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A Descriptive study between Iraqi EFL Learners and English Native Speakers in Pronouncing English Vowels: A Contrastive Study

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Abstract:

Iraqi speakers of English face some phonetic and phonological difficulties that are related with the production of different speech sounds especially English vowel sounds. The difficulty in producing these sounds is related to several matters. Firstly, the complex orthographic system of English. Secondly is the inconsistent relationship between spelling and pronunciation. Third shows the differences between the two different sound systems (Arabic and English). The regional differences and the effect of the native language on the second language can be considered as two of the real problems in pronunciation.

المستخلص

يواجه العراقيون متعلمين اللغة الانكليزية بعض المشاكل الصوتية. تتمثل هذه المشاكل في نطق أصوات اللغة الانكليزية المختلفة وخصوصا أصوات اللين. وتكمن صعوبة نطق معظم تلك الأصوات في نظام الكتابة المعقد للغة الانكليزية وكذلك في العلاقة الغير متوازنة في اللغة الانكليزية بين نظام الإملاء والتلفظ. إضافة الى اختلاف الأنظمة الصوتية للغتين العربية والانكليزية. وقد مثلت الاختلافات اللغوية مشاكل حقيقية في التلفظ وخاصة في مجال تأثيرات اللغة الأم على اللغة الثانية.

1. Introduction

The most important part of learning English as a second language rests on pronunciation. Speaking is an important factor in learning English appropriately (Gussenhoven and Jacobs, 1998). This means that studying errors of English pronunciation is a valuable source to which provide information on student's errors.

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These help teachers to correct errors and improve the effectiveness in teaching English pronunciation. The problem of the study is that non –native speakers of English come across certain difficulties in producing speech sounds especially vowels. These difficulties appear among non-native speakers from the fact that the sound systems of English and Arabic are different in many ways . English vowel sounds are different from Arabic vowel sounds in number, in the way they are produced , and even many English vowels don't exist in Arabic sound system.

The objectives of the study are :

1-It aims to investigate the difficulties of English pronunciation chanced by Imari speakers when pronouncing English vowel sounds.

2-The aim of this study is pedagogical because the study accounts the difficulties of English pronunciation and helps a great deal in understanding vowel sounds by giving some suggestions for learners and syllabus designers that help to improve pronunciation .

The hypothesis of the study are the following :

1-Iraqi Imari speakers of English will face difficulty in pronouncing or producing English vowel sounds .

2-They will face difficulty in producing diphthongs and triphthongs more than in producing pure vowels .

The study is limited to Iraqi Imari people and it is focused on the pronunciation of just vowel sounds .

2.The Theoretical Part

2.1. The production of vowels

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Speech sounds are produced by obstructing with a body of moving air. Phoneticians describe a body of moving air used in speech production by the term airstream mechanism. Airstream mechanism can be defined as the way in which the airflow that provides the power for speech production is created . This airstream mechanism is called the pulmonic egressive airstream (Katamba , 1989 :2) .

Pulmonic egressive airstream means the air that is created in the lungs and then goes out of the lungs up to the trachea and gets out through the mouth , or through the nose , or through both (Sethi and Dhamija , 2006 : 2) .

The air that is created in the lungs undergoes many different modifications in the upper stages of the respiratory tract , carried by the actions of the vocal folds and the articulatory organs before it acquires the quality of a speech sound (Daniel , I. O ,2011 :6) . Low , E (2015:21) explains that in order to produce a speech sound , the air from the lungs passes through the trachea to the larynx . In the larynx , the air passes through the vocal folds . If the vocal folds are open and there is no vibration , the sounds that come out are voiceless , while if the vocal folds come together and vibrate , the sounds that emerge are voiced . All vowels are voiced . Some consonants are voiced and the others are voiceless.

The sounds which the organs of speech are able of uttering are of two main types . The first type is called vowels and the second type is called consonants . From the phonetic point of view , consonants are the sounds that articulated by temporary closure in the airflow which passes from larynx to lips . The closure made by the articulators may be complete or partial . But vowels are the sounds that are articulated without any closure in the airstream (Roach , 2001: 74).

Crystal (2008 : 103) illustrates that consonants are sounds that articulated by a narrowing in the airflow so that the air is either completely blocked or partially

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to cause friction .Sethi and Dhamija (2006:14) show that in the production of vowels , there is no narrowing

of a degree that would cause audible friction . According to Shandera and Burleigh (2011:31) , vowels are produced without any obstruction of airstream . While consonants are produced with three degrees of closure : complete closure , close approximation and open approximation (Carr , 1993 : 32).

Phonologically speaking ,consonants occupy the onset and the coda positions in the syllable ; whereas , vowels occupy the nucleus position in the syllable . For example , the word (pear) /peə/ begins with a consonant and this consonant represents the onset of the syllable , followed by the diphthong which occupies the nucleus of the syllable (Casas , R.M, 2014:15) . According to Abercrombie (1967:39) a vowel is the center or the main part of the syllable whereas a consonant represents the marginal part .

Low , E (2015:24)points out that consonants can be described by the following three main characteristics :

1-Voicing means whether the consonant sound is voiced or voiceless . It depends on the vibration of the vocal folds . If the vocal folds are vibrated, the sound produced is called voiced . If the vocal folds are not vibrated , the sound produced is called voiceless sound.

2-Manner of articulation means the way of how
the sound is produced There are several manners or ways for consonant production as shown in Katamba (1989 : 6-7) .

a.Stop

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This manner shows that the articulators come together in order to cut off the airstream . / p , b , t , d , k , g / are stops or plosives.

b-Fricative

It shows that the articulators come close to each other leaving a narrow space between them to allow air to pass between them and cause audible plosion (friction) . English fricatives are / f ,v θ, ð , s , z, ʃ , ʒ / .

c-Affricate

The articulators come together in order to cut off the airstream , then they separate from each other . / tʃ / and / dʒ / are affricates .

d-Approximant

The articulators are brought near each other but there is a great opening between them to allow air to escape without friction . / r, w , j, l / are approximants.

e-Nasals

Nasals are sounds in which the velum is lowered and the air escapes through the nose . Nasal sounds are / m , n , ŋ / .

f-Lateral

A lateral sound is a sound which is produced when the air is cut off by the tongue so that it passes through the sides of the mouth . / l / is lateral .

3-Place of articulation means the place at which the sound is produced. There are several places for sound production (Cruttenden , 2014 :29).

a-Bilabial

The two lips are the main articulators . Bilabial sound can be defined as a sound which is produced by the two lips . / p,b,m / are bilabial sounds .

b-Dental

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Dental sound is a sound which is articulated by the tongue tip with the upper front teeth . / θ, ð / are dentals.

c-Alveolar

Alveolar sound is a sound which is produced with the tongue tip and blade touch the alveolar ridge . /s,z,t,d,n,l / are alveolar sounds.

d-Post-alveolar

The blade of the tongue articulates with the back part of the alveolar-ridge./ ʃ , ʒ , tʃ , dʒ / are post-alveolar sounds.

d-Retroflex

The tip of the tongue touches the alveolar-ridge . /r/ is a retroflex sound.

e-Palatal

The front of the tongue articulates with the soft palate . / j / is a palatal sound

f-Velar

It is a sound which is formed with the back of the tongue touching the soft palate /k , g , ŋ / are velar sounds.

g-Glottal

It is a sound which is produced at the glottis . Glottis is the opening between the vocal folds . / h / is a glottal sound.

2.2.The Description of vowels

Katamba (1989 : 8) points out that vowels are more difficult to describe than consonants because there is no closure in the vocal tract during their production . There are three important features for vowel description . These features are shown

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in Skandera and Burleigh (2005:32).

2.2.1. Closeness / openness or tongue height

It means the distance between the tongue and the palate. If the tongue is high, it is close to the palate. The produced vowel is called close vowel. If the tongue is low, it is open to the palate. This means that there is an open gap between the tongue and the palate. The produced vowel is called open vowel. Close vowels are / I, i: ʊ, u: /. Open vowels are / æ, ɒ, ɑ: /. There are also three intermediate extremes or levels. If the tongue is in a half-high or a mid-high position, the resulted sound is a mid-close or a half –close vowel. If the tongue is in a mid-low or a half-low position, the resulted sound is a mid-open vowel or a half-open vowel. If the tongue is between half-high and half-low, the produced sound is a mid-vowel. Mid vowels are /e, ɔ, ʌ, ə, ɜ: /.

2.2.2. Frontness /backness

It refers to which part of the tongue is raised the highest. If the front part of the tongue is raised the highest, the resulted sound is a front vowel. If the back part of the tongue is raised the highest, the resulted sound is a back vowel. If the center of the tongue is raised the highest, the resulted sound is a central vowel.

Front vowels are / ɪ , i: ,e, æ / .

Central vowels are / ə , ʌ , ɜ: / .

Back vowels are /u: ,ʊ , ɒ, ɔ: , ɑ:/

2.2.3.The shape of the lips

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The lips can be spread , neutral , or rounded . Roach (2009:13)states three cases . Spread , where the lips are away from each other . This is clearly seen in the production of vowel /i: / . Neutral , where the lips are in the normal shape as in the production of / e, ʌ, ə / . Rounded , where the lips are pushed forward as in the production of /u: ʊ , , :ɔ , ɒ/.

2.3.Cardinal vowels

Roach (2009:12) notes that cardinal vowels are standard reference system . In order to describe the vowels of any language and compare the vowel systems of different languages more accurately , the British phonetician Daniel Jones discovered 18 reference points or vowels called the cardinal vowels . Cardinal vowels show the extremes of vowel quantity that the vocal tract is able to produce . It is so important to know that cardinal vowels are not sounds of a particular language , they are reference points or extremes by which we can describe all the vowels . They are of two different types : Primary and secondary (Shandera and Burleigh , 2005 :32-33).

Roach (2009:12) points that primary cardinal vowels are usual to most European languages speakers ; while secondary cardinal vowels are the sounds that are less usual to the speakers of most European languages. Primary cardinal vowels are [i, e, ɛ, a, ɑ , ɔ, o, u]. Secondary cardinal vowels are [y, ø, œ, ɶ, ɒ, ʌ, ɤ, ɯ, ɨ , ʉ] . Primary cardinal vowels are eight in number , secondary cardinal vowels are ten in number . We can describe primary and secondary cardinal vowels according to 1-tongue height 2-part of the tongue 3-shape of lips (De ,A. 1999: 12-13).

[i] and [u] are close vowels , [e] and [o] are close-mid vowels . [ɛ] and [ɔ] are open –mid vowels , [a] and [ɑ] are open vowels . [ɑ, ɔ,o,u] are back vowels . [a, ɛ,e,i] are front vowels . [i ,e, ɛ, ɑ, a] have unrounded lips . [ɔ,o,u] have rounded lips . Secondary cardinal vowels , [y, ɨ, ʉ, ɯ] are close vowels . [ø,

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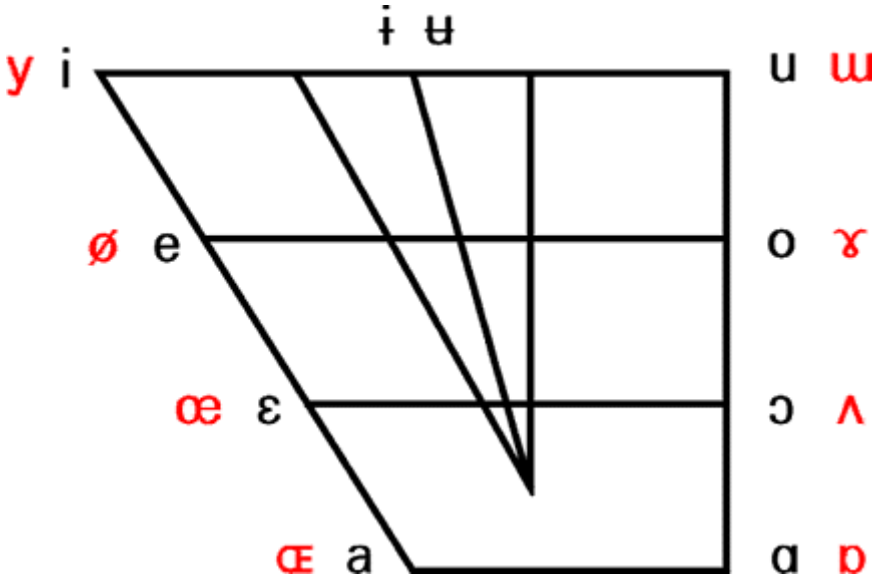
ɤ] are close-mid vowels . [œ] and [ʌ] are open –mid vowels . [ɶ] and [ɒ] are open vowels . Front vowels are [y, ø, œ, ɶ] . Central vowels are [ɨ]and[ʉ] . Back vowels are [ɒ, ʌ, ɤ , ɯ]. Secondary cardinal vowels which have unrounded lips are [y, ø, œ, ɶ, ɨ]. While secondary cardinal vowels which have rounded lips are [ɒ, ʌ, ɤ, ɯ, ʉ] .



Figure(1): Cardinal vowels

2.4. Classification of vowels

Pure vowels can be defined as a vowel which remain constant and does not glide (Roach , 2009 :17) .Through the production of pure vowels , the organs of speech remain motionless for a remarkable period of time . Vowels which have a

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consistent unchanging quality from the beginning of its production to the end are called pure vowels (Giegerich, 1992: 17).

Birjandi and Nodoushan (2005:62) shows that there are two main kinds of vowels on the basis of their length: long vowels and short vowels. The distinction between them depends on the duration of time that the speakers spend in articulating or producing them. In producing long vowels, the time is longer than the time spent in articulating short vowels. Length is represented by putting a colon (:) after the sound . In British English, there are five long vowels.

1-/i:/ as in sheep / ʃi:p/

2-/ ɜ: / as in fur / f ɜ: /

3-/ ɔ: / as in four / f ɔ: /

4-/ ɑ:/ as in car / k ɑ: /

5-/u:/ as in boot / bu:t/

There are seven short vowels .

1-/ ɪ/ as in hit /hɪt/

2-/e/ as in hen /hen/

3-/ æ/ as in hat / hæt/

4-/ ə/ as in ago / əgəʊ/

5-/ʊ/ as in book / bʊk/

6-/ ʌ/ as in bus / bʌs/

7-/ ɒ/ as in hot /hɒt/

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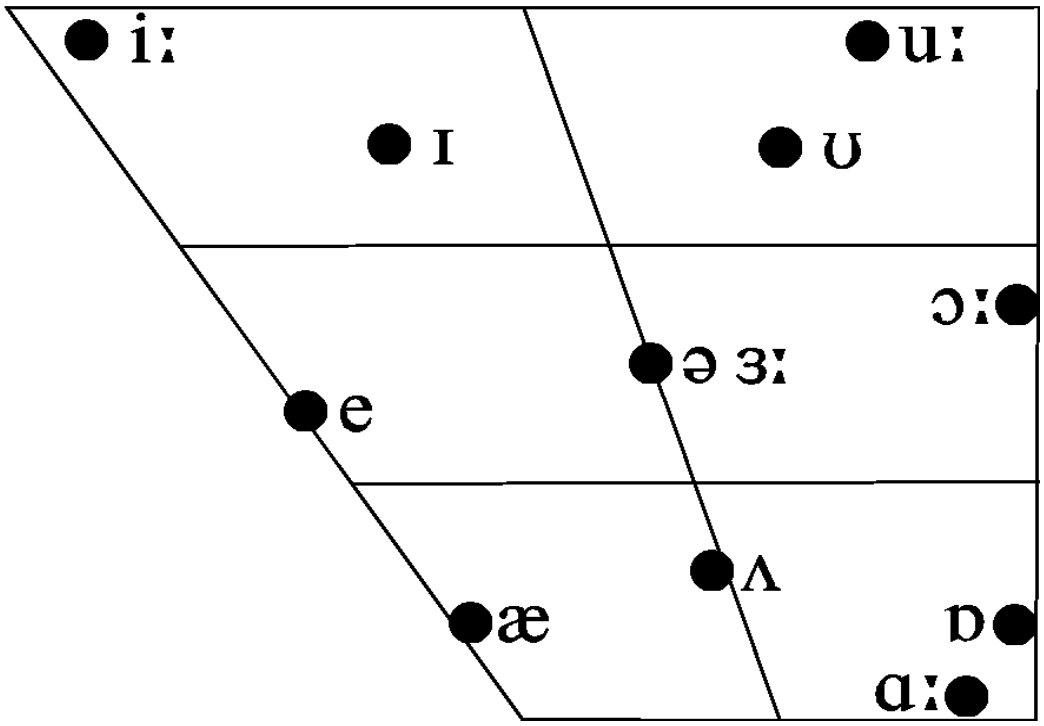
2.4.1. Pure Vowels

Pure vowels can be described according to the three criteria that are explained in the previous section . The height of the tongue , which part of the tongue is raised the highest and lips rounding. The following diagram shows the positions of the English long vowels . (Jones , 2006 :Viiii)



Figure(2):BBC English Pure Vowels

1- The vowel / ɪ / , classified as short vowel , just above half-close position , front , and unrounded or spread.

2- The vowel /e / is short , between half-close and half-open position , front , and unrounded.

3- The vowel / æ / is short , just above the open position , front, and unrounded.

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4- The vowel / ʌ / is short , just below the half-open position , central ,and unrounded.

5- The vowel / ɒ / is short , between half-open and half-close , back , and rounded.

6- The vowel / ʊ / is short , just above half close , back , and rounded.

7- The vowel / ə / is short , between half-open and half-close , central , and rounded.

Long vowels are the following

1-/i:/ is close , front , and unrounded.

2-/ ɑ: / is open , back , and unrounded.

3-/ ɔ: / is just below the half-close position , back ,and rounded.

4-/u: / is just below the close position , back , and rounded.

5-/ ɜ: / is between half-close and half-open , central ,and unrounded .

2.4.2.Diphthongs

They are sounds that consist of a glide or movement from one single vowel to another single vowel . The first part of a diphthong is longer and stronger than the second part . English diphthongs include the following five diphthongs (Roach , 2009 :17-18).

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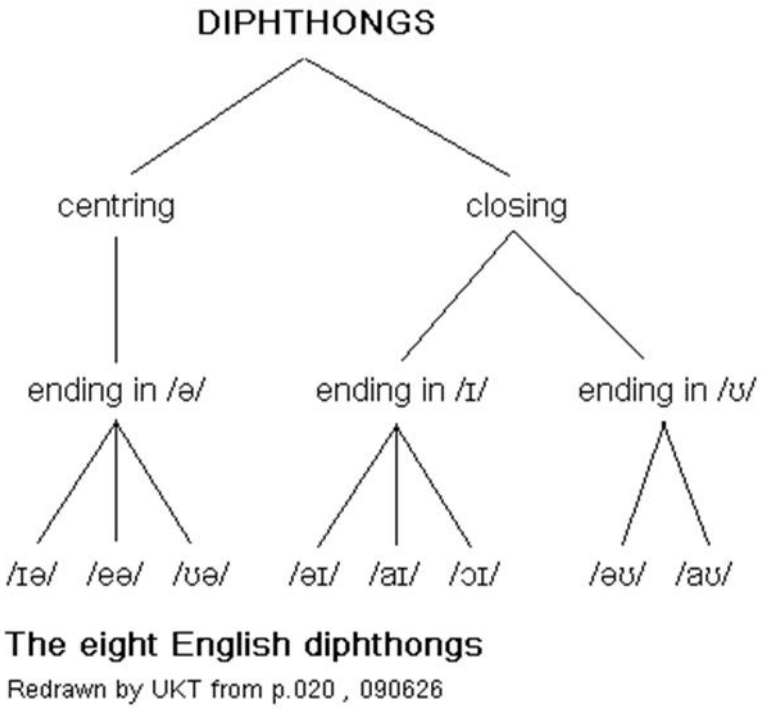

Figure (3): English diphthongs

1-/ ɪə / as in here /hɪə/

2-/eə/ as in hair /heə/

3-/ ʊə / as in poor / pʊə/

4-/eɪ / as in day / deɪ /

5-/ aɪ / as in my / maɪ/

6-/ ɔɪ / as in boy / bɔɪ /

7-/ əʊ / as in know / nəʊ /

8-/aʊ / as in cow / kaʊ /

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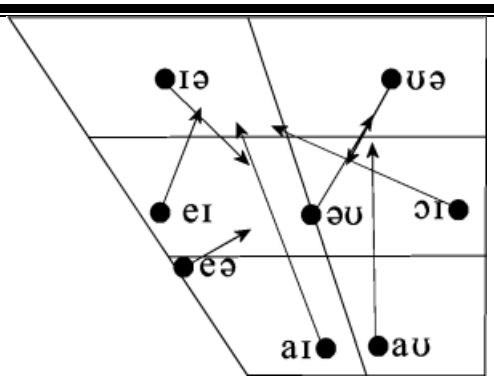

Figure(4) : The positions of English Diphthongs

1-/ ɪə / , the starting point of this vowel is usually higher than the position of the /ɪ / monophthong in bit / bɪt /.

2-/eə / , this diphthong starts with a vowel sound that is more open than the of /e / get /get/.

3-/ ʊə / , the starting point of this vowel is higher than the position of the vowel in / ʊ/ put /pʊt/ .

4-/eɪ / , the starting point of this vowel is the same as the / e/ of men /men/ .

5-/ aɪ / , this vowel begins with an open vowel which is between front and back ; it / ʌ / is similar to of cut / kʌt / .

6-/ ɔɪ / , the beginning of this vowel is more open than /ɔ: / of born / bɔ:n/.

7-/ əʊ/, the starting point of this vowel is the same as /ə / as in ago /əgəʊ/.

8-/ aʊ / , this vowel begins with a vowel that is similar to /a: / as in heart /ha:t/.

2.4.3. Triphthongs

Birjandi and Nodoushan (2005:63) define triphthongs as sounds that consist of a movement or glide from one vowel to another and then to a third . They are similar to diphthong but the difference is that triphthongs have an extra schwa at the

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end of the diphthongs . They are five triphthongs.

1-/ aʊə/ as in power / paʊə /

2-/ aɪə/ as in liar / laɪə/

3-/eɪə/ as in layer / leɪə/

4-/ ɔɪə/ as in loyal / lɔɪəl /

5-/ əʊə / as in mower / məʊə /

The description of triphthongs

1-/ aʊə/, the starting point for this sound is similar to / ɑ: / , continue to glide towards the back close position /ʊ / and then to mid-central vowel /ə / .

2-/ aɪə / , the starting point is similar to / ɑ: / , goes on to move towards front close unrounded /ɪ / then to / ə / .

3- /eɪə/ , the starting point is similar to / e / then to / ɪ / then to / ə/.

4-/ ɔɪə / , the beginning of this vowel is similar to /ɔ: / then to /ɪ / and then to / ə / .

5-/ əʊə / , the vowel begins with /ə / , goes on to move towards close back rounded vowel / ʊ / then to /ə / . (Roach , 2009 :19) .

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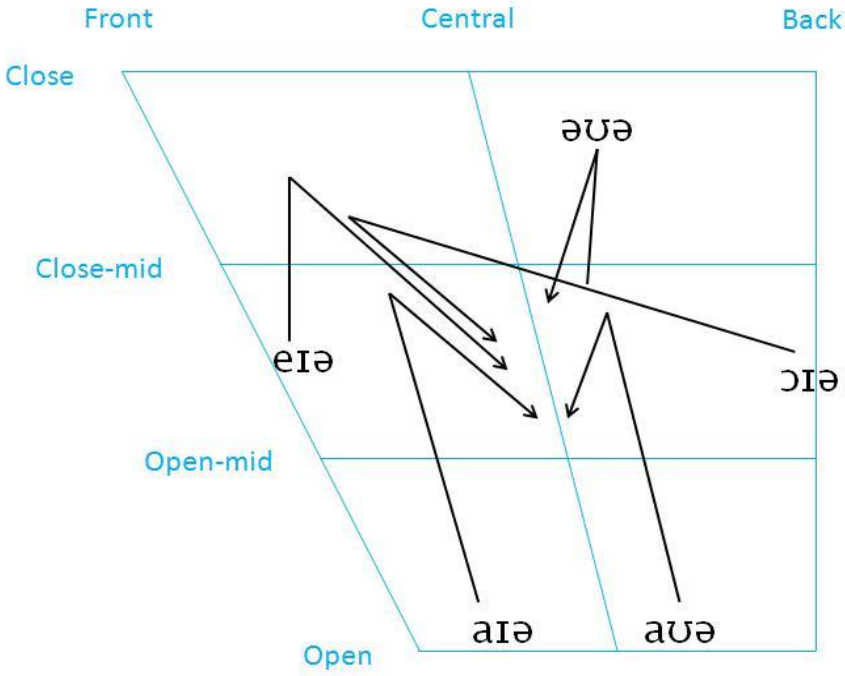

Figure(5) : The positions of English triphthongs

3.The Experimental Part

3.1.Selection of stimuli

The experiment was made in the form of a test consisting of BBC British English vowels (pure , diphthong and triphthong) carried by 25 words . The words were written on paper so the speaker could see it before starting reading them .All the stimuli items were taken from Roach (2009:170-171) . These words were given to the students to read individually and the students were told that their pronunciation would be recorded to be used in the research study .The students were instructed to speak clearly and carefully in order to be understood . They were asked to pronounce each word twice to later select the best recording for the analysis technique .

3.2. The subjects

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The subjects were first stage students of the academic year (2016-2017) of the department of English , college of Education , university of Missan . They were all Imari Iraqi speakers because the study is limited for Imari speakers . All the subjects took part in the speech recording session . They were free of any speech anomalies or any neurologic or muscular condition that would be expected to affect their ability to produce speech . The number of the subjects that took part in the experiment is 20 .

3.3. CD-Tape recording

All the individual recordings were made by using a high quality MP3 Stereo recorder (Sony MP3 IC Recorder). The sony IC recorder has a Hi-speed USB direct pc link . It also has a large storage memory , i.e. 50 hours maximum recording time .After conducting all the required recording sessions , the pronunciation of the words by each speaker saved in a particular file .The recorded words would be analyzed in order to show the duration , frequency , and pitch of all English vowel sounds .

3.4. Praat

It is " a computer program with which you can analyze , synthesize , manipulate speech , and create high-quality pictures for your articles and thesis " Boersma and Weenink (2002:45) .It has two main pictures or windows .The first is " praat objects " . It is used for saving audio files and for recording sounds . The second window is the praat window which is used for drawings the waves .

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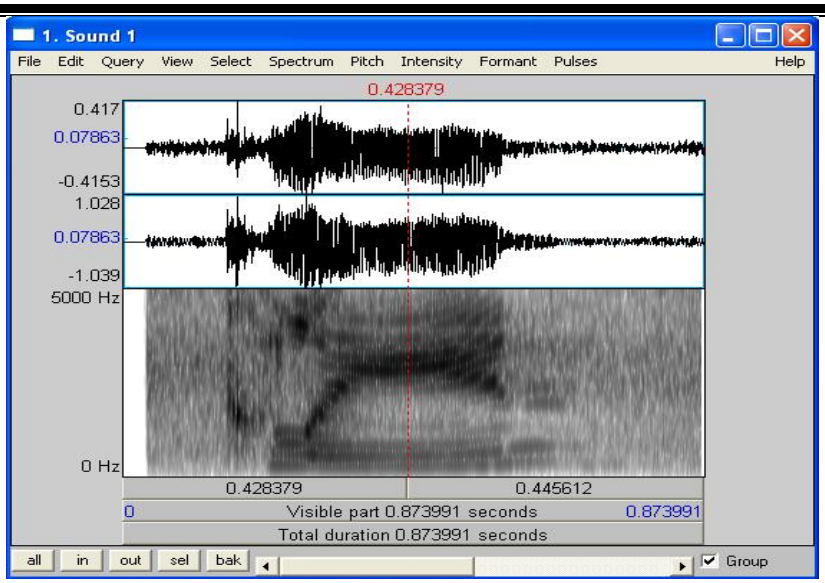

Figure (6) : praat picture

By using Praat , the researcher has measured the duration , the frequency , and the pitch of all the vowels pronounced by all the subjects . The researcher also has measured the duration , the frequency , and the pitch of all the vowels pronounced by the native speaker

Table (1) : The analysis of the sounds for the first student

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.105	221	76
/ ɒ /	0.142	222	79
/e /	0.194	220	76
/æ /	0.195	223	78
/ ɪ /	0.138	226	75
/ ʊ /	0.158	220	78
/ ə /	0.105	207	77
/ ɜ:/	0.186	211	75
/ u:/	0.135	214	76
/ ɔ:/	0.159	215	75

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/ ɑ : /	0.115	230	75
/ i: /	0.236	232	74
/ eɪ /	0.217	217	76
/ aɪ/	0.236	203	75
/ ɔɪ /	0.198	217	79
/ əʊ/	0.258	231	79
/ aʊ/	0.206	210	79
/ ɪə/	0.257	215	79
/ eə/	0.225	207	78
/ʊə /	0.209	213	76
/eɪə/	0.268	214	73
/ aɪə/	0.258	226	79
/ɔɪə/	0.300	207	97
/əʊə/	0.265	208	78
/ aʊə/	0.191	199	76

Table (2) : The analysis of the sounds for the second student

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.349	203	74
/ ɒ /	0.273	212	79
/e /	0.238	209	79
/æ /	0.182	195	79
/ ɪ /	0.160	188	79
/ ʊ /	0.238	219	80
/ ə /	0.034	201	79
/ ɜ:/	0.195	198	78
/ u:/	0.258	220	81
/ ɔ:/	0.282	209	80
/ ɑ : /	0.224	220	81

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/ iː /	0.244	203	82
/ eɪ /	0.289	203	80
/ aɪ/	0.230	235	76
/ ɔɪ /	0.273	201	80
/ əʊ/	0.356	221	80
/ aʊ/	0.290	231	82
/ ɪə/	0.244	222	80
/ eə/	0.273	224	79
/ʊə /	0.276	221	80
/eɪə/	0.194	249	78
/ aɪə/	0.268	220	80
/ɔɪə/	0.360	227	81
/əʊə/	0.310	232	80
/ aʊə/	0.261	229	80

Table (3) : The analysis of the sounds for the third student

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.191	277	75
/ ɒ /	0.248	272	79
/e /	0.188	258	80
/æ /	0.250	288	80
/ ɪ /	0.180	277	79
/ ʊ /	0.284	280	79
/ ə /	0.103	218	79
/ ɜː/	0.160	261	82
/ uː/	0.176	262	82
/ ɔː/	0.250	248	81
/ ɑ : /	0.247	339	82
/ iː /	0.239	284	81

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/ eɪ /	0.209	271	81
/ aɪ/	0.270	335	79
/ ɔɪ /	0.228	303	81
/ əʊ/	0.281	278	81
/ aʊ/	0.196	316	79
/ ɪə/	0.276	286	79
/ eə/	0.295	291	79
/ʊə /	0.247	283	81
/eɪə/	0.301	261	80
/ aɪə/	0.300	236	79
/ɔɪə/	0.290	311	81
/əʊə/	0.380	250	80
/ aʊə/	0.341	230	79

Table (4) : The analysis of the sounds for the fourth student

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.163	281	71
/ ɒ /	0.237	279	71
/e /	0.150	283	75
/æ /	0.149	272	73
/ ɪ /	0.106	294	73
/ ʊ /	0.167	284	73
/ ə /	0.073	299	76
/ ɜ:/	0.200	270	77
/ u:/	0.130	286	76
/ ɔ:/	0.184	281	75
/ ɑ : /	0.194	272	77
/ i: /	0.194	270	77
/ eɪ /	0.127	258	76

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/ aɪ/	0.254	272	75
/ ɔɪ /	0.280	262	75
/ əʊ/	0.125	279	75
/ aʊ/	0.177	276	75
/ ɪə/	0.208	269	75
/ eə/	0.187	267	78
/ʊə /	0.278	262	76
/eɪə/	0.310	274	76
/ aɪə/	0.210	277	77
/ɔɪə/	0.295	268	76
/əʊə/	0.240	343	78
/ aʊə/	0.198	268	74

Table (5) : The analysis of the sounds for the fifth student

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.233	285	77
/ ɒ /	0.144	278	77
/e /	0.099	290	80
/æ /	0.175	256	78
/ ɪ /	0.093	273	78
/ ʊ /	0.188	270	76
/ ə /	0.153	249	73
/ ɜ:/	0.181	262	77
/ u:/	0.219	271	76
/ ɔ:/	0.204	277	77
/ ɑ : /	0.195	270	79
/ i: /	0.231	270	78
/ eɪ /	0.159	258	76
/ aɪ/	0.183	258	78

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/ ɔɪ /	0.225	266	75
/ əʊ/	0.206	274	74
/ aʊ/	0.193	271	76
/ ɪə/	0.228	259	78
/ eə/	0.210	255	76
/ʊə /	0.196	274	75
/eɪə/	0.310	259	76
/ aɪə/	0.390	258	75
/ɔɪə/	0.311	261	78
/əʊə/	0.390	311	76
/ aʊə/	0.340	315	73

Table (6) : The analysis of the sounds for student number six

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.257	245	69
/ ɒ /	0.227	242	75
/e /	0.124	233	78
/æ /	0.129	234	79
/ ɪ /	0.160	230	77
/ ʊ /	0.165	249	76
/ ə /	0.092	222	74
/ ɜ:/	0.161	233	79
/ u:/	0.091	248	81
/ ɔ:/	0.131	240	81
/ ɑ : /	0.121	233	81
/ i: /	0.148	236	80
/ eɪ /	0.172	247	82
/ aɪ/	0.164	237	80

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/ ɔɪ /	0.188	257	82
/ əʊ/	0.183	251	81
/ aʊ/	0.149	257	82
/ ɪə/	0.138	243	81
/ eə/	0.119	242	81
/ʊə /	0.206	225	77
/eɪə/	0.431	225	77
/ aɪə/	0.368	230	75
/ɔɪə/	0.430	243	76
/əʊə/	0.364	323	77
/ aʊə/	0.269	181	77

Table (7) : The analysis of the sounds for student number seven

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.159	242	7479
/ ɒ /	0.175	261	81
/e /	0.129	268	80
/æ /	0.274	235	80
/ ɪ /	0.137	261	82
/ ʊ /	0.211	261	81
/ ə /	0.086	238	77
/ ɜ:/	0.220	254	80
/ u:/	0.109	277	83
/ ɔ:/	0.218	258	82
/ ɑ : /	0.166	246	79
/ i: /	0.282	246	80
/ eɪ /	0.205	255	79
/ aɪ/	0.209	249	81
/ ɔɪ /	0.249	241	78

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/ əʊ/	0.260	261	81
/ aʊ/	0.247	244	82
/ ɪə/	0.264	258	80
/ eə/	0.248	266	83
/ʊə /	0.200	249	78
/eɪə/	0.268	250	79
/ aɪə/	0.311	243	78
/ɔɪə/	0.400	234	77
/əʊə/	0.346	244	79
/ aʊə/	0.433	230	76

Table (8) : The analysis of the sounds for student number eight

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.104	151	75
/ ɒ /	0.101	141	75
/e /	0.068	146	73
/æ /	0.120	144	74
/ ɪ /	0.076	147	74
/ ʊ /	0.100	161	75
/ ə /	0.041	141	69
/ ɜ:/	0.111	143	77
/ u:/	0.073	139	74
/ ɔ:/	0.134	139	74
/ ɑ : /	0.135	147	76
/ i: /	0.128	143	76
/ eɪ /	0.169	139	72
/ aɪ/	0.176	138	74
/ ɔɪ /	0.130	139	74
/ əʊ/	0.124	160	76

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/ aʊ/	0.110	146	76
/ ɪə/	0.166	143	75
/ eə/	0.104	146	76
/ʊə /	0.100	143	75
/eɪə/	0.168	141	77
/ aɪə/	0.078	163	75
/ɔɪə/	0.142	145	75
/əʊə/	0.122	145	76
/ aʊə/	0.123	159	74

Table (9) : The analysis of the sounds for student number nine

Sound	Duration	Fo in(Hz)	Pitch
/ ʌ /	0.075	147	75
/ ɒ /	0.128	139	75
/e /	0.082	145	75
/æ /	0.115	135	77
/ ɪ /	0.078	139	76
/ ʊ /	0.144	141	76
/ ə /	0.068	142	67
/ ɜ:/	0.143	141	78
/ u:/	0.156	149	77
/ ɔ:/	0.166	164	76
/ ɑ : /	0.126	140	79
/ i: /	0.157	138	75
/ eɪ /	0.109	150	74
/ aɪ/	0.199	141	66
/ ɔɪ /	0.140	145	69
/ əʊ/	0.092	146	75
/ aʊ/	0.068	148	75

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/ ɪə/	0.211	162	72
/ eə/	0.145	139	66
/ʊə /	0.064	141	77
/eɪə/	0.139	144	75
/ aɪə/	0.132	135	72
/ɔɪə/	0.140	139	70
/əʊə/	0.200	140	75
/ aʊə/	0.122	132	74

Table (10) : The analysis of the sounds for student number ten

Sound	Duration	Fo(Hz)	Pitch
/ ʌ /	0.110	128	75
/ ɒ /	0.135	120	75
/e /	0.101	118	75
/æ /	0.176	121	76
/ ɪ /	0.089	114	76
/ ʊ /	0.120	120	78
/ ə /	0.132	132	76
/ ɜ:/	0.141	129	76
/ u:/	0.164	116	75
/ ɔ:/	0.109	130	75
/ ɑ : /	0.132	118	73
/ i: /	0.121	127	74
/ eɪ /	0.123	121	75
/ aɪ/	0.130	119	73
/ ɔɪ /	0.103	133	75
/ əʊ/	0.144	134	74
/ aʊ/	0.108	124	77

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/ ɪə/	0.141	112	76
/ eə/	0.156	117	72
/ʊə /	0.164	108	75
/eɪə/	0.111	132	76
/ aɪə/	0.123	138	75
/ɔɪə/	0.090	139	74
/əʊə/	0.116	113	74
/ aʊə/	0.143	135	75

Table (11) : The analysis of the sounds for student number eleven

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	0.089	143	75
/ ɒ /	0.128	139	75
/e /	0.064	144	75
/æ /	0.120	137	76
/ ɪ /	0.146	140	76
/ ʊ /	0.118	143	76
/ ə /	0.061	138	76
/ ɜ:/	0.130	123	75
/ u:/	0.128	137	75
/ ɔ:/	0.116	149	72
/ ɑ : /	0.140	134	74
/ i: /	0.118	126	73
/ eɪ /	0.120	132	72
/ aɪ/	0.090	131	72
/ ɔɪ /	0.140	145	74
/ əʊ/	0.133	139	76
/ aʊ/	0.123	143	76
/ ɪə/	0.125	132	75

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/ eə/	0.054	129	74
/ʊə /	0.132	137	77
/eɪə/	0.209	143	75
/ aɪə/	0.343	132	78
/ɔɪə/	0.423	144	78
/əʊə/	0.424	140	76
/ aʊə/	0.587	134	75

Table (12) : The analysis of the sounds for student number twelve

Sound	Duration	FO in (Hz)	Pitch
/ ʌ /	0.110	128	76
/ ɒ /	0.135	120	75
/e /	0.155	118	75
/æ /	0.176	121	76
/ ɪ /	0.085	114	75
/ ʊ /	0.109	129	77
/ ə /	0.154	130	73
/ ɜ:/	0.166	112	73
/ u:/	0.123	108	74
/ ɔ:/	0.154	105	72
/ ɑ : /	0.163	122	76
/ i: /	0.134	121	76
/ eɪ /	0.105	116	76
/ aɪ/	0.122	102	74
/ ɔɪ /	0.166	124	75
/ əʊ/	0.133	117	75
/ aʊ/	0.143	104	76
/ ɪə/	0.111	124	72
/ eə/	0.119	127	73

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/ʊə /	0.165	113	74
/eɪə/	0.145	106	75
/ aɪə/	0.124	130	76
/ɔɪə/	0.144	129	76
/əʊə/	0. 134	112	75
/ aʊə/	0.089	107	75

Table (13) : The analysis of the sounds for student number thirteen

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	0.104	135	75
/ ɒ /	0.073	136	75
/e /	0.110	133	76
/æ /	0.123	143	76
/ ɪ /	0.121	140	77
/ ʊ /	0.089	141	67
/ ə /	0.134	139	75
/ ɜ:/	0.105	132	75
/ u:/	0.111	127	74
/ ɔ:/	0.076	132	73
/ ɑ : /	0.108	121	72
/ i: /	0.104	130	77
/ eɪ /	0.133	132	76
/ aɪ/	0.113	125	76
/ ɔɪ /	0.125	109	75
/ əʊ/	0.102	117	75
/ aʊ/	0.145	143	75
/ ɪə/	0.143	140	75
/ eə/	0.123	143	74
/ʊə /	0.111	125	72

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/eɪə/	0.107	137	73
/ aɪə/	0.123	146	76
/ɔɪə/	0.120	143	77
/əʊə/	0.132	132	75
/ aʊə/	0.121	133	75

Table (14) : The analysis of the sounds for student number fourteen

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	0.102	143	77
/ ɒ /	0.132	140	77
/e /	0.107	132	76
/æ /	0.142	130	74
/ ɪ /	0.124	127	77
/ ʊ /	0.102	109	75
/ ə /	0.122	117	75
/ ɜ:/	0.109	118	75
/ u:/	0.103	123	75
/ ɔ:/	0.132	132	75
/ ɑ : /	0.133	124	73
/ i: /	0.124	145	73
/ eɪ /	0.145	120	76
/ aɪ/	0.144	121	72
/ ɔɪ /	0.140	132	75
/ əʊ/	0.134	133	77
/ aʊ/	0.122	134	77
/ ɪə/	0.105	102	75
/ eə/	0.122	105	75
/ʊə /	0.114	118	74
/eɪə/	0.145	122	73

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/ aɪə/	0.133	128	74
/ɔɪə/	0.089	134	75
/əʊə/	0.109	140	75
/ aʊə/	0.143	139	75

Table (15) : The analysis of the sounds for student number fifteen

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	0.109	123	73
/ ɒ /	0.111	143	73
/e /	0.132	144	74
/æ /	0.126	109	73
/ ɪ /	0.124	127	68
/ ʊ /	0.133	135	75
/ ə /	0.135	120	75
/ ɜ:/	0.176	132	75
/ u:/	0.109	122	75
/ ɔ:/	0.165	119	75
/ ɑ : /	0.113	123	75
/ i: /	0.145	114	75
/ eɪ /	0.144	120	77
/ aɪ/	0.154	130	76
/ ɔɪ /	0.109	134	76
/ əʊ/	0.108	137	77
/ aʊ/	0.104	117	77
/ ɪə/	0.112	123	77
/ eə/	0.121	132	73
/ʊə /	0.132	144	74
/eɪə/	0.142	145	72
/ aɪə/	0.143	122	77

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/ɔɪə/	0.114	143	75
/əʊə/	0.080	146	76
/ aʊə/	0.089	109	76

Table (16) : The analysis of the sounds for student number sixteen

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	0.114	143	75
/ ɒ /	0.128	280	79
/e /	0.064	218	79
/æ /	0.120	261	82
/ ɪ /	0.146	262	82
/ ʊ /	0.121	248	81
/ ə /	0.132	339	82
/ ɜ:/	0.142	284	81
/ u:/	0.143	271	81
/ ɔ:/	0.114	335	79
/ ɑ : /	0.080	303	81
/ i: /	0.089	278	81
/ eɪ /	0.220	316	79
/ aɪ/	0.109	286	79
/ ɔɪ /	0.218	291	79
/ əʊ/	0.166	283	81
/ aʊ/	0.282	261	80
/ ɪə/	0.205	236	79
/ eə/	0.209	311	81
/ʊə /	0.249	250	80
/eɪə/	0.260	230	79
/ aɪə/	0.166	143	75
/ɔɪə/	0.130	139	74

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/əʊə/	0.124	160	76
/ aʊə/	0.110	146	76

Table (17) : The analysis of the sounds for student number seventeen

Sound	Duration	FO in (Hz)	Pitch
/ ʌ /	0.034	132	75
/ ɒ /	0.195	117	75
/e /	0.258	104	76
/æ /	0.282	124	72
/ ɪ /	0.224	127	73
/ ʊ /	0.244	113	74
/ ə /	0.289	106	75
/ ɜ:/	0.230	130	76
/ u:/	0.273	129	76
/ ɔ:/	0.356	112	75
/ ɑ : /	0.290	107	75
/ i: /	0.244	187	77
/ eɪ /	0.273	189	76
/ aɪ/	0.276	240	75
/ ɔɪ /	0.194	217	78
/ əʊ/	0.180	277	79
/ aʊ/	0.284	280	79
/ ɪə/	0.103	218	79
/ eə/	0.160	261	82
/ʊə /	0.176	262	82
/eɪə/	0.250	248	81
/ aɪə/	0.248	272	79
/ɔɪə/	0.188	258	80
/əʊə/	0.250	288	80

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/ aʊə/	0.173	180	75

Table (18) : The analysis of the sounds for student number eighteen

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	0.112	227	75
/ ɒ /	0.122	229	75
/e /	0.132	222	76
/æ /	0.143	120	77
/ ɪ /	0.122	143	76
/ ʊ /	0.136	141	76
/ ə /	0.089	203	68
/ ɜ:/	0.111	109	80
/ u:/	0.109	144	80
/ ɔ:/	0.134	143	77
/ ɑ :/	0.154	123	76
/ i: /	0.142	163	75
/ eɪ /	0.123	133	75
/ aɪ/	0.111	201	73
/ ɔɪ /	0.109	145	74
/ əʊ/	0.127	134	74
/ aʊ/	0.148	143	72
/ ɪə/	0.107	115	73
/ eə/	0.210	106	75
/ʊə /	0.180	105	76
/eɪə/	0.136	109	77
/ aɪə/	0.154	150	77
/ɔɪə/	0.149	132	75
/əʊə/	0.141	129	75
/ aʊə/	0.202	130	75

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Table (19) : The analysis of the sounds for student number nineteen

Sound	Duration	FO in(Hz)	Pitch
/ ʌ /	113	210	75
/ ɒ /	0.139	170	75
/e /	0.120	261	82
/æ /	0.146	262	82
/ ɪ /	0.121	248	81
/ ʊ /	0.132	339	82
/ ə /	0.142	284	81
/ ɜ:/	0.143	271	81
/ u:/	0.114	335	79
/ ɔ:/	0.080	303	81
/ ɑ : /	0.089	278	81
/ i: /	0.220	316	79
/ eɪ /	0.109	286	79
/ aɪ/	0.120	124	75
/ ɔɪ /	0.108	137	77
/ əʊ/	0.104	117	77
/ aʊ/	0.112	123	77
/ ɪə/	0.121	132	73
/ eə/	0.132	144	74
/ʊə /	0.142	145	72
/eɪə/	0.143	122	77
/ aɪə/	0.114	143	75
/ɔɪə/	0.080	146	76
/əʊə/	0.089	109	76
/ aʊə/	0.143	143	77

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Table (20) : The analysis of the sounds for student number twenty

Sound	Duration	FO in (Hz)	Pitch
/ ʌ /	0.139	122	76
/ ɒ /	0.116	149	72
/e /	0.140	134	74
/æ /	0.118	126	73
/ ɪ /	0.120	132	72
/ ʊ /	0.090	131	72
/ ə /	0.140	145	74
/ ɜ:/	0.133	139	76
/ u:/	0.123	143	76
/ ɔ:/	0.125	132	75
/ ɑ : /	0.054	129	74
/ i: /	0.132	137	77
/ eɪ /	0.209	143	75
/ aɪ/	0.343	132	78
/ ɔɪ /	0.423	144	78
/ əʊ/	0.424	140	76
/ aʊ/	0.587	134	75
/ ɪə/	0.202	130	75
/ eə/	0.107	115	73
/ʊə /	0.210	106	75
/eɪə/	0.180	105	76
/ aɪə/	0.136	109	77
/ɔɪə/	0.154	150	77
/əʊə/	0.149	132	75
/ aʊə/	0.141	129	75

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Table (21) : The analysis of the sounds for the native speaker

Sound	Duration	FO in (Hz)	Pitch
/ ʌ /	0.165	122	76
/ ɒ /	0.195	149	72
/e /	0.167	134	74
/æ /	0.186	126	73
/ ɪ /	0.120	132	72
/ ʊ /	0.140	131	72
/ ə /	0.103	145	74
/ ɜ:/	0.336	139	76
/ u:/	0.219	143	76
/ ɔ:/	0.230	132	75
/ ɑ : /	0.295	129	74
/ i: /	0.132	137	77
/ eɪ /	0.209	243	75
/ aɪ/	0.343	232	78
/ ɔɪ /	0.423	241	78
/ əʊ/	0.424	340	76
/ aʊ/	0.587	334	75
/ ɪə/	0.202	230	75
/ eə/	0.307	215	73
/ʊə /	0.280	206	75
/eɪə/	0. 270	305	76
/ aɪə/	0.336	309	77
/ɔɪə/	0.254	233	77
/əʊə/	0.449	403	75
/ aʊə/	0.141	323	75

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3.5.Data analysis

The T-test is used to show whether there is any significant difference through the performance of all subjects for each word containing all English vowel sounds . It is also used to show whether there is any significant difference regarding the performance of all the subjects for each word containing English short vowels . And whether there is any significant difference regarding the performance of all the subjects for each word containing English diphthongs and triphthongs .

The level of significance is 0.05 for this research because according to t-test table , if there are twenty students performed in the test , 0.05 is the suitable level of significance to be used . The tabulated t-value at 0.05 with 21 degree of freedom is 1.96 (Walker , $1969:161$) .The value which is 1.96 and over will be significant and values that are less than 1.96 will be non-significant .

The data were analyzed by(SPSS) Statistical Package for Social Sciences . By using SPSS , the researcher works out to find the Mean , Standard deviation , and the t-value . According to the first word (mud) , eight students pronounced the word correctly / mʌd / . 12 students couldn't pronounce the word correctly as it is pronounced by the native speaker . Seven students pronounce the second word (cot) correctly as it is pronounced by the native speaker / kɒt / . While thirteen students couldn't pronounce the word correctly.

Eight students pronounce the third word correctly (wreck) /rek/ while twelve students pronounce it in the wrong way . According to the word (flash) , seven students pronounce it in the right pronunciation /flæʃ/ while thirteen students pronounce it incorrectly .Word number five (lift) , seven students pronounce it correctly / lɪft / while thirteen students pronounce it in the wrong pronunciation .

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The words (shook , ago , heard) , six students pronounce them in the right way /ʃʊk / /əgəʊ/ and / hɜ:d / . Fourteen students couldn't pronounce them correctly . Through the pronunciation of the word (rude) , twelve students couldn't pronounce it correctly while eight students pronounce it in the right way /ru:d/ . Through the pronunciation of the words (caught , calm ,steel , mate , and right) , nine students pronounce them correctly /kɔ:t / , / kɑ:m/ and /sti:l /, / meɪt/ and / raɪt/ while eleven students couldn't pronounce them correctly . One student pronounce this word correctly (quoit) / kɔɪt / , whereas the others couldn't pronounce it correctly .According to the words (coat) and (loud) , seven students pronounce them in the right way / kəʊt/ and /laʊd/,while the others pronounce them incorrectly . The words (feared , cared , and moored) , four students pronounce them correctly /fɪəd / , / keəd / and / mʊəd / whereas sixteen students couldn't pronounce them correctly

According to the first triphthong (layer) , four students pronounce it correctly / leɪə/ while sixteen students pronounce it incorrectly . The word (liar) , seven students pronounce it in the right way /laɪə / ,whereas thirteen students couldn't pronounce it correctly .The words (loyal , lower ,and tower) , six students pronounce them in the right way / lɔɪəl / , / ləʊə/ ,and /taʊə / while fourteen students pronounce them incorrectly .

Table (22) : Means , Std Deviation and T-value of the words containing all English vowels

No.	Mean	Std Deviation	T-Value		Significance
			Calculated t-value	Tabulated T-Value	
1	1.543	0.366	1.534	1.96	sig.

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2	1.642	0.233	2. 899	1.96	sig.
3	1.543	0.366	1.534	1.96	sig.
4	1.642	0.233	2. 899	1.96	sig.
5	1.642	0.233	2. 899	1.96	sig.
6	1.756	0.272	3.776	1.96	sig.
7	1.756	0.272	3.776	1.96	sig.
8	1.756	0.272	3.776	1.96	sig.
9	1.543	0.366	1.534	1.96	sig.
10	1.888	0.355	4.576	1.96	sig.
11	1.888	0.355	4.576	1.96	sig.

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12	1.888	0.355	4.576	1.96	sig.
13	1.888	0.355	4.576	1.96	sig.
14	1.888	0.355	4.576	1.96	sig.
15	1.687	0.355	2.231	1.96	sig
16	1.642	0.233	2. 899	1.96	sig.
17	1.642	0.233	2. 899	1.96	sig.
18	1.901	0.333	0.132	1. 96	sig.
19	1.901	0.333	3.132	1. 96	sig.
20	1.901	0.333	3.132	1.96	sig.

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21	1.901	0.333	3.132	1.96	sig.
22	1.642	0.233	2. 899	1.96	sig.
23	1.756	0.272	3.776	1.96	sig.
24	1.756	0.272	3.776	1.96	sig.
25	1.756	0.272	3.776	1.96	sig.

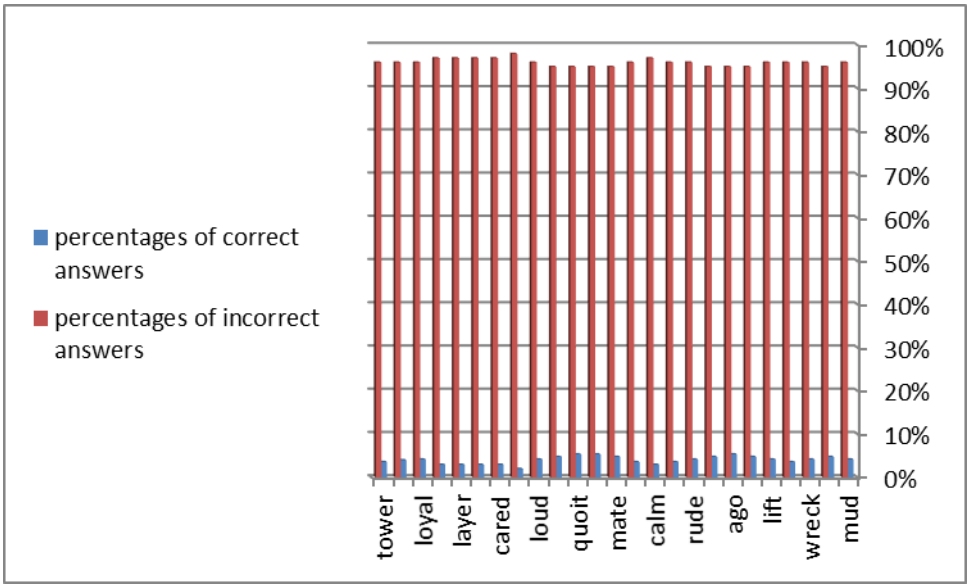

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Figure (7) Histogram of the Subjects' performance in pronouncing words containing all the English vowels

Table (23) : Means , Std Deviation and T-value of words containing pure vowels

No.	Mean	Std Deviation	T-Value		Significance
			Calculated t-value	Tabulated T-Value	
1	1.543	0.366	1.534	1.96	sig.
2	1.642	0.233	2. 899	1.96	sig.
3	1.543	0.366	1.534	1.96	sig.
4	1.642	0.233	2. 899	1.96	sig.
	1.642	0.233	2. 899		

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5				1.96	sig.
6	1.756	0.272	3.776	1.96	sig.
7	1.756	0.272	3.776	1.96	sig.
8	1.756	0.272	3.776	1.96	sig.
9	1.543	0.366	1.534	1.96	sig.
10	1.888	0.355	4.576	1.96	sig.
11	1.888	0.355	4.576	1.96	sig.
12	1.888	0.355	4.576	1.96	sig.

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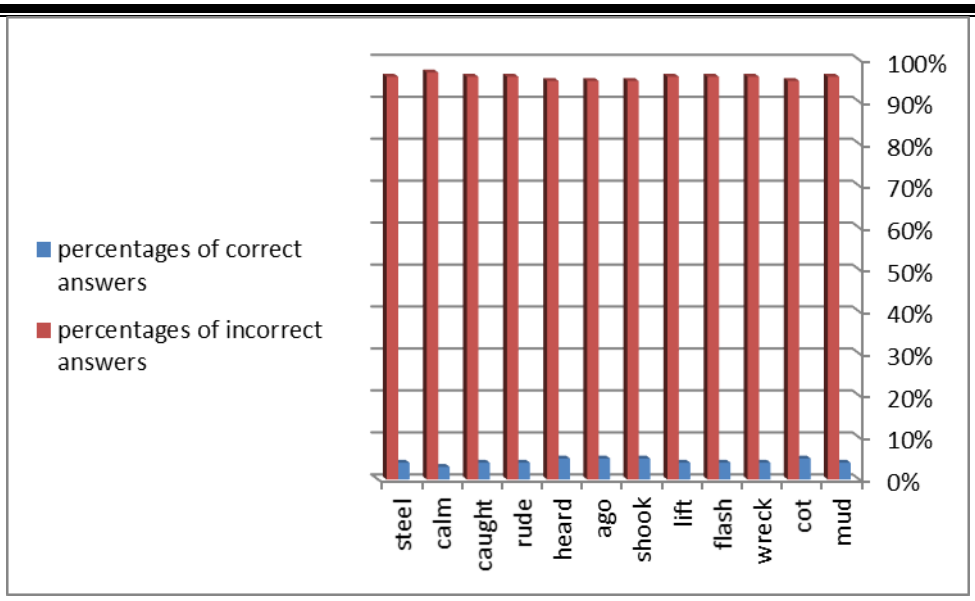

Histogram of the Subjects' performance in pronouncing words containing pure vowels

Figure(8)

Table (24) : Means , Std Deviation and T-value of words containing diphthongs and triphthongs

No.	Mean	Std Deviation	T-Value		Significance
			Calculated t-value	Tabulated T-Value	
1	1.888	0.355	4.576	1.96	sig.
2	1.888	0.355	4.576	1.96	sig.

https://doi.org/10.52834/jmr.v17i34.82

3	1.687	0.355	2.231	1.96	sig.
4	1.642	0.233	2. 899	1.96	sig.
5	1.642	0.233	2. 899	1.96	sig.
6	1.901	0.333	2.132	1.96	sig.
7	1.642	0.233	2.889	1.96	sig.
8	1.901	0.333	3.132	1.96	sig.
9	1.901	0.333	3.132	1. 96	sig.
10	1.901	0.333	3.132	1.96	sig.

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11	1.642	0.233	2. 899	1.96	sig
12	1.756	0.272	3.776	1.96	sig.
13	1.756	0.272	3.776	1.96	sig.

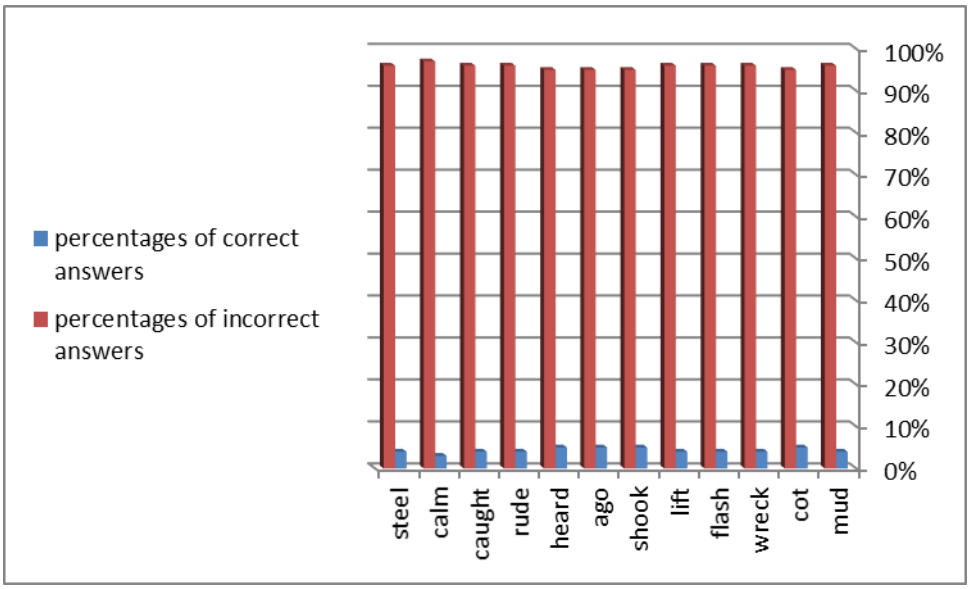

Figure (9) Histogram of the Subjects' performance in pronouncing words containing diphthongs and triphthongs

Through the analysis of data , it seems that the students face difficulty is pronouncing all the vowel sounds . The achievement is found to be statistically significant because the calculated t-value is higher than the tabulated t-value . The data presented here provide a strong confirmation with the first hypotheses because

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the students find difficulty in pronouncing all the English vowels. The data also provide a strong confirmation with the second hypothesis because the students find difficulty in pronouncing English diphthongs and triphthongs more than pure vowels because of the nonexistence of many diphthongs and triphthongs in Arabic language .

One main problem faced by Iraqi learners is that spelling contribute to some pronunciation errors . Arabic orthographic system is shallow . This means that each letter is in relationship with the sound .The sound is pronounced as it is written . English has a deep orthography system in which the relationship between the letters and sounds is not a one to one relationship . Each letter in spelling has more than one pronunciation . For example , the letter ' o ' in some words like (some , move , home , woman) has different sounds in pronunciation / ʌ , u: , ə , ʊ, ɪ / . So , the English learners who don't have the mastery of pronunciation will face difficulty in pronouncing these vowel sounds . The letter (a) in (water , same , fat) as another example has more than one pronunciation / ɔ: , eɪ , æ / . If the learner has no knowledge about this inconsistency , this will lead to mispronunciation . So , most linguists connect the pronunciation problems of vowels with the complexity of the English vowels system and the inconsistency of its pronunciation .

There is another problem is that there is conflict between the sound systems of English and Arabic . Iraqi learners of English form habits of their mother tongue (Arabic) so they build the phonological features of Arabic through the pronunciation of English words .This leads to mispronunciation .The non-existence of many diphthongs and triphthogs in Arabic language leads to difficulty in pronunciation .

Another problem is the different numbers of vowels in English and Arabic . This causes mispronunciation . English has 25 vowel sounds (7 short vowels , 5 long vowels , 8 diphthongs ,and 5 triphthongs) . Arabic has 6 pure vowels and 2 diphthongs .

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4. Conclusion

Since the aim of the study is to encounter the problems faced by Iraqi learners of English in pronouncing English vowel sounds , the researcher comes to the conclusion that there are several matters affect the students in pronouncing English words . The first matter is that sound systems of English and Arabic are different in many ways . English vowel sounds are different from Arabic vowel sounds in number, in the way they are produced , and even many English vowels don't exist in Arabic sound system. The second matter is the mother tongue interference. Complexity of vowel systems for the two languages (English and Arabic) can be considered as the third matter . The forth matter is the spelling system and its effect on pronunciation .

In order to solve these problems , language laboratories could be of a great help in teaching language .Learners could listen to recordings of English native speakers and then to try to imitate them .

Appendix

Pronounce the following words -

1-mud

2-right

3-steel

4-calm

5-cot

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6-layer

7-loyal

8-mate

9-quoit

10-rude

11-flash

12-lift

13-heard

14-lower

15-cared

16-moored

17-shook

18-ago

19-caugh

20-loud

21-feared

22-liar

23-tower

24-coat

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