesian students struggle with silent consonants due to differences between the English and Indonesian phonetic systems. In two other studies, Sayekti, Hardiah, & Lubis (2021) and Andini & Ekaningsih (2025) found that the most frequent mispronunciation errors of inert letters made by students at the English Education Study Program at Universitas Bengkulu, Indonesia were sounding out inert letter /d/ of /-nd/ which accounted for 94% and silent inert letter /a/ of /-cal-/ which accounted for 88% of the total errors. In Costa Rica, Charpentier-Jiménez (2022) reported that about one-fourth of the university students who are Spanish native speakers at a Costa Rican public university had significant problems pronouncing words with silent consonants.

The mispronunciation of silent consonants in English words by undergraduate EFL Saudi students can be attributed to a number of factors that include the following:

(i) Transfer from the Arabic phonological system. Arabic is a phonetic language that lacks true silent consonants. Aracic words are generally pronounced as they are written. Almost every written letter is pronounced. As a result, Saudi students expect all consonants in English words to be articulated. This makes it challenging for Arabic native speaking student to intuitively recognize silent consonants in English words. When Arab students learn English, their brain naturally tries to apply the rules of their native language. Since they are accustomed to pronouncing every letter they see, they transfer this rule to English. This leads to sounding out consonants that are silent in English, such as "t" in "castle" or "b" in "bombing."

(ii) Many students rely on spelling to determine pronunciation especially for unfamiliar words, because reading and writing are usually emphasized in foreign language instruction more than listening and speaking. When students see letters in a word, they automatically pronounce them. Since English contains silent consonants that do not match their written form, some Arab students unintentionally pronounce every letter unless they are already familiar with the correct pronunciation without sounding out silent letters.

(iii) Lack of exposure to native pronunciation of English speakers. If the students acquire English from textbooks or non-native speaking instructors, they may not be exposed to the pronunciation patterns of English native speakers where silent consonants are not pronounced. Words that are commonly encountered through media, education, or frequent use (like

Christmas) are more likely to be pronounced correctly. Arabic speakers are familiar with "Christmas" pronounced correctly over and over again before they see it in its written form. This strong auditory input helps them internalize the correct silent t pronunciation. However, for words that are less frequently heard or are primarily encountered in their written form, the students tend to pronounce all the letters. For example, a word like "pneumatic" which is less common in everyday conversation might be pronounced with the "p" if the student is relying on its spelling.

(iv) Certain silent consonants in English resemble audible phonemes in Arabic, making them more likely to be pronounced. For example: the word "Christmas" is often pronounced correctly because the silent t is surrounded by sounds that exist in Arabic phonology. Also, it is difficult for the students to pronounce the consonant sequence stm in Christman which does not exist in Arabic. But words like "castle" or "listen" may lead to mispronunciation, as Arab students might articulate the t, thinking it is necessary for the correct pronunciation.

(v) Teaching methods and orthographic influence. Instructors may not have enough time to correct the pronunciation of every single word and every single student in class. So, the students resort to pronouncing words the way they are spelled without being corrected.

(vi) Silent letter patterns are not always predictable. In some cases, the students can recognize the common silent letter patterns (*kn-*, *-gh*), but in other cases, English silent consonants appear irregularly (*Wednesday*, *mortgage, handkerchief*). These require rote learning, not just pattern recognition. On the contrary, some silent-consonant words, like *Christmas*, are pronounced correctly not just because they are heard often, but because the silent t occurs between familiar phonemes and the articulation of t will produce a consonant cluster not available and not acceptable in Arabic phonology. The phonetic positioning plays a role in correct pronunciation.

(vii) Difficulties with phoneme-grapheme relationships and word identification difficulties. Al-Jarf (2019), Al-Jarf (2018), Al-Jarf (2009), and Al-Jarf (2005) indicated that 63% of the spelling errors were phonemic, while 37% were graphemic. Errors stemmed from phonological and orthographic confusion. The students struggled with silent consonants, homophones and vowel digraphs. They relied on phonological and visual strategies. They misapplied silent letter rules and phonetic approximations. Strong links between listening comprehension and spelling accuracy.

6. Recommendations

To help Saudi EFL undergraduates overcome pronunciation problems with silent consonants, activities as listening exercises, the integration of phonetic training into curricula, explicit pronunciation instruction focusing on silent consonants, structured pronunciation exercises and drills, phonological awareness exercises, contrastive phonetic analysis and training, i.e., comparing English phonology with Arabic phonology, providing consistent and constructive feedback on pronunciation, and targeted practice exercises and drills that focus on problematic silent consonants (t, d, b) (Ahmad & Nazim, 2014); Abker, 2016; Abohajar et al., 2023; Shariq, 2015; Adel, Tawfik & Din, 2023; Awaj & Mohamed, 2017; Al-Zoubi, 2019; Lardhi, Radzuan & Benraghda, 2017.

Prior studies with EFL students at the same college by the author showed that spelling and pronunciation are closely related. Therefore, this study recommends instructional strategies as phonological awareness training to improve spelling accuracy; sound-symbol association and structural analysis; explicit phoneme-grapheme instruction; contrastive analysis-based instruction; integrated phonics-based instruction; auditory discrimination training, corpus-based analysis to refine spelling instruction, explicit spelling strategy training, and multisensory spelling instruction (Al-Jarf, 2019; Al-Jarf, 2018; Al-Jarf, 2008b; Al-Jarf, 2008c; Al-Jarf, 2007; Al-Jarf, 2005a; Al-Jarf, 2005b).

Since the pronunciation problem is linked to specific consonants in specific words, a lexical approach to vocabulary instruction where pronunciation is taught as part of a vocabulary course can be effective. In teaching general and specialized vocabulary, Al-Jarf (2022a), Al-Jarf (2023b), Al-Jarf (2019); Al-Jarf (2008a), and Al-Jarf (2006) recommended connecting the printed form of words with their pronunciation as follows: (i) Silent consonants: *pneumatics, design, toughness, enough, strength, through, although.* (ii) Hidden sounds as in the following examples: /ʃ/ sound: *insurance, quotient, coefficient, social, facial,* /ʃ/ sound: *potential, artificial, partial, Inertia,* /tʃ/ sound: *structure, saturation, temperature, opportunity, mutual,* Ch pronounced as /k/: *chemical, mechanical, machine, mechanism,* Different pronunciations of -tion*: digestion, negotiation,* Different pronunciations of -sion: *tension, vision, compression, pressure.* (iii) Pronunciation of sc, cc in *scientist, access, account and so on.* (iv) Double consonants: *attend, appendix, associate, assess, access.* (v) Words with same vowel digraphs but different pronunciation: *heart, heard, clean, dear.* (vi) Words with different vowel digraphs but same pronunciation: *deceive, lead, keep.* (vii) Homophones: *sight, site, cite. (vii)* Homographs: *bass & bass, read & read. (viii)* Words with 2 stress patterns according to their part of speech: *separ'ate* (V), '*Separate* (Adj, 'present (N, pre'sent (V). *(ix)* Compounds as *electro-dynamics, electro-mechanics, net/work;* and (x*)* pronunciation of foreign terms: *entrepreneur, bourgeois, rapport, machine.*

Moreover, ample exposure to authentic spoken English and authentic pronunciation through listening activities, videos, and native speaker interactions can help students internalize correct pronunciations. For example, the students can utilize Text-to-speech software to enhance their decoding skills and pronunciation accuracy, YouTube videos for self-regulated pronunciation practice, TED Talks for authentic listening and pronunciation, podcasts, mobile audiobooks and MP4 lessons for listening and pronunciation practice. The students can practice listening and pronunciation in a digital multimedia language lab and shadow native-speakers' pronunciation. Instructors can use mind-mapping software to show phoneme-grapheme correspondences including English words with silent consonants grouped according to each silent consonant (Al-Jarf, 2023a; Al-Jarf, 2022d; Al-Jarf, 2022e; Al-Jarf, 2021a; Al-Jarf, 2021b; Al-Jarf, 2021c; aI-Jarf, 2020; Al-Jarf, 2012; Al-Jarf, 2011).

Finally, other pronunciation challenges related to assimilation, elision, hidden sounds, vowels, vowel digraphs with the same pronunciation, and same vowel digraph with different pronunciations, homophones and homographs, and pronouncing long words as two short words by Arabic speakers learning English are still open for further investigation in the future.

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