

## Duration of Long Vowel Assimilation in Reciting Al-Qur'an Surah Al-Isra 'By International Qari' Year 2011

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### Abstract

This study aims to analyze the duration of assimilation on long vowels. The discussion studied in this study is the calculation of the duration of long vowel assimilation. This study uses acoustic phonetic theory by applying qualitative descriptive methods through observation and data editing techniques. To analyze the data, there are four analytical techniques that are applied, namely the note-taking technique, the sorting technique, the digitization, and the sound segmentation. Meanwhile, for measuring the duration of the assimilation of sounds, this study used the praat program version 4.0.27. After the data analyzed, the results of the study showed that the duration of the reading of long vowel assimilation by reciter 'DH sorted from the longest to the shortest, namely: the word [ʃaʔa: ʔu] has a duration of 5,665 ms, the word [famahawna: ʔayata] has a duration of 4,922 ms, the word [dua : ʔ] has a duration of 4,717 ms, the word [ʔa: ʔira] has a duration of 4,106 ms, the word [u: la: ʔika] has a duration of 4,021 ms, the word [waʔiða: ʔaradna:] has a duration of 3,570 ms, the word [ʔaradna: ʔan] has a duration of 3,256 ms, the word [nafa: ʔ] has a duration of 2,844 ms, and the word [ha: ʔu la: ʔi] has a duration of 2,444 ms.

### Keywords

Assimilation; duration; praat



## I. Introduction

The Qur'anic learners begin by introducing the Hijaiyah letters as well as by pronouncing the letters. In pronouncing the Hijaiyah letters, students often imitate the words spoken by the teacher. In linguistics this is known as impressionistic phonetics. According to Sugiono (2003), the impressionistic approach is an approach to studying phonetics based only on the natural senses of humans, namely hearing.

In addition to imitating what is said by the teacher, learners are also based on the science of recitation. Mahfan (2002: 5) says the science of recitation is a science that learns how to read the Koran properly and correctly, so that its meaning is perfect. The meaning of reading properly and correctly means to pronounce the Hijaiyah letters according to their makhraj (articulation), and according to the short length of a vowel (mad). Coupled with the process of pronouncing the letters Hijaiyah /n/ or harakat tanwin َ, ُ, ِ /ān/, /īn/, /ūn/ adjacent to certain letters, known as idgham, iqlab ikhfā', izhar, mad obligatory mutashil, and mad jaiz munfashil. Thus, the process of reading the Qur'an is closely related to Arabic phonological phonetics.

In reciting the Qur'an, it is also found that the lengthening of vowels is caused by the assimilation process. In the study of tajwid, lengthening of vowels is known as *mad wajib muttashil* and *mad jaiz munfashil*. Lapoliwa (1988: 42) assimilation is the process of changing the sound due to the interference of the surrounding sound. The process of

mutual interference between sounds causes the characteristics of the sound that is affected to change to match the sounds that affect it, and this interference can occur between segments in one word or between components in compound words or between morphemes and the next morpheme (Laver, 1994: 3).

In reciting the Qur'an, there is an assimilation process between long vowel sounds that are close to certain consonants, which results in long vowel lengthening. The example is on the clipped verses (QS. 2: 183):

..... أَيُّهَا يَا / ja: + ʔajjuha: / becomes [ja: ʔajjuha:] 'O people'

The example above shows that there is an assimilation process in the long, medium, non-rounded vowel / a: / near the hamzah consonant ء / ʔ / in one word with another which results in an extension of the long vowel sound / a: / to become 5 vowels. In the study of tajwid this is known as *mad jaiz munfashil* (Mahfan, 2002: 43 and Hanafi, 2000: 41).

In the study of tajwid, *mad wajib muttashil* and *mad jaiz munfashil* are pronounced as 2 harakat, 4 harakat, or 5 harakat. The length of the vowel is done manually by holding the fingers open and holding them. As stated by Lubis (1950: 13) that *mad ashli* is two harakat (2 movements) in length, one harakat is approximately as long as the motion of the finger is held and opened. *Mad ashli* in the study of tajwid is a long vowel in Arabic phonetics.

Based on the above explanation, the researcher sees that the measurement of the hand grip is not objective and inaccurate in determining the length of long vowels in reciting the Qur'an. Based on this, the researcher wants to accurately prove the measure of long vowel lengthening by using the Praat version 4.0.27 tool to measure how long the long vowel lengthening duration is pronounced in the assimilation process that occurs in reciting the Qur'an on surah al-Isra'. Researcher chose surah al-Isra' because surah al-Isra' consisted of a fairly perfect assimilation process, including assimilation of long vowels with consonants. Then in this study, the researcher chose reciter 'DH from Indonesia as the sample. Based on this, the researcher is interested in studying the duration of long vowel assimilation in the recitation of the Alquran on surah al-Isra'.

## II. Review of Literature

### 2.2 Duration

According to Sugiyono (2003) duration is the time used to realize a segment which is measured in units of millimeters or a momentary stop which is commonly called a pause. If the segment is a sentence, the time difference is known as the tempo.

The same view was stated by Al-Khuli (1982: 81):

الصَّوْتُ كَمِّيَّةُ الصَّوْتِ طَوَّلُ / ṭūluṣ ṣaut kammiyyatuṣ ṣaut /, 'duration is the length or quantity of time a sound is pronounced.'

Lehiste (1970: 125) audiotically, duration is the quantity of the length of the utterance (length). Acoustic components are usually represented in terms of ms (s) or millim (md). One ms is equivalent to one thousand millim. Conversely, one thousand millim is equivalent to one ms to measure the level of duration as a sound, tools are needed. Measurements are carried out with the praat program.

## 2.2 Praat Tool

Irawan (2017: 231) states that Praat is a digital acoustic data analyzer (digital speech analyzer). Praat is a good speech analyzer program for measuring fundamental frequency, sound amplitude, duration, and formant frequency accurately. Apart from having basic skills to analyze speech acoustics such as tone, intensity, formant and duration analysis, Praat is able to manipulate the acoustics of speech so that it can be used for various phonetic experimental studies. With practice, researchers can change the contours of the notes, manipulate duration, and manipulate intensity. The default tool can be used on computers running Windows, Linux, Macintosh, and so on.

## 2.3 Assimilation

According to Umar (1997: 387) assimilation is:  
أُخْرِى لِأَصْوَاتٍ مُجَاوِرِيهِ بِسَبَبِ لِلسَّوْتِ التَّكْنِيفِيَةِ التَّغْدِيْلَاتِ: الْمُمَاثَلَةُ

/ al-mumāsalatu: at-ta'dīlātu t-takīfiyatu liṣṣawti bisababi mujāwiratihi liaṣwāti ukhrā /  
'Assimilation is the change in the sound of the language due to proximity to other sounds (sound adaptation to its environment)'.  
'

Then Schane (1973: 50-52) also suggests that the assimilation process can occur in four possibilities, namely: consonants assimilate with vowel characteristics, vowels assimilate with consonant characteristics, consonants assimilate with consonant characteristics, and vowels assimilate with consonant characteristics. – Vowels

### a. Assimilation of Long Vowels with Consonants in Reciting Al-Quran

In the reciting the Qur'an, long vowels ا, ي, و / a: i: u: / are presented after the voiceless inhibitory glotal consonant ء / ʔ / will experience assimilation, either in one word or in one word in other. This assimilation process results in the lengthening of long vowels. In tajwid, the lengthening of long vowels caused by the assimilation of long vowels with certain consonants is known as *Mad*. there are 3 types of *mad*, namely:

#### a. Mad Ashli (vocals on display)

Mad ashli is alif sukun ا after lining up fathah َ, waw breadfruit و after lining up dhammah ُ, ya sukun ي after lining up kasrah ِ is 2 harakat long. Example: جي / ji: /.

#### b. Mad Wajib Muttashil (Assimilation of long vowels in one word)

Mad is obliged to muttashil, namely every alif of sukun, waw sukun, ya sukun after lining up fathah, lining up dhammah, lining the kasrah close to the hamzah in one sentence. Then the length is 5 harakat and 6 harakat when it stops. The example is following:

سَمَاءُ / sama: ʔ / reads as [sama: ʔ]

#### c. Mad Jaiz Munfashil (Assimilation of long vowels in one word with the next)

Mad jaiz munfashil, namely every alif of sukun, waw sukun, ya sukun after lining up fathah, lining up dhammah, lining up the kasrah next to the hamzah in one sentence with another sentence. Then the length is 4 harakat or five harakat. For instance:

أَيُّهَا يَا / ja: + ʔajjuha: / becomes [ja: ʔajjuha:]

### III. Research Method

This research is a qualitative research and uses a qualitative descriptive method. According to Mukhtar (2013: 10) qualitative descriptive is a method used to find knowledge and theories on research at one time. This research is a documentary research, Herdiansyah (2010) said that documentation study is a method of collecting data by viewing or analyzing documents that are made by the subject itself or others about the subject. The documentation used in this study is a video recording of the recitation of the Koran surah Al-isrā 'from verse 9 to verse 21 by the reciter' DH, an international reciter 'in 2011. Then the data source in this study is a video of reciting the Qur'an surah al-Isra' from verse 9 to 21 by reciter International DH 2011 in Tehran-Iran.

The stages of data collection were carried out in three stages, namely, first, the listening technique, namely listening repeatedly to the video recording of the recitation of the Qur'an Surah Al-Isrā' by Qari' DH. Second, the editing technique is editing and cutting videos including the duration of long vocal assimilation using a video maker application, then the edited video is changed to the type of format, from MP4 format to WAV format by using an audio converter application. The third stage, data classification, namely data entered into a folder for the duration of assimilation of long vowels, tanwin vowels and consonants.

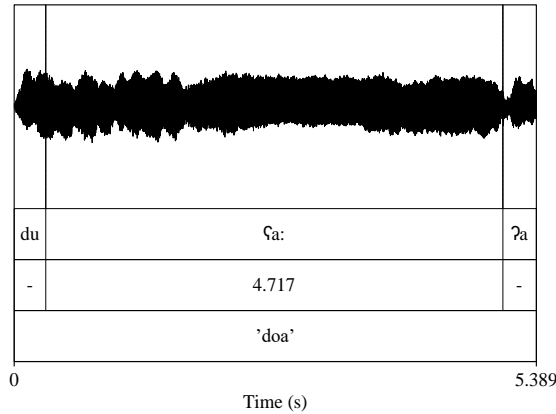
The data were analyzed descriptively by describing the long vowel sounds that were assimilated in the recitation of the Alqur'an surah al-Isra 'by the reciter' DH, To analyze the problem, a note-taking technique was used, namely recording on a data card the long vowel sounds that were assimilated in the reading of the Qur'an Surah Al-Isrā' by an International Qari' in 2011. Then a sorting technique was used, namely sorting the data according to the location or position of the long vowel assimilation in the recitation of the Koran Surah Al-Isrā' by the Qari' International in 2011. Furthermore, measuring the duration of assimilation of long vowels in the recitation of the Koran Surah Al-Isrā' by the Qari' International in 2011, the researcher used the praat program version 4.0.27 with stages of digitization, segmentation sound, and duration measurement.

### IV. Results and Discussion

The results that the researchers obtained in the reciting the Qur'an on surah Al-isrā 'starting from verse 9 to verse 21 by the International reciter' in 2011, found 9 long vowel assimilation processes. To be clearer, the researchers describe the following:

#### Data (1)

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [duʕa: ʔ] in Surah Al-isrā 'verse 11 by the International reciter' in 2011.

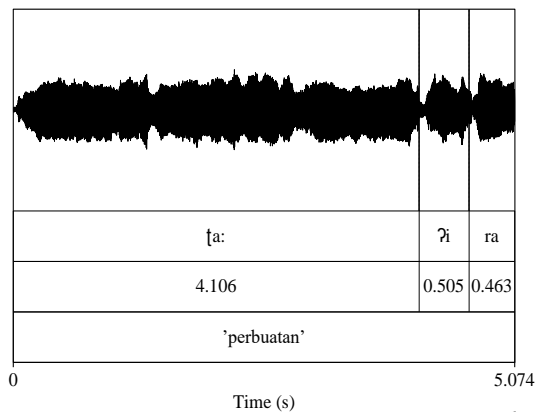


**Figure 1.** Duration of long vowel assimilation / a: / on the word [duʕa: ʔ] by reciter 'DH

The word دُعَاء / duʕa: ʔa / which is read by reciter 'DH from Figure 1 above, it is obtained the duration of the long vowel assimilation sound [a:] along 4,717 ms.

### Data (2)

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [ʔa: ʔira] in Surah Al-isrā 'verse 13 by Qari' International in 2011.

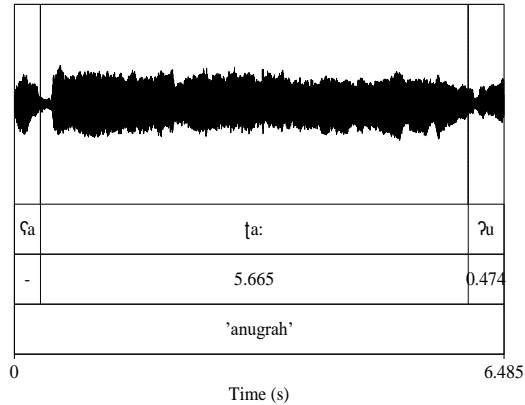


**Figure 2.** Duration of long vowel assimilation / a: / on the word [ʔa: ʔira] by reciter 'DH

The word طَيْرَ / ʔa: ʔira / which is read by reciter 'DH from Figure 2 above shows the duration of long vowel assimilation sound [a:] along 4.106 ms.

### Data (3)

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [ʕaʔa: ʔu] in Surah Al-isrā 'verse 20 by Qari' International in 2011.

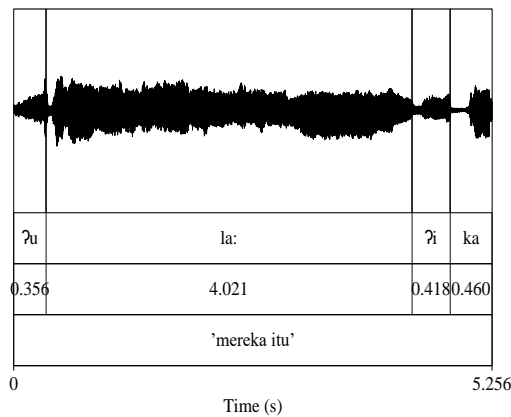


**Figure 3.** Duration of long vowel assimilation / a: / on the word [ʕaʔa: ʔu] by reciter 'DH

The word عَطَاءُ / ʕaʔa: ʔu / which is read by reciter 'DH from Figure 3 above shows the duration of long vowel assimilation sound [a:] along 5,665 ms.

**Data (4)**

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [u: la: ʔika] in Surah Al-isrā 'verse 19 by Qari' International 2011

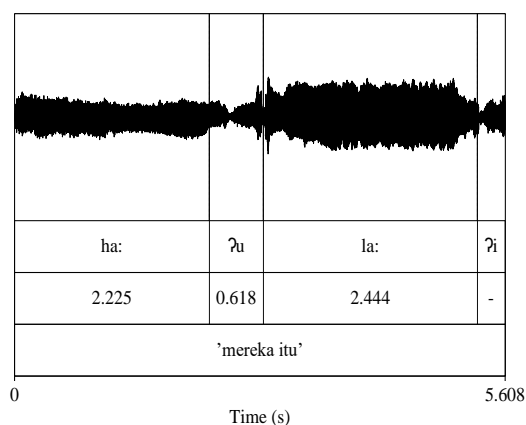


**Figure 4.** Duration of long vowel assimilation / a: / on the word [u: la: ʔika] by reciter 'DH

The word أُولَئِكَ / u: la: ʔika / which is recited by the reciter 'DH from Figure 4 above shows the duration of the long vowel assimilation sound [a:] along 4,021 ms.

**Data (5)**

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [ha: ʔu la: ʔi] in Surah Al-isrā 'verse 20 by Qari' International 2011

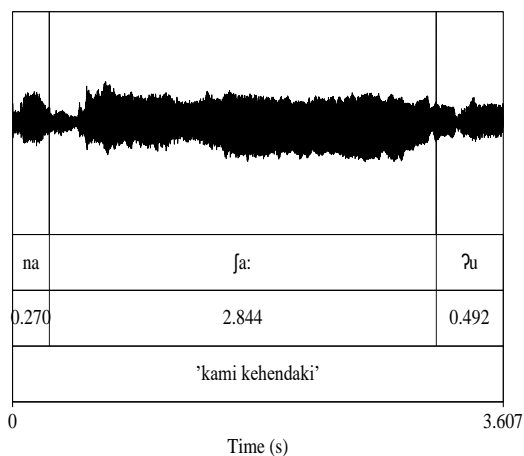


**Figure 5.** Duration of long vowel assimilation / a: / on the word [ha: ʔu la: ʔi] by a reciter 'DH

The word لَاءَهُوْ / ha: ʔu la: ʔi / which is read by the reciter 'DH from Figure 5 above shows the duration of the long vowel assimilation sound [a:] along 2,444 ms.

**Data (6)**

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [naʃa: ʔ] in Surah Al-isrā 'verse 18 by Qari' International 2011

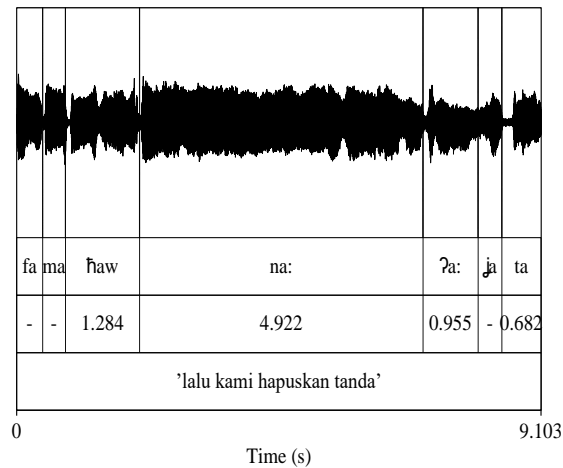


**Figure 6.** Duration of long vowel assimilation / a: / on the word [naʃa: ʔ] by reciter 'DH

The word نَشَاءُ / naʃa: ʔu / which is read by reciter 'DH from Figure 6 above obtained the duration of the long vowel assimilation sound [a:] along 2,844 ms.

**Data (7)**

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [famaḥawna: ʔayata] in Surah Al-isrā 'verse 12 by Qari' International 2011

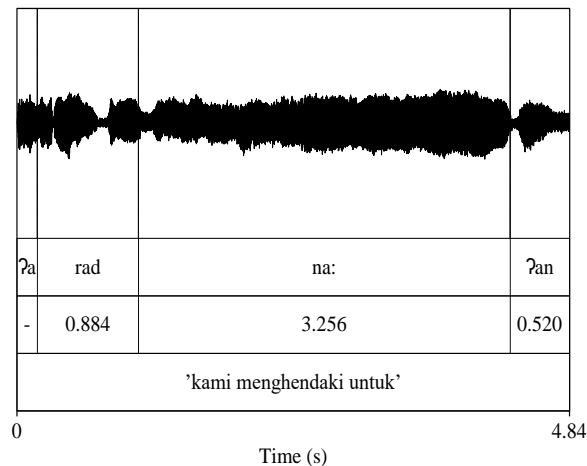


**Figure 7.** Duration of long vowel assimilation / a: / on the word [famaħawna: ʔayata] by a reciter 'DH

The word فَمَحَوْنَا أَيَّةً / famaħawna: ʔayata / recited by reciter 'DH from Figure 7 above obtained the duration of the long vowel assimilation sound [a:] along 4,922 ms.

#### Data (8)

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [ʔaradna: ʔan] in Surah Al-isrā 'verse 16 by Qari' International 2011



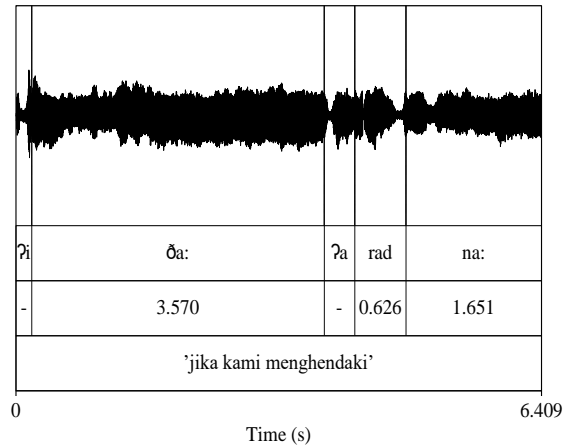
**Figure 8.** Duration of long vocal assimilation / a: / on the word [ʔaradna: ʔan] by reciter 'DH

The word أَرَدْنَا أَنْ / ʔaradna: ʔan / which is recited by the reciter 'AH from Figure 8 above, the duration of the long vowel assimilation sound [a:] is 3,256 ms long.

#### Data (9)

Duration of long vowel assimilation / a: / with the consonant hamzah / ʔ / in the word [waʔiða: ʔaradna:] in Surah Al-isrā 'verse 16 by Qari' International 2011





**Figure 9.** Duration of long vowel assimilation / a: / on the word [ʔiða: ʔaradna:] by reciter 'DH

The word إِذَا رَدْنَا / ʔiða: ʔaradna: / which is recited by the reciter 'DH from Figure 9 above shows the duration of the long vowel assimilation sound [a:] along 3,570 ms.

## Discussion

In this section, the results of the research will be explained, namely the long vowel sound / a: / is being unanimously assimilated with the consonant ʔ / voiceless glottal inhibitor (مهموس, حَنْجَرِيَّةٌ, وَقْفِيَّةٌ) / waqfiyyah, yahanjiriyyah, long vowel sound [a:]. Then it is formulated as / a: / + / ʔ / → [a:]. Furthermore, the location of long vowel assimilation occurs in one word and in the upcoming one. The assimilation of long vowels that occur in one word in tajwid is called *mad wajib muttashil*. Meanwhile, long vowel assimilation that occurs in one word with the next in tajwid is called *mad jaiz munfashil*. Then to answer the third problem formulation regarding the duration of assimilation, the findings obtained on the long vowel assimilation duration read by the reciter 'DH obtained that the length of long vowel assimilation duration in the word [duʕa: ʔ] is 4,717 ms (> 20 harakat), said [ ʔa: ʔirah] for 4,106 ms (19.8 harakat), words [ʕaʔa: ʔ] for 5,665 ms (> 20 harakat), word [u: la: ʔik] for 4,021 ms (19.5 harakat), words [ha: ʔula: ʔi ] for 2,444 ms (11.9 harakat), word [naʕa: ʔ] for 2,844 ms (13.9 harakat), word [famaḥawna: ʔayata] for 4,922 ms (> 20 harakat), word [kataaradna: ʔan] for 3,256 ms (15.8 harakat) ), and the word [waʔiða: ʔaradna:] for 3,570 ms (17 harakat).

## V. Conclusion

Based on the results of the analysis in the previous chapter from the reciting the Qur'an on surah Al-isrā 'verses 9-21 by International in 2011, the researcher can conclude that the long vowel sound / a: / assimilates the consonant sound hamzah ʔ / . Long vowel assimilation occurs in one word and in one word after. The duration of reciting the long vowel assimilation by reciter 'DH from the longest to the shortest is: the word [ʕaʔa: ʔu] has a duration of 5,665 ms, the word [famaḥawna: ʔayata] has a duration of 4,922 ms, the word [duʕa: ʔ] has a duration of 4,717 ms, the word [ ʔa: ʔira] has a duration of 4,106 ms, the word [u: la: ʔika] has a duration of 4,021 ms, the word [ʔiða: ʔaradna:] has a duration of 3,570 ms, the word [ʔaradna: ʔan] has a duration of 3,256 ms, the word [naʕa: ʔ] has a duration of 2,844 ms , and the word [ha: ʔu la: ʔi] has a duration of 2,444 ms.

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