

# Disquisition of Long and Short Vowels in Colloquial Arabic

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**Abstract:** The goal of this study is to investigate “Disquisition of long and short vowels in Colloquial Arabic”. Arabic language has three vowels, with long and short forms of /a /, / i /, and /u /. Short vowels / ə /, /ɪ / and / ʊ / are called [ َ ] *Fatha*, [ ِ ] *Kasra* & [ ُ ] *Damma* are typically not written except in sacred texts. Long vowels / a /, / i / and / u / are called ʾ (*alif*), ʿ (*yeh*) and ʿ (*waaw*). In this study all participants are undergraduate students from level-8, College of Humanities and Administration, Al-Jouf University, KSA. A data base of 200 words, were collected from the different regions of Saudi Arabia in Arabic language. There are some examples of words found in the Arabic words and ways to analyze them, e.g. بالغ / *baly* / ‘Adult’, لطيف / *latif* / ‘Gentle’, مولود / *maulud* / ‘Born’. (long vowels /a /, /i / and /u /), زهرة / *zahrāh* / ‘flower’, سن / *sm* / ‘tooth’, حب / *ḥvb* / ‘love’ (short vowels /ə /, /ɪ / and /ʊ /). This study attempts to investigate these words and statistical work for each other and their representation in the data included with the analysis of these results.

**Key words:** long vowels, short vowels, *Fatha*, *Kasra*, *Damma* and Arabic language.

## 1. Introduction

The Arabic language has a great history and inheritance in the fields of literature; it is also extensively used all over the Muslim world. It belongs to the Semitic group of languages which also includes languages like Hebrew and Amharic. Although the Arabic language has an official status in over 20 countries and is spoken by more than 250 million people extensively, It is the world’s second most spoken language in terms of number of speakers, has not received much attention from the traditional speech processing research community. This is written from right to left. Most references state that Arabic language has just six vowels: three short and three long, and no diphthongs (e.g. Alghamdi, 1998; Kotby et al., 2011; Newman, 2002). Arabic therefore has a smaller vowel set compared with English (Mitchell, 1993).

This study is specifically concerned with the analysis of long and short vowels in colloquial Arabic. Arabic language has 36 phonemes, of which six vowels, with long and short forms of /a /, /i /, and /u /. Short vowels / ə /, /ɪ / and / ʊ / are called [ َ ] *Fatha*, [ ِ ] *Kasra* and [ ُ ] *Damma*. Long vowels / a /, / i / and / u / are called ʾ (*alif*), ʿ (*yeh*) and ʿ (*waaw*). Consequently, vowel sound length is phonemic in Arabic language.

The aim of this study is to investigate CA vowels using both long and short domain information especially formants. Firstly, describe and classify the vowels and determine the similarities and dissimilarities among the 6 different Arabic vowels under investigation. Secondly, we carry out a formant based analysis of the six Arabic vowels as used in CA. The consequences of this investigation will be corroborated to conclude the final contributions of this research regarding the colloquial Arabic vowels.

## 2. Methodology

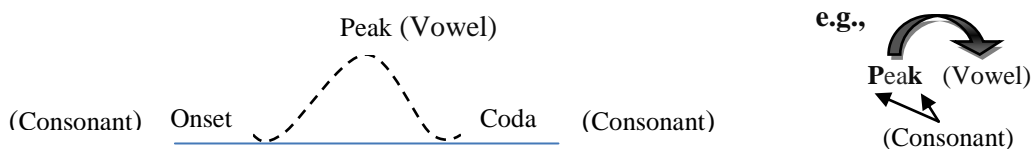
The analysis conducted is an attempt to describe and classify the long and short vowels in colloquial Arabic. The author selected 38 students randomly from level-8 college of Humanities and Administration, Al-Jouf University for the current study. A data base of 200 words, were selected from the students, they were from different regions of Saudi Arabia. There are some examples of words found in the CA and ways to analyze them. These Arabic words were recorded by the students in the class room. In the present study, the researcher used a laptop and microphone to record Arabic words.

The aim of this study is to investigate CA vowels using both Long and short domain information especially formants. Firstly, describe and classify the vowels and determine the similarities and dissimilarities among the 6 different Arabic vowels under investigation. Secondly, we carry out a formant based analysis of the six Arabic vowels as used in CA. The consequences of this investigation will be corroborated to conclude the final contributions of this research regarding the colloquial Arabic vowels.

### 3. Vowels: Long and short

The word vowel comes from the Latin word *vocalis*, means "vocal" (voice). Vowels are voiced sounds which are produced by the pharynx and the differences in the shape of the mouth are caused by different position of the tongue and of the lips.

English vowels are 12 in number whereas Arabic vowels are 6 in numbers. Vowels in Arabic are almost allophonic. Thus, they can be divided into two groups, which are short vowels and long vowels. In phonetics, a vowel is a sound in spoken language. In all spoken languages, vowels form the peak of syllables, whereas consonants form the onset and coda. The position of vowel and Consonant in syllable is given in the following diagram:



There are 28 consonants and 6 vowels in Arabic –a, i, u, ə, ɪ and ʊ – which are short and long.

#### 3.1. Short vowels

/ə, ɪ and ʊ/ are called *Fatha, Kasra & Damma*.

A number of the sounds are unique to Arabic and difficult for non-native speaker to pronounce accurately. In Arabic, Short vowels written with diacritics to be found above and below the consonant that precedes them in the syllable, called *ḥarakāt*. All Arabic vowels, long and short, follow a consonant; there are three short vowels, as exemplified below:

- /ə/-Voiced, central unrounded vowel; articulated with the tongue in the half-open position and neutral lips form it, Centralized quality. This short vowel is represented by ( ◌ ) in Arabic called "Fatha". It appears in the word /fəqat/ فقط "Just".
- /ɪ/ - Voiced, front unrounded vowel between close and half-close; articulated with the tongue in the half-close position forms /ɪ/ vowel in Arabic. Here the lips are unrounded and loosely spread. Tongue slack with less tension this vowel is called "Kasra" in Arabic. It appears under the alphabet in this shape /◌/ as in, /kitab/ كتاب "book".
- /ʊ /-Voiced, back rounded vowel between close and half close; produced by the tongue in the half - close position with the rounded and loose lips, but closely rounded. Tongue not as tense as in / u /. This is the Arabic "Damma", In Arabic it is written as /◌/ above the letter like the word /tofl/ طفل "Baby". It is used to express the nominative case, which is given to the subject and topic in Arabic.

#### 3.2. Long vowels

/ a, i, and u / are called *alif, yih* and *waaw*.

Long vowels are longer than others in the same position; they are indicating with mark of "length" /:/ . In Arabic, there are three long vowels; all these vowels can also play the role of a consonant, as exemplify below:

- /a/-Voiced, front, open, unrounded vowel; produced by the Lips which are neutrally open and jaw far apart. Centre to back of the tongue fully open. This Arabic long vowel is formed by the prolongation letter /a/ ّ preceded by the notation /◌/ fatha. It occurs in the word /bally/ بالغ "Adult".
- /i/-Voiced, close, unrounded vowel; articulated with the Lips spread. Tongue tense (front raised) with sides touching upper molars. This vowel is formed when we have the continuation letter /y/ ي preceded by the notation /◌/ 'kasrah'. For example, /latif/ لطيف "cute".

- */u/-Voiced, back, close, rounded vowel*; produced by the Lips closely rounded, back of the tongue high. Tense compared with /ʊ/. This long vowel is formed by the elongation letter /w/ و preceded by the notation /◌◌/◌/Damma. Writer find it in the word */maulud/ مولود* “Born”.

No	Phonetic symbol	Three-term label	Example	
1	<i>a</i>	ا alif	Front open unrounded vowel (long)	<i>bab</i> (door)
2	<i>i</i>	ي yih	Front close unrounded vowel (long)	<i>din</i> (religion)
3	<i>u</i>	و waaw	Back close rounded vowel (long)	<i>suq</i> (market)
4	<i>ə</i>	◌◌◌ Fatha	Central unrounded vowel (short)	<i>qalam</i> (pen)
5	<i>ɪ</i>	◌◌◌ Kasra	Front unrounded vowel between close and half-close (short)	<i>kitab</i> (book)
6	<i>ʊ</i>	◌◌◌ Damma	Back rounded vowel between close and half close (short)	<i>roz</i> (rice)

Table 1: A List of Phonetic Symbols of the Arabic Vowels: *long and short*

		Arabic Vowels					
		Front	Central	Back			
Un- Rounded	close	i			u	Rounded	
	half close		ɪ	ʊ			
	half open			ə			
	open	a					

Table 2: Shows the All vowels of Arabic are illustrated above.

The table given below shows the Arabic vowels pronounced by Saudi students. A particular vowel: *long and short* (i.e. Initial, Medial & Final word position) was given to the students to read. While the students were reading the words, their sounds were being recorded.

Vowels	Initial	Medial	Final
<i>ɪ</i>	<i>ittisal</i> Call	<i>nāmila</i> Ant	--
<i>i</i>	--	<i>lātif</i> Gentle	<i>māfwi</i> Roast
<i>ə</i>	<i>attali</i> Next	<i>yābi</i> Idiot	<i>sāmə</i> Hear
<i>ʊ</i>	--	<i>hob</i> Heart	--
<i>u</i>	--	<i>dāruri</i> Must	--
<i>a</i>	<i>amin</i> Safe	<i>zīyadāh</i> Increase	<i>killa</i> Both

Table 3: Various Examples of all the vowels: long and short at Initial, Medial & Final position in Arabic words.

long and short vowels	Initial	Medial	Final	Total
<i>ɪ</i>	2.5 %	24.5 %	0 %	27%
<i>i</i>	0 %	15.5 %	6%	21.5%
<i>ə</i>	3%	62%	0.5%	65.5%
<i>u</i>	0%	5.5%	0 %	5.5%
<i>ʊ</i>	0 %	8%	0%	8%
<i>a</i>	0.5 %	33%	3%	36.5 %

Table 4: shows the long and short vowels with their Percentage

Despite the above table, the following bar graph further displays result. The figure below shows the percentage of each vowel in Arabic words. An average was calculated for each vowel from all three positions in Arabic words (Initial, Medial & Final).

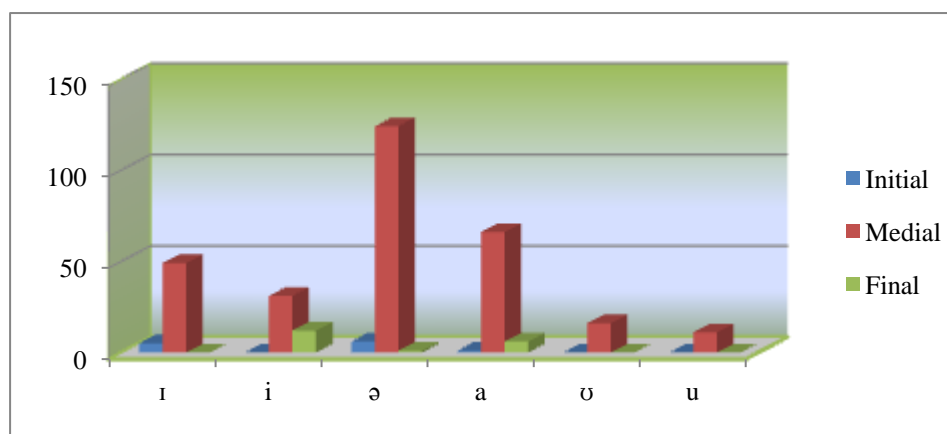


Diagram 1: shows the long and short vowels with their Percentage

The above result shows considerable percentage of long and short vowel in all three positions: word initial, medial and final. It has been found out that /ɪ/ is occurred initially 2.5 % and medially 24.5 % other than not found finally in the Arabic words. Similarly /i/ occurred in medial 15.5 % and 6% in final position in the given data of Arabic words and initially it is found in 0 %. /ə/ is occurred initially 3%, medially 62% and finally 0.5%. Short vowel /ʊ/ shows the percentage initially 0 %, medially 8% and finally 0% in the Arabic words whereas long vowel /u/ shows the percentage initially 0 %, medially 5.5% and finally 0%, both the Long and short /u, ʊ/ are not found at the medial & final position of the above table. Finally /a/ is found in a small amount of words in initially (0.5%), medially it found 33 % and finally 3 % found in the given data.

#### 4. Conclusion

In the present paper entitled 'Disquisition of long and short vowels in Colloquial Arabic', the theoretical background of colloquial Arabic has been presented. There are six vowels in Arabic. They were discussed in details. Short vowels *Fatha* [ َ ], *Kasra* [ ِ ] & *Damma* [ ُ ] are not a part of the Arabic alphabet; instead they are indicated by diacritical marks over or below the consonant. Whereas all three long vowels *Alif*, *Waw*, *Yih* are an important part of the Arabic alphabet also plays the role of a consonant. In this paper also discussed the description of vowels: phonation, height of the tongue, front / back of the tongue, and rounded / unrounded and also given their percentages of word position: initial, medial and final.

#### 5. References

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