Dialectal Dfferences in the Production of English Vowels by Iraqi EFL Learners at University Level

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ABSTRACT:

The present study investigates whether or not Iraqi EFL learners' native dialect has an impact on their pronunciation of English monophthongs and to examine the reasons, behind the mispronunciation, they are expected to commit. To achieve this goal, sixty Iraqi participants speaking two Iraqi dialects i.e. *qeltu* and *gilit* dialect, were engaged to achieve a speech production task of the eleven English monophthongs in a /hvd/ context. The data were analyzed using PRAAT to extract first and second formant frequencies and as well as vowel duration for each vowel. Lobanov's *TELESUR G normalization algorithm* (2006) was tracked to normalize F1 and F2 values. The normalized data were compared to results from Deterding (1997) and walls (1962). The results showed that Iraqi EFLLs produced the targeted vowels shorter than the control group represented by native English. In terms of vowel quality, they produced lower and more fronted vowels than the control group. In addition, this study revealed that there are statistically significant cross-dialectal differences between *gilit* and *qeltu*-speaking EFLLs in the production of English vowels. It is concluded that learners' mother tongue has a role in their production of English vowels.

Keywords: *gilit, qeltu***.**

1. Introduction

Language is an influential means of human communication. It helps people to connect their feelings and ideas in an easy and successful way. At the present time, people usually learn additional language, and English as a foreign or a second language is a common choice. According to Al Abdely and Thai (2016a), learning new sounds is perhaps the most difficult job for L2 learners, since many keep a native accent while mastering other parts of L2 production. A main point in acquiring an L2 and using it for communication is to learn its phonetic system. Vowels are more difficult to learn than consonants because they are phonetically so close to each other in articulation. Al-Tamimi, (2007) defines vowels as the sounds in which the lungs pushed out air stream through the vocal tract with much less obstruction of air. Thus, a well description of vowels can be set by

describing their acoustic features. (Yavas, 2006, as cited in AL-Abdaly, 2021)

There are various ways to pronounce consonant and vowel sounds in the English language. Phonological variation is important as a reflection of various social factors.It refers to a different pronunciation of a word (or of a phoneme of a word) that has no influence on the meaning of the term. For example, /p/ in the word (tip) is produced with or without aspiration, yet it does not affect its meaning. The speaker's dialect is one of the factors that contribute to this difference. It is generally agreed on that even with cross-dialectal variations, Arab learners of English tend to vary in how they acquire and produce such vowels (Hellmuth, 2013). In the same vein, past studies show the effect of mother language on the L2. Besides, Marković (2009, as cited in, AL-Abadly & Yap, 2016) stated that L2 sounds may interact with the vowel space of learners' L1, since they are very close to each other. In general, EFL learners from around the world struggle with English language pronunciation. (Haji & Mohammed, 2019).

2.Related Studies

The following past studies are greatly related to the current study highlighting on their aims, methods implemented, and the conclusions:

Mitleb (1981) provided an empirical evidence concerning the resemblance of temporal properties of English vowels by an Arabic accent native speakers comparing with English ones. He utilized two groups of seven male speakers: a Jordanian group and an American group. He chose12 English minimal pairs for this study in /hvd/ and /hvt/ context. He concluded that Jordanian Arabic speakers could not perceive and produce tense vs. lax distinctions of English vowels without transferring Arabic short vs. long vowel duration patterns to English tense vs. lax pairs.

Munro (1993) tested the production of ten English vowels using /bvd/ and /bvt/ contexts form by comparing 21males speakers of American English with 21 Arab male speakers from seven Arabic speaking countries. The purpose of Munro's study was to investigate the expected differences between native i.e. American and non-native English speakers i.e., Arabic EFLLs in the English vowels production. Quantity (duration) and quality of English vowels were measured and compared across the two groups. He reported that all vowels produced by Arabic speakers were shorter than those produced by American Speakers except/u/. This is because of the L1 influences on L2 vowel articulation since Arabic vowels are shorter than English vowels. Further, it concluded that native English group produced low vowels longer than high vowels and tense vowels are longer than lax ones. In terms to vowel quality, it explained that the Arabic speakers uttered the English back vowels in relatively the same quality of the Arabic vowels. The production of English back vowels by Arab EFL learners tend to be similar to the Arabic vowels, as they were produced backer than English ones.

Hubais and Pillai (2010) examined the pronunciation of English monophthongs by to Omani learners. They concluded that the English vowels produced by the Omani speakers engaged a similar vowel space as produced by British English speakers although some individual vowels have different qualities. Moreover, the vowels also showed a contrast in length between vowel pairs. In addition, the vowels production of Omani speakers was similar to those produced by Arabic speakers from different regions, giving rise to the perception of an Arabic accented English.

Brown and Oyer (2013) tested the production of eleven English monophthongs uttered by an Arabic speaker comparing with an American speaker. They concluded that the Arabic-speaking participant uttered the high vowels lower and the back vowels more central than the English native speaker. As well as, he produced /e/ as /i/. In the vowel space, the F1 frequencies on of /e/ and /i/ were close to the long front vowel /i:/. As wall as, they stated that the Arabic participant uttered /ɔ:/ as /o/ which could generate difficulties in distinguishing words as caught and cot.

3.The research Objectives

This paper is aiming at:

1. Investigating English vowels produced by Iraqi EFLLs and compare them with English one
2. Finding out if there are any dialect-related differences among Iraqi EFLLs in the production of English vowels.

4. Iraqi Arabic

Arabic is one of the languages that are known as the Semitic languages (Versteegh, 2014). Modern Standard Arabic or MSA is the Arab world's official language. It is the media and culture's predominant version of Arabic. MSA is based on Classical Arabic, the language of the Qur'an (Islam's Holy Book), in terms of syntax, morphology, and phonology. It is, nonetheless, far more modern lexically. It is not native language of Arabs, but it is the language of instruction throughout the Arab world.

In contrast, Arabic dialects are authentic native language variants. In most cases, they are only used for casual daily communication. Although there is a rich popular dialect culture of folktales, music, movies, and TV series, they are not taught in schools or even standardized. Dialects are predominantly spoken rather than written). Iraqi dialect is a dialect of Arabic which is called “Mesopotamian Arabic,”. It includes two distinguished sub-dialects within the country: gilit and qeltu dialects.

Blanc (1964) classified Iraqi Arabic dialects into the gilit-qeltu classification to denote the divisions of Arabic dialects spoken in the Iraqi area. The words gilit and qeltu are derived from “to say” in the 1st person singular of the present perfect tense in Standard Arabic. The word qeltu is basically utilized as a representative of a vast number of vocabularies holding the Arabic phoneme /q/ that are recognized in a different way among each dialectal group, whereas in the case of the gilit-group, speakers tend to use [g] in most contexts, while the speakers preserve [q] in many Classical Arabic origin words (Al-musawi,et al,2017).

Though Iraqi Arabic (IA) has a richer vowel system compared to Classical Arabic (CA) and Modern Standard Arabic (MSA) which include six vowels only, it is still simpler than that of RP (Abd, 2016). Short vowels have a shorter duration in real time than long vowels, and their quality may change. The specific phonetic quality of a given vowel within this range is determined by its position in the word and the type of the adjacent consonants (Erwin, 2004). In the gilit vowel system, Blanc (1964) distinguishes four short vowels /i, a, e, u/ and five long vowels /i: e: a: u: /. Mahdi (1985) divides the vowels of the *gilit* spoken in Basra into four short vowels /i, a, u, o/ and five long vowels /i: e: a: u: o: /.

In terms of *qeltu* dialects, it has three short vowel: Short vowels: /a/, /i/ and /u/, and five long vowel long vowels: /a:/, /u:/, /i:/, /ɔ:/ and /ɛ: /. Long vowels can be found in three different positions: beginning, medial, and terminal (Mohammed, 2018).

5. English vowels

Vowels are "sounds in which there is no obstruction to the flow of air as it passes from the larynx to the lips" (Roach, 2009, p. 10). Pure vowels (utilized in this study) refer to that vowels which remain constant and do not glide to another sound. English has a large number of vowel sounds. The six short vowels are: /i, e, æ, ɒ, ɑ, ʊ/. The other short central vowel which is called schwa symbolized as /ə/ is very familiar. It is heard in the first syllable of the words i.e. 'oppose' 'about', 'perhaps etc. It was not studied in this study since it is associated with weak unstressed syllables. It appears only in. While the five long vowels are / i: ɜ:, ɑ:, ɔ:,u:/

6. Methods

6.1 Data Collection Instruments

6.1.1 Demographic questionnaire

In the current study, a questionnaire was given to the Participants to provide information on their personal backgrounds. It was used to filter the students to collect participants who are needed in this study. Filtering the students is an essential step to get only the students who speak gilit dialect (Ramadi students) and also who speak qeltu dialect (Hit students). Information on learners' linguistic history as well as their parents' was also considered to avoid cases where the parents are from different dialects as it may affect the students' dialects. It was processed to get the participants age, dialect, place of birth, their parents' place of birth and gender. Such necessary information was highly appreciated for selecting the suitable subjects of the study. The native accent of the subjects should be qeltu and gilit dialects.

6.1.2. Stimulus Material

The researcher followed the context which is formed by Peterson and Barney (1952) which contains monosyllabic /hVd/ utterances that they are head, hid, had, hud, heed, hod, hoed, hawed and who'd, in addition heard, hard which are taken from Ladefoged, (2006). Reading a list of words confirms that all the vowels are stressed. The words were placed in the carrier sentence, say … again, to get a natural speaking context to help the participants to speak at a constant rate measure their acoustic characteristics

easily. (Ladefoged, 2001). To avoid confusion, the words on the list were chosen to be recognizable and simple to the participants.

Many researchers employed /hVd/ as a neutral context for vowel articulation since the "active articulators are at rest during the production of /h/, which is produced without any special tongue body shape, lip protrusion, or constriction in the supralaryngeal cavity" (Paolo et al., 2011, as cited in Ahmed, 2008, p. 170). It is a voiceless consonant which creates a weak sound, and the acoustic energy produced during its articulation is on a very low level (Khalil, 2013). It does not influence the next vowel in a negative way. In terms of the final /d/ is a stop consonant that makes it easy to determine the offset of the previous vowel on the spectrogram (Khalil, 2013). Stevens and House (1963) suggest that the /hvd/ context has a "negligible influence on the articulation during the central portion of the vowel, that is, the vowel in the context /hvd/ is produced with the identical articulatory configuration as the vowel in isolation". These two main factors take part in greater validity of the current study.

Table 4: The stimuli used in the production task

Numbers	The vowels	The carrier sentence
1	/e/	say head again
2	/ɪ/	say hid again
3	/æ/	say had again
4	/ɒ /	say hod again
5	/ʊ/	Say hoed again
6	/ʌ/	Say hud again
7	/iː /	say heed again
8	/aː /	say hard again
9	/ɔː /	Say hawed again
10	/uː /	Say who'd again
11	/ɜː /	say heard again

7. Population

The population of the present study is 60 Iraqi EFL learners at the Department of English Language, College of Education for Humanities, University of Anbar. All of them are third-year students enrolled in the academic year (2021- 2022). The participants are 30 male and 30 female speakers of Hiti *qeltu* and Ramadi *gilit* dialects of Iraqi Arabic. Each dialect has 30 speakers, 15 males and 15 females. The reason behind choosing third year students, is that they have practiced pronouncing English vowels in their phonetics and phonology classes in the first and second stages. There was no history of speech or hearing impairment among the speakers.

The participants ranged in age from 21 to 26 years. Four participants per dialect were used to test the material initially.

8. Data analysis Methods

8.1 ***Acoustic Measurements for Fundamental Frequencies***

The most common method used by phoneticians to describe vowels is to measure the frequencies of formants. Therefore, this experiment aims at measuring first and second formants since they are the most essential acoustic features that can be detected in spectrograms and can be used to correctly identify and classify vowel quality (Delattre et al., 1955, as cited in Ali, 2013). F1 and F2 of the vowels "were also taken from the middle point of the vowel, for the sake of consistency (Lucic, 2015, p. 2). The data was normalized using Labov ANAE Methods /Speaker-intrinsic method by using the NORM online vowel normalization suite. Formant values were extracted through pressing on Formant tab in the list of the Burg algorithm in PRAAT.as in Figure 1 below.

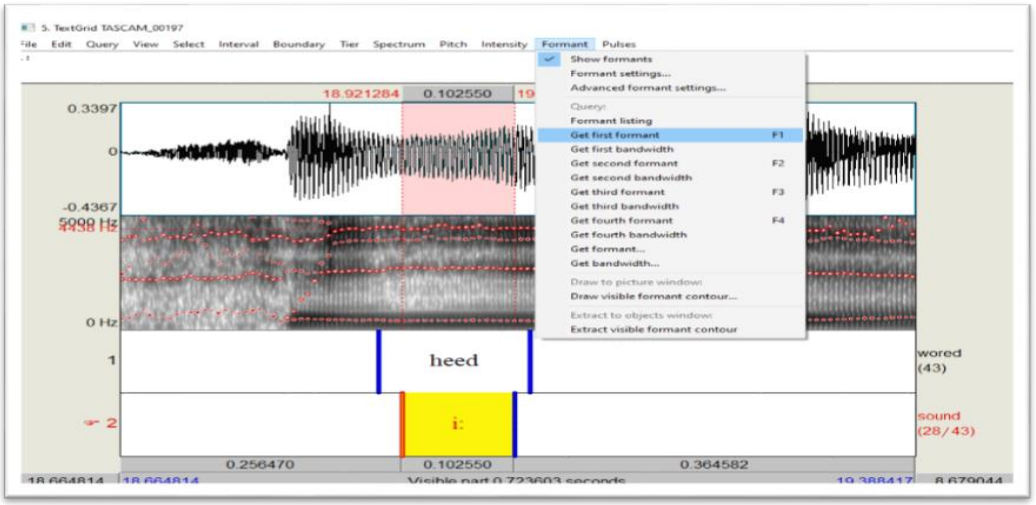

Figure 1: Screenshot explaining the way of extracting F1 and F2 in PRAAT

8.2Acoustic Measurements of Duration

Duration refers to the time employed in the production of a sound. By looking at the wave form and spectrogram, the start and the end times of 120 words in /hvd/ contexts were labelled manually for getting their duration. Two tier intervals were designed, the first one is for word such as ''heed'' and the other is for the vowel such as /i: /. The duration values for each token were measured firstly. The beginning of a vowel was marked by the starting point of voicing for that vowel preceded by the voiceless consonant /h/ and by a sudden change in formant frequency or intensity preceded by the voiced consonant /d/. Further, the offset of the vowels was marked by the offset of voicing or a sudden drop in intensity, indicating closure. The vowels onsets were determined by visual inspection of the waveform and spectrogram, as well as by ear. Vowel duration was calculated in milliseconds. By using PRAAT software to extract vowel duration. The temporal data of Iraqi EFLLs are compared native English speakers' data published by walls (1962).

9. Results and discussion

9.1 Duration -Differences between gilit and qeltu participants

This section is prepared to discuss the temporal features of English vowels as produced by Iraqi students speaking two dialects (*gili*t and q*eltu*). In addition, their productions are compared with a native group producing the same vowels. The data of the group (native speakers) is taken from Wells (1962).

Figure 2: Mean duration(s) of English monophthongs produced by Iraqi EFLLs speaking *gilit* and *qeltu* dialects and English speaker.

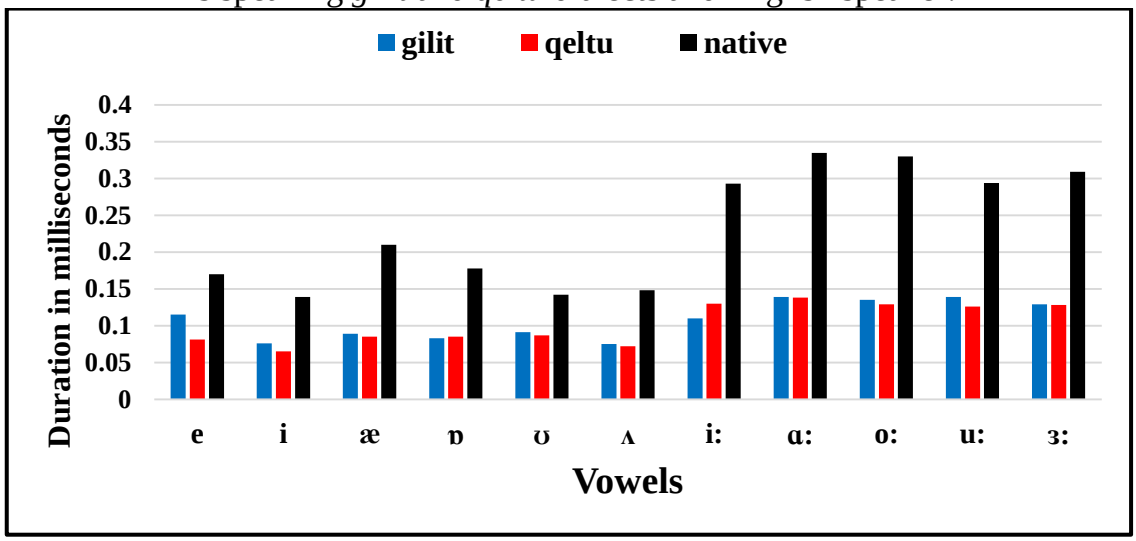

Table 2: Mean vowel duration for the eleven English vowels produced by Iraqi informants speaking gilit and qeltu dialects and native speakers of English

	e	i	æ	ɒ	ʊ	ʌ	i:	ɑ:	o:	u:	ɜ:
gilit	0.115	0.076	0.089	0.083	0.091	0.075	0.110	0.139	0.135	0.139	0.129
qeltu	0.081	0.065	0.085	0.085	0.087	0.072	0.130	0.138	0.129	0.126	0.128
Native speakers	0.170	0.139	0.210	0.178	0.142	0.148	0.293	0.335	0.330	0.294	0.309

Data presented Table 2 show mean duration values of the eleven English target vowels. Duration was measured in milliseconds for each vowel tokens. In terms of durational patterns, there is a clear distinction between Iraqi EFLLs and native speakers. Both Iraqi groups produced shorter short as well as long vowels than native English speakers. This fact is confirmed by the evidence by Munro (1993, p.52) who indicated that "Arabic speakers produced all the English vowels as shorter than the native English speakers did, but there was no evidence of a difference in speaking rate between the two". This is because of the L1 influences on L2vowel articulation since Arabic vowels are shorter than English vowels (Munro, 1993).

In the same vein, Mitleb (1981) showed that Arabic vowels are shorter than equivalent English vowels. In other words, it is concluded that students convert properties of the Arabic vowel system during the English vowel production. Furthermore, Ali (2013) shows that long (tense) English

vowel durations of Sudanese EFLLs agree with the longest native Received Pronunciation durations whereas the lax ones correspond to shortest durations. Therefore, cross linguistic differences, like these possibly lead to difficulty for EFLs.

When it comes to individual vowel differences, the duration rate of /e/ is 0.170ms and /æ/ is 0.0210ms as produced by native English speakers. This rate decreased by *qeltu*-speaking students. They uttered the short vowel /æ/ at rate 0.085ms, / i/ rating 0.065ms and /e/ at rate 0.081. As well, *gilit*-speaking participants produced /e/at ratio 0.115ms, /i/ scored 0.076ms and /æ/ scored 0.089ms. *gilit* informants articulated these vowels longer than *qeltu* participants. Thus, *gilit*-speaking participants produced front vowels (except /i:/) longer than their *qeltu*-speaking peers and closer to the native English group. Further, *gilit*-speaking participants pronounced /e/ easier than *qeltu* participants as they are closer to English speaker's ones than the *qeltu* participants. This might be attributed to the fact that *gilit* vocalic inventory contains /e/ while *qeltu* vowel system doesn't have /e/ (see section 2. 2.7.1) (Jastrow ,1994, as cited in, Jasim, 2020). As well, the front lax vowel /i/ in the word "hid" scored the smallest mean duration by *qeltu* speakers, comparing with native speakers' production. This fact implies that this vowel can be considered difficult to *qeltu* group more than *gilit* participants to produce. Jastrow (1994, as cited in, Jasim, 2020) stated that this dialect group doesn't have this vowel, thus, they face difficulty in its pronunciation. Nonetheless, the results of a T-test analysis presented no sufficient variation patterns between the two Iraqi groups with no statistical significance" ($p > 0.05$).

Regarding the central vowels / ɜ:/and /^/, there were no statistical significant differences between the two Iraqi learning groups in the pronunciation of / ɜ: /and /^/. The long central vowel /ɜ:/ in the word "*heard*" scored 0.129ms by *gilit* subjects and 0.128ms by *qeltu* students. Compared to native speakers, who produced / ə:/ (0.309ms) long, *gilit* students uttered it longer than *qeltu* students. Aluqeily (2012) pointed out that HIA speakers (Hiti Iraqi Arabic, who speak the *qeltu* dialect) are expected to find difficulty in recognizing and producing / ɜ:/, especially when it is produced without /r/ sound. They tend to pronounce "*heard"* as /*heerd*/. Moreover, the short vowel/ ʌ/ in the word "*hud*" is uttered by *gilit* speakers as 0.075ms long. It scored 0.0178ms by native group and 0.072ms by *qeltu* group. Nevertheless, both Iraqi groups speaking different dialects produced it shorter than native speakers did.

Further, Figure 2 reveals that Iraqi EFLLs speaking *gilit* dialect pronounced the back vowels /a:/ (0.139ms), /ɔ:/ (0.135ms) and / u:/ (0.139ms) easier than *qeltu*-speaking classmates since they approach native English speakers'/ɑ:/(0.335ms), / ɔ:/ (0.330ms) and /u:/ (0.294ms) more than *qeltu* group did. Accordingly, /ɒ/ (0.085ms) vowel was pronounced by *qeltu* group better than the *gilit* speakers'/ɒ/ (0.083ms) as compared with native speakers, who scored 0.178ms more than Iraqi speakers. Despite these differences, in the productions of the back vowels between *gilit* and *qeltu* males and females, they did not show statistical significance

differences. Thereby their T-test results are greater than the level of significance 0.05. This dialect might not affect the temporal features of the English vowels (see Table 2).

Table 3: Results of Lavene's test and independent Samples t-test concerning the quantity of English vowels produced by Iraqi EFLLs speaking gilit and qeltu dialects

		Levene's Test		t-test for equality of means			
Word	**vowel**	**f**	**sig**	**t**	**P. value**	**Mean difference**	**Statistical sig**
head	**e**	6.933	0.011	1.745	0.086	0.034100	Insegnificant
hid	**i**	4.255	0.044	1.004	0.319	2.541947	Insegnificant
had	**æ**	0.022	0.882	0.486	0.629	0.003309	Insignificant
hod	**ɒ**	4.402	0.040	0.498	0.620	0.003854	Insignificant
Hoed	**ʊ**	0.332	0.566	0.313	0.755	0.002019	Insignificant
hud	**ʌ**	0.137	0.712	0.507	0.614	0.003223	Insignificant
heed	**i:**	1.214	0.275	-1.433	0.157	-0.020559	Insignificant
hard	**ɑ:**	0.340	0.562	0.117	0.907	0.001247	Insignificant
hawed	**ɔ:**	0.064	0.801	0.638	0.526	0.006197	Insignificant
Who'd	**u:**	3.491	0.067	0.694	0.490	0.013012	Insignificant
heard	**ɜ:**	0.014	0.908	0.007	0.994	0.000067	Insignificant

Table 3 shows that (according to p. values) there are no statistically significant differences between gilit and qeltu participants in terms duration of English vowel. The null hypothesis which states that there are no significant differences among Iraqi speakers concerning the performance of the temporal aspects of tense/lax vowels productions is accepted. Thereby, it can be said that the independent variable (dialect) does not affect the production of both short and long monophthongs.

Fundamental Frequencies-differences Between *gilit* and *qeltu* Speakers.

This section presents the spectral differences between Iraqi male and female subjects speaking two mutually different dialects. It aims to show how Iraqi students produce vowels comparing with native English speakers. Further, it aims to investigate differences among Iraqi EFLLs in vowel productions. The normalized F1and F2 values were plotted by the use of a website called NORM.

Figure 3 : The normalized vowel space of English vowel tokens produced by Iraqi speakers speaking *gilit* and *qeltu* dialects and native English speakers. F1 values are plotted vertically and F2 horizontally. Each point in the graph represents the centroid (mean F1-F2 coordinates) in the acoustic vowel space of one vowel type of eleven vowels.

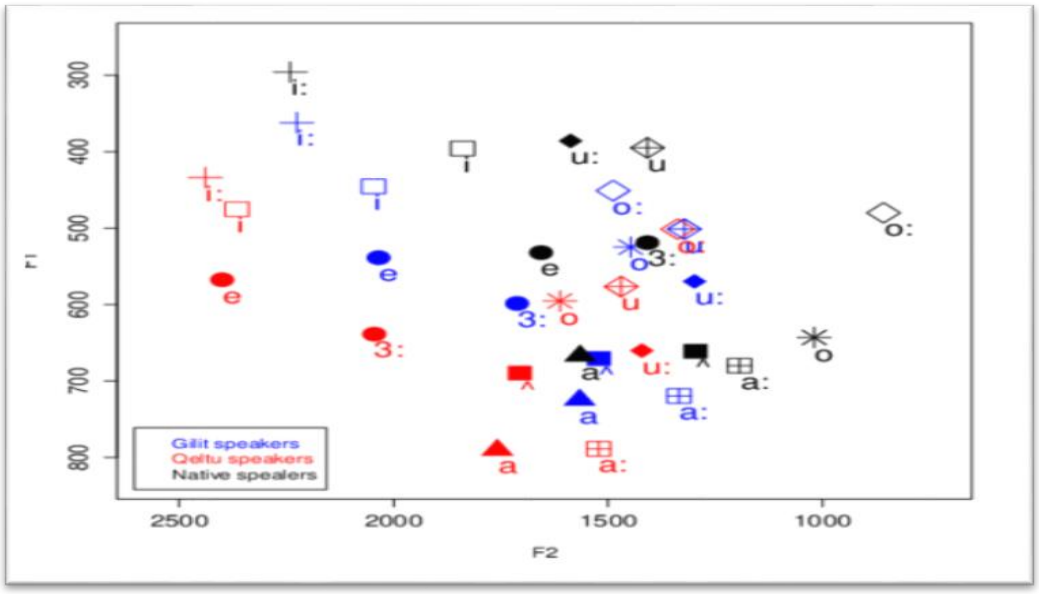

Table 4: The mean normalized F1 and F2 formant frequencies for the eleven English vowels by Iraq EFLLs and native English speakers

		e	i	æ	ɒ	ʊ	ʌ	i:	ɑ:	o:	u:	3:
gilit	F1/HZ	538	445	724	524	501	670	362	719	569	451	598
	F2/HZ	2035	2047	1566	1447	1322	1521	2226	1334	1298	1488	1712
qeltu	F1/HZ	567	475	790	595	576	689	434	788	660	501	638
	F2/HZ	2400	2365	1758	1612	1469	1705	2439	1522	1421	1337	2045
native group	F1/HZ	532	396	667	643	395	661	296	680	386	480	519
	F2/HZ	1656	1839	1565	1019	1408	1296	2241	1193	1587	857	1408

It is obvious from the data in Figure 3 that the English vowels space of the *qeltu* speaking participants differs from that of *gilit* participants. At the same time, the results of the two dialects differ from that of the native group. F1 denotes close/open tongue position.(Barkat, 2009). The vowel produced lower in the oral cavity, the higher its F1 is, but the higher it is produced the lower F1 it has. F2 stands for front/back tongue position. High F2 value indicates front vowel, and low F2 value indicates back vowel (Barkat, 2009).

Concerning the high front tense vowel /i:/ and the high front lax vowel/i/, the three groups appeared to be slightly similar, but not identical**.** ***gilit*** informants produced /i:/ at rate 362HZ for F1and 2226HZ for F2, which was closer to native speakers' F1 and F2 values of /i:/ (F1: 296HZ, F2: 2241HZ) than *qeltu* participants' values for /i:/ (F1: 434HZ, F2: 434HZ*). gilit* group produced it higher and more retracted than *qeltu* group. However, these differences held statistical significance for F1 p (0.042) < 0.05. Further, the vowel space of /i/ was 445HZ, 2047HZ by *gilit* speakers. Native subjects scored 396HZ, for F1and 1839HZ for F2 of the vowel /i/. In the same vein, *qeltu* speakers produce it lower and more fronted than *gilit* ones at scoring 475HZ and 2365 for F1 and F2 of this vowel. It has no statistical significant differences in its production by Iraqi EFLLs.

Iraqi EFLLs uttered the above two vowels in front and high space, slightly lower and more fronted than native. There are likely to be differences in formant frequencies between the two Iraqi groups on one

hand and between these dialects and native group on the other. This implies that Iraqi EFLLs follow the same way in generating these two English vowels. Thus, it makes their acoustic output of such vowels relatively identical. Munro (1993:62) claimed that there is no problem in the production of the vowel /i:/ because the informants "pronounce /i:/ which is similar to the Arabic /i:/ in a native-like manner. *qeltu* group produced /i:/ and /i/ lower and more front than the *gilit* participants and native's. As a result, it can be said that *gilit* students are close to native than *qeltu* students in terms of the production of the high front vowels /i/ and /i:/. Moreover, Iraqi EFLLs, realized the tense vowel /i:/ higher and more front than /i/. This goes in line with Hubais and Pillai's (2010) results which indicated that /i:/ was produced higher and more front than /i/. Ramadan and Thai (2021) found that Libyan EFLLs can distinguish between the two high front vowels/i:/ and /i/ as the tense vowel /i:/ has the lowest F1 value and the highest F2 value, denoting that it is higher and more fronted vowel compared to /i/.

Similarly, the vowel /e/ is a front vowel, intermediate between half - close and half open. It is produced with the lips being unrounded. It scored 532HZfor F1 and 1656 HZ for F2 by English participants. *gilit* students' /e/ is different in articulation from both *qeltu* and native participants, but this difference is statistical insignificant (p>0.05) (see Table 4.6). *qeltu* participants articulated this vowel lower and more fronted than *gilit* and English speakers. Thereby, there is a merger of the /e/ and /i/ vowels by the *qeltu* speakers. What makes it difficult that it is not found in *qeltu* dialect, so it is confused with the long /i:/ and similar to short /i/. The sounds /e/ and/i/ are areas of common mistakes, learners tend to say pin for pen bit for bet. They produce incorrect sounds. Thus, /i/, /i:/ and /e/ need FL teachers' attention and learners' awareness (Aboubaker, 2008). In *gilit* chart, and, the front unrounded low vowel / æ /(equal to "a" in the charts) scored 724HZfor F1 and1566HZ for F2 is further back, lower, and more open than that of British speakers' / æ / (F1:667HZ, F2:1565HZ*)* *qeltu* subjects' / æ / (F1:790HZ, F2:1758HZ). This vowel is produced by *qeltu* participants more accurate than *gilit* participants as compared with native group. It has significant difference as p value of F1 is 0.042 less than 0.05. Thereby, *gilit* and *qeltu* participants differed in the hightness of /æ / production.

Concerning the central vowel /ʌ/ (F1:661HZ, F2:1296HZ) produced by native group is slightly back and higher (lower F2 value refers to more back and lower f1 indicates high vowel) compared to *gilit* participants'/ ʌ/ (F1:670HZ, F2:1521HZ) and the *qeltu* participants' / ʌ/ (F1:689HZ, F2:1705HZ). *Gilit* group produced it higher and more back than the *qeltu* group. Thus, *gilit* group pronounced / ʌ/ better than *qeltu* participants as it is closer to native speakers' pronunciation. Besides, *gilit* subjects produced it lower and more fronted, closer to/æ/. It can be true that the central vowel / ʌ / is not found in the vowel system of the L1 i.e. Iraqi Arabic, but its position in the second language is very close to the two vowels /æ/ and /a:/ (Abd, 2016). It is produced by *qeltu* students lower and fronted than *gilit* and native participants, and its position between/æ/ and /a:/ as uttered by the

two Iraqi groups . Rochet (1995, cited in Abd, 2016) pointed out that errors in pronunciation of L2 sounds occur since L2 sounds have been assigned to an L1 category. The vowel /ʌ/ may have been assigned to /æ/ in IA phonetic system and consequently it has been realized inaccurately.

Furthermore, the English long central, mid vowel /3:/ (F1: 515HZ, F2:1408HZ) as in (heard), tends to be uttered more backed and higher by native speakers than *qeltu* participants' /3:/ (683HZ, 2045HZ) and *gilit* participants'/3:/ (F1:598HZ, F2:1712HZ). *gilit* informants pronounce it slightly higher and more backed than that of *qeltu* speakers, and lower and more fronted than native participants do. Both iraqi groups uttered it in different position of the tongue. T-test showed that the dialect differences in the production of these central vowels are not significant as p>0.05.

Similarly, a scatter plot for the high, rounded and back vowels /u:/ and / **ʊ** / look closer to each other and lower as produced by Iraqi EFLLs compared with the native speakers. The *gilit* group produced / ʊ / in (hoed) at a rate of 501HZ, for F1 and 1322HZ for F2. It is lower and more backed than *qeltu* informants' /u/ (F1:576HZ, F2:1469HZ). in the same vein, high close, tense back vowel /u:/, in the word "who'd" is uttered by *gilit* participants higher and more backed than *qeltu* participants' /u:/ (F1:501HZ, F2:1337HZ). While in the case of the native speakers' /u:/ (F1:480HZ, F2:857HZ) and/u/ (F1:395HZ, F2:1408HZ), they are little front, higher and more central than of that are spoken by *qeltu* and *gilit* participants. Munro (1993) in his investigation about English monophthongs produced by Arabic speakers pointed out that Arabs have a tendency to produce low F2 for back vowels. This results accord with these two back vowels. T-test results reveal that the differences between Iraqi groups in the pronunciation of /u:/ and / ʊ vowels are insignificant (p> 0.05) as it is showed in the Table below.

In addition, the back, open, neutral, and low vowel / ɑ: / scored 719HZ for F1 and 1334HZ for F2 by *gilit* learners. While *qeltu* participants' production of /ɑ:/ (F1:788HZ, F2:1522HZ) was lower and more fronted than the former group. In general, both Iraqi groups varied in the pronunciation of /ɑ:/ vowel. The variation is statistically insufficient (p> 0.05) as seen in the Table below. Al Abdaly (2021) shows that Iraqi EFLLs often produced the low vowels in place of one another. Since, low vowels share associated spectral signs and they are set in a limited space.

Iraqi EFLLs speaking *gilit* dialect produced /ɔ:/ (F1: 451HZ, F2:1488HZ) and/ɒ/ (F1:524HZ, F2:1447HZ) higher and more backed than *qeltu* participants' /ɒ/ (F1:595HZ, F3:1612HZ) and /ɔ:/ (F1:501HZ, F2:1337HZ). In terms of native group's / ɔ: / (F1:480HZ, F2:857HZ), they performed it more backed and higher than the Iraqi EFLLs participants. Further, English speakers pronounced /ɒ/ (equal to /o/ in the chart) more backed and lower than Iraqi participants. This result goes in line with Alqarni's (2018) study in which she presented that Arabic EFLLs produced / ɔ: / (equal to /o:/ in the chart) and /ɒ/ in the center of vowel space fronted than native English speakers. This agrees with Brown and Oyer (2013),

who concluded that Arabic speakers produced back vowels more central than the native English speaker.

In this comparison, Iraqi EFLLs varied in their production compared with English speakers' articulations. In comparison between *gilit* (male /female) and *gilit* (male /female) speakers, it is concluded that they articulate English vowels lower and more central than native speakers did. As well as, *gilit* participants produced vowels almost higher and more backed than *qeltu* participants.

Table 5 : Results of Levene's test and Independent Samples t-test concerning the quality of English vowels production of Iraqi EFLLs.

			Levene's Test		t-test for equality of means			
Word	**vowel**		**f**	**sig**	**t**	**P values**	**Mean difference**	**Statistical sig**
head	**e**	**F1**	**2.390**	**0.128**	**-0.129**	**0.898**	**-0.24833**	**insignificant**
		F2	**5.229**	**0.026**	**1.334**	**0.187**	**0.247900**	
hid	**i**	**F1**	**3.776**	**0.057**	**-1.319**	**0.192**	**-0.212667**	**insignificant**
		F2	**2.651**	**0.109**	**0.923**	**0.360**	**0.187967**	
had	**æ**	**F1**	**4.303**	**0.042**	**2.077**	**0.042**	**0.35573**	**significant**
		F2	**2.076**	**0.155**	**1.035**	**0.305**	**0.365396**	**insignificant**
hod	**ɒ**	**F1**	**0.006**	**0.941**	**-1.179**	**0.247**	**197533**	**insignificant**
		F2	**0.064**	**0.802**	**0.146**	**0.884**	**0.018000**	
hoed	**ʊ**	**F1**	**2.112**	**152**	**-126**	**0.900**	**0.015667**	**insignificant**
		F2	**0.916**	**0.343**	**-0.061**	**0.952**	**0.014500**	
hud	**ʌ**	**F1**	**3.883**	**0.054**	**1.222**	**0.227**	**.291500**	**insignificant**
		F2	**0.088**	**-482**	**58**	**0.631**	**.074133**	
heed	**i:**	**F1**	**6.588**	**0.013**	**-2.128**	**0.038**	**0.45433**	**significant**
		F2	**3.757**	**0.057**	**1.928**	**0.059**	**0.452567**	**insignificant**
hard	**ɑ:**	**F1**	**4.636**	**0.035**	**0.951**	**0.345**	**0.183400**	**insignificant**
		F2	**7.486**	**0.008**	**-1.785**	**0.079**	**-0.293600**	
hawed	**ɔ:**	**F1**	**0.713**	**0.402**	**0.20**	**0.984**	**0.004267**	**insignificant**
		F2	**0.142**	**0.708**	**0.729**	**0.469**	**0.117133**	
Who'd	**u:**	**F1**	**0.791**	**0.377**	**0.719**	**0.475**	**0.098467**	**insignificant**
		F2	**5.229**	**0.026**	**1.334**	**0.187**	**0.247900**	
heard	**ɜ:**	**F1**	**0.003**	**0.959**	**1.067**	**0.290**	**0.201800**	**insignifcant**
		F2	**7.486**	**0.008**	**1.785**	**.079**	**.293600**	

No statistically significant differences were identified between Iraqi EFLLs speaking *gilit* and *qeltu* dialects in the acoustic features of English vowels production with the exception of /i:/and /æ/ (equal to /a/ in the chart). This fact is ascribed that the dialect doesn't have an influence on the implementation of participants' use of this variable ($p > 0.05$). The null hypothesis, which states that the dialect (independent variable) and the quality of these vowels are unrelated; there is no relation between them (the dialect doesn't affect the F1 and F2 of both vowels) can be accepted. Vice

versa, the alternative hypothesis which states that dialect and vowel production are related is rejected.

In contrast, the statistical results of the vowels /i:/ and / æ / reveal that there are significant differences between *gilit* and *qeltu* students in the production of these vowels p values of /i:/ (.038) / æ / (.042) below 0.05. Thus, dialect influences the dependent variables /i:/ and /æ / and therefore the null hypothesis is rejected.

conclusions

1.Learners' native dialect has been found to affect their realization of English vowels.

2. Gilit speakers produced vowels longer than their qeltu peers except in the case of /ɒ, i:/. These differences reflected no statistically significant differences in the temporal aspects of vowels between the two groups ($p > 0.05$).

3.The spectral features of vowels are being affected by Learners' native dialect.

4. gilit-speaking learners produced English monophthongs higher and more backed than qeltu-speaking learners. These differences did not hold any statistical significance excluding in the case of / æ,i:/ ($p<0.05$).

5.There are variations between Iraqi EFLLs and native English speakers in almost all the vowels.

6. English vowels were pronounced by Iraqi EFLLs shorter than native English speakers.

7. Iraqi EFLLs produced vowels more fronted and lower than native speakers.

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الاختلافات اللهجية في نطق اصوات العله من قبل المتعلمين العراقيين للغة الانكليزية كلغة اجنبية

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المستخلص

تبحث الدراسة الحالية فيما إذا كانت اللهجة الأصلية لمتعلمي اللغة الإنجليزية كلغة أجنبية في العراق لها تأثير على نطقهم للغة الإنجليزية الأحادية، وفحص الأسباب الكامنة وراء الخطأ اللفظي المتوقع منهم ارتكابها. لتحقيق هذا الهدف، شارك ستون مشاركًا عراقيًا يتحدثون لهجتين عراقيتين، أي لهجة *qeltu* و *gilit*، لإنجاز مهمة إنتاج الكلام من أحد عشر أغنية أحادية اللغة الإنجليزية في سياق /. *hvd* | تم تحليل البيانات باستخدام *PRAAT* لاستخراج ترددات الصياغة الأولى والثانية وكذلك مدة حرف العلة لكل حرف متحرك. تم تتبع طريقة *Lobanov's TELESUR G normalization algorithm* (2006) لتسويه قيم $F1$ و $F2$. تمت مقارنة البيانات المعيارية مع نتائج *Deterding* (1997) والجدران (1962). أظهرت النتائج أن اللغة الإنجليزية للغة الإنجليزية كلغة أجنبية أنتجت حروف العلة المستهدفة أقصر من المجموعة الضابطة ممثلة بالإنجليزية الأم. من حيث جودة الحروف المتحركة، فقد أنتجوا أحرفًا متحركة أقل وأكثر في المقدمة من المجموعة الضابطة. بالإضافة إلى ذلك، كشفت هذه الدراسة عن وجود فروق ذات دلالة إحصائية بين اللهجات المتقاطعة بين *gilit* و*qeltu* الناطقين باللغة الإنجليزية في حروف العلة الإنجليزية. وخلص إلى أن اللغة الأم للمتعلمين لها دور في إنتاج حروف العلة الإنجليزية.

الكلمات المفتاحية: لهجة القلت ، لهجة القلتو