Dialectal differences 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 EFLLs' 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 (30 males and 30 females) speaking two Iraqi dialects i.e. *qeltu* and *gilit* dialect, were recruited to perform a speech production task of the eleven English vowels in a /hvd/ context embedded, in a carrier sentence. The data were analyzed using PRAAT to extract first and second formant frequencies and as well as vowel duration for each vowel. Lobanov ANAE Method (2006) was followed to normalize F1 and F2 values. The normalized data were compared to results from Deterding (1997) and walls (1962). After obtaining the acoustic measurements, the collected data were statistically analyzed by implementing two processes of statistical analysis. The first process is the descriptive statistics, such as manual input of data and display them as bar charts that were done using Excel sheets. This was carried out to quantify the data obtained. The second process was inferential statistics, such as independent-sample t-test by using, SPSS software to identify if the results hold any statistical significance.The results showed that Iraqi EFLLs produced the targeted vowels shorter than the control group represented by native English. In terms 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 English vowels. It is concluded that learners' mother tongue plays a considerable role in their production of English vowels.

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).

Related Studies

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

Mitleb (1981) in his study "Timing of English Vowels spoken with an Arabic Accent" intended to provide 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. In addition, a smaller influence of consonant voicing on former vowel duration (typical of Arabic) was found in the Arabic group" than in the native English group.

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. Consequently, he didn't use any normalization process and did not examine gender variation.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 used data from Obrecht (1968), Al-Ani (1970) and Norlin (1984) to compare the features of Arabic vowel with those of English ones in order to show whether or not L1 influences the production of L2 vowels.

Concerning the vowels quality, Munro (1993) 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. The aims of this study were to show qualities of English monophthongs produced by the Omani students, to show the influence of Arabic on the English vowels produced by Omanis ant to show contrasts in vowel pairs maintained by the Omani subjects.The subjects in this study were 10 male Omani postgraduate students. Concerning the data, they used word list consonants are bilabial stops to ensure the easy identification of vowels on the spectrogram and in waveform. Vowels quality were measured according to the frequencies of the first and second formants, as well as vowels duration were measured to investigate length differences between typical vowel pairs. The recorded data was transcribed and annotated using PRAAT.

Data from Deterding (1997,p.49) were used as a comparison to the data in this study to ascertain the extent to which the vowels produced by the subjects were different from native British English models. Subjects in the present study compared with the speakers in Munro's (1993) study, the F1 and F2 of the vowels reported in the latter were compared with the same ones in the present study to show if Omanis share certain vowel qualities with other Arab speakers. They depended on Al-Ani (1970) in terms of the measurements for F1 and F2 to do a comparison with the data from his study to examine the influence of Arabic vowel on producing English vowels.

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. This study involved a Saudi male student who was in his 20's who speaks Arabic as his first language. He had lived in the US for nine months. The Researchers compared the F1 and F2 measurements of the vowels produced by the Arabic speaker with data taken from Peterson and Barney (1952) which at that time formed an acoustic standard for Standard American English. 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.

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. It is "the spoken language of everyday activities at home, at work and on the street, on social Iraqi Arabic is spoken in Iraq as well as in some areas of Syria, Southeastern Turkey, and part of Iran" (Al-Bazi, 2006, P. 22).

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 (the environment) (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 qeltu dialects, the vowels /u:/ and /i:/ are lowered to [o:] and [e:] in the presence of guttural consonants, as in daqi:q [daqeːq] 'flour' (Jastrow, 2006d, cited in Ahmed 2018). In terms of the gilit dialects, there are three short vowels, /i/, /u/, /a/, but these do not directly remain to be the classical vowels. The short vowel /a/ has been preserved in closed syllables, While in open syllables it changes into /u/, or /i/ depending on the phonetic context, for instance, samak < simač 'fish' as against baṣal < buṣal 'onion'. Further, the Short vowels /i/ and /u/ have been preserved only in some environments, whereas in others they are both represented by either /i/ or /u/, for example, ḥāmuḍ < ḥāmiḍ 'sour' (Versteegh, 2014).

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:/

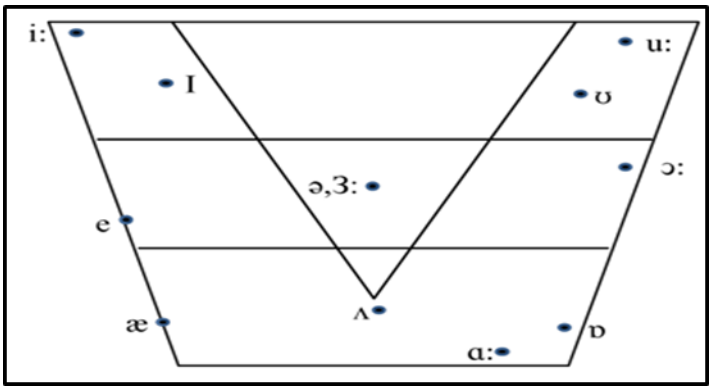

Figure 2: RP vowel chart

METHODS

MATERIALS

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.

Gender, City and place of birth and knowing if they have any speech disorders are necessary. 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.

The production test conducted in this study consists of 11 words containing of 11 English monophthongs. The recordings happened in a silent room at the phonetic laboratory, department of English, college of education for humanities, University of Anbar, where the participants can be available. The task was done by giving them a sheet of wordlist the students who are under investigation were supposed to pronounce those words loudly. The researcher recorded their pronunciation by using a recording devise. Each participant repeated each of the eleven English terms twice, for a total of 22 tokens for each subject. A total of 1320 vowel tokens were produced by all the subjects.

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	/i/	say hid again
3	/æ/	say had again
4	/ɒ /	say hod again
5	/ʊ/	Say hoed again
6	/ʌ/	Say hud again
7	/i: /	say heed again
8	/a: /	say hard again
9	/ɔ: /	Say hawed again
10	/u: /	Say who’d again
11	/ɜ: /	say heard again

Population and Participants

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. Because students were attending courses and completing schoolwork and term examinations at the time, all recordings were spread out over a period of six weeks. They were summoned during their free time, when they had no commitments. They were not told the actual aim of their reading of the words to retain authenticity and trustworthiness, but were told that their productions would be employed for research purposes. Further, they were promised that they wouldn't have to worry about mistakes when uttering the words since their

recorded sounds would be unknown and there would be no correct or incorrect answers.

Before the recording began, each participant was handed a numbered copy of the wordlist and was given the opportunity to look over the words. The researcher made seventy-three recordings in all, but only sixty were chosen for data analysis. In the event, 13 Speakers were removed from the analysis since they produced many vowels as diphthongs. They were confused, thus their productions were not fast and not clear.

Acoustic Measurements for Fundamental Frequencies

The most common method used by phoneticians to describe vowels is to measure the frequencies of formants. Ladefoged (2001) showed that "vowels can always be accurately described in terms of the frequencies of the first three formants. It is often sufficient to plot the frequencies of the first two formants on a formant chart. Given proper scales that reflects how the differences between vowels are perceived". 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 midpoint of the vowels is regarded the most trustworthy position to assess monophthongs because vowels are at their most steady state (Hillenbrand. et al, 1995, cited in Hubais & Pillai ,2010). The third format adds to quality distinction but there is no easy way of making it more evident (Ladefoged, 2001). It, like the first two, plays a function in determining vowel quality, but its involvement is less obvious (Ladefoged, 2006). Furthermore, the majority of research on other Arabic dialects has focused on the first two formants (Alqarni, 2018). Formant values were extracted through pressing on Formant tab in the list of the Burg algorithm in PRAAT.as in Figure 3.3 below.

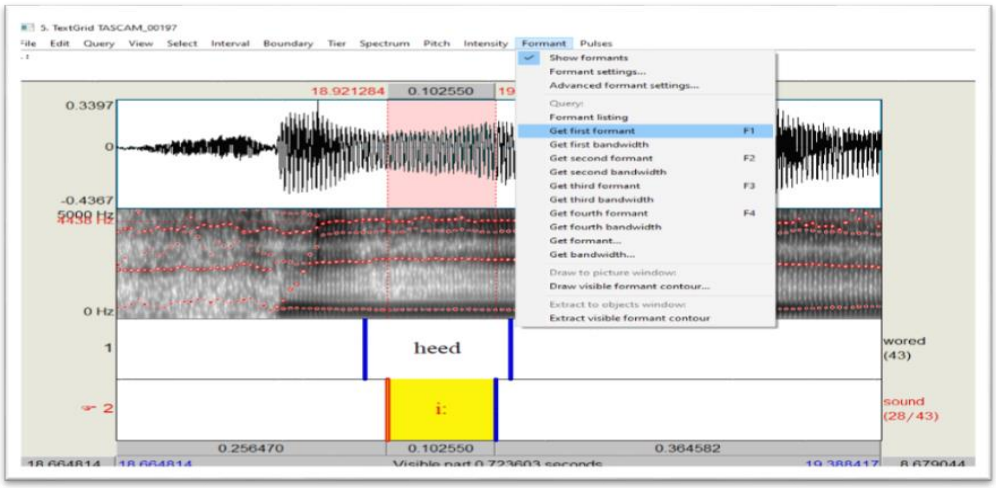

Figure 3: Screenshot explaining the way of extracting F1 and F2 in PRAAT

The beginning of each vowel was determined manually by determining the endpoint the consonant (h) as the start of the periodic waveform, while the endpoint of each vowel was determined as the end of the periodic waveform and the starting point of the final consonant. It is intended in this study to compare Iraqi English vowels productions to native group speaking the same vowels.

The data published by Deterding (1997) were used in the comparison between male and female Iraqi groups separately. It is employed since it provides F1 and F2 measurements of English vowels produced by English male and female speakers separately. An average of the spectral features of vowels produced by English male speakers were used to be compared with Iraqi male learners' ones, while the average of the spectral features of vowels produced by English female speaker were used to be compared with Iraqi females'. In addition, data from Deterding (2006) were utilized in comparison between Iraqi male and female speakers (as unseparated group) and native speakers

Vowel Normalization

The normalization process is an important step in data analysis, due to normalizing a vowel quality will reduce the physiological variation (i.e., differences in mouth sizes) between speakers to make the values equal (Adank, Smits, & Van Hout, 2004) It is an appreciated tool to facilitate across-speaker and across language comparisons (Yang 1996). Fabricius et al. (2009) state that any normalization procedure of vowels should aim: at reducing variation caused by physiological differences among

speakers, preserving sociolinguistic/ cross-linguistic / dialectal differences in vowel quality, and saving phonological distinctions among vowels.

In principle, the solution is, to eliminate as much inter-speaker differences of the formant value because of biological differences as possible. This would reduce the impact of the differences in the volume of a speaker's vocal tract during the production of vowels, and so they would be comparable directly. This process is called Vowel Formant Normalisation (Flynn, 2011).

Thus, in this study the data was normalized using Labov ANAE Methods /Speaker-intrinsic method by using the NORM online vowel normalization suite (Thomas & Kendall, 2007). It computes a single grand mean for all speakers included in the study. It computes a scaling factor for each individual which is then used to modify each individual's vowel space rather than computing a set of non-Hertz-like values. In other words, since it is speaker-extrinsic, it is able to scale the original Hertz values as a part of its normalization process. The Labov method follows the formulas laid out by Labov, Ash, and Boberg (2006). A logarithmic grand mean, G, is calculated from the geometric mean of the natural log of the F1 and F2 values of all vowels for all speakers. A logarithmic mean value, S, is then calculated for each speaker by taking the natural log of the F1 and F2 values for all of that speaker's vowels. The anti-log of the difference, G - S, is taken for F, the scaling factor for that speaker. Each individual's formant values are then multiplied by the scaling factor F to obtain her or his normalized values.

Acoustic Measurements of Duration

Duration refers to the time occupied in the production of a sound. The way of measuring is so complicated because the delamination of sound units acoustically needs segmentation of the utterances, so the impression of sound would be complex even when it occurs, the duration rate given may not correspond to linguistic judgements of the sound length. The absolute duration values of vowel sound not be sought, because the durations will vary concerning the context, the utterances, whether it is followed by voiceless or voiced consonants or whether it is pronounced faster slowly etc. (Ali, 2013).

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. To avoid the possible effect on duration of contextual factors such as number of syllables and following consonantal segment, all vowel tokens appeared in one syllable words. To ensure a measure of consistency in the rate of speech, all subjects were instructed to read at a normal speed. Of these. The measurements came from the tiers of words and vowels. A PRAAT: "doing Phonetics by Computer" available online at https://www.fon.hum.uva.nl/praat/, was used to extract both word and vowel. The temporal data of Iraqi EFLLs are compared native English speakers' data published by walls (1962).

Results and discussion

This section is prepared to discuss the temporal features of English vowels as produced by Iraqi students speaking two dialects (gilit and qeltu). 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 7: Mean duration(s) of English monophthongs produced by Iraqi EFLLs speaking gilit and qeltu dialects (left and middle columns, respectively) and English speaker (right column)

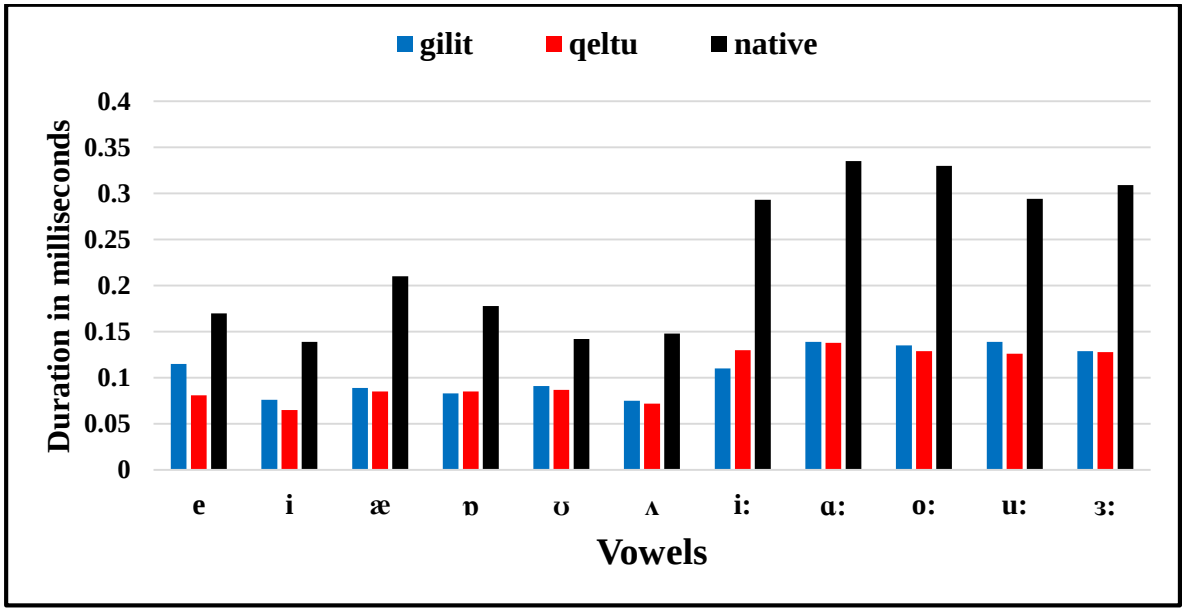

Table 5: Mean vowel duration for the eleven English vowels produced by Iraqi informants speaking gilit and qeltu dialects and native speakers of English

Vowels	**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 in Figure 4.1 and Table 4.1 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 /^/ (see Table 4.2). 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 4.1 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 4.2).

It can be concluded vowels were uttered by *gilit* male/female speakers longer than *qeltu* male/female speakers except /ɒ, i:/. There were differences between the two Iraqi groups in the temporal features of vowels articulation. Thereby, T-test has been implemented to discover whether these variations in the production of English vowels have a statistical implementations or they come by chance.

Table 6: 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

Figure 4.2 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.

conclusions

Learners' native dialect has been found to affect their realization of English vowels. gilit speakers produced vowels longer than their qeltu peers except in the case of /^,ɒ

,o:/. Iraqi learners speaking gilit and qeltu dialects reflected no statistically significant differences in the temporal aspects of vowels between the two groups ($p > 0.05$).

The spectral features of vowels are being affected by Learners' native dialect. 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:/ ($p<0.05$).