ICT-based Al-Qur'an phonology learning

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Abstract. This research seeks to analyse the process of ICT-based Al-Qur'an phonology learning by using MTT Tahsin application. Indonesian people, whose mother tongue is not Arabic, need to learn the Al-Qur'an phonology to avoid letter sound interference in Al-Qur'an reading. The research method conducted the following stages: (1) search and download MTT Tahsin application; (2) explain the application features; (3) learn Al-Qur'an by using the application; and (4) evaluate the learning process. The subjects of this research were students with Javanese culture background, consisting of 14 male students and 9 female students of a university in Kabupaten Sumedang. The findings are: (1) MTT Tahsin application is equipped with trans-literacy feature and explanation of hijaiyyah letters characteristics, hence, it assisted the students to comprehend the pronunciation; (2) The application is equipped with makhroj (place from which the sound of a letter originates) pronunciation with all marks, hence, it assists the students to comprehend makhroj pronunciation; (3) The learning process could be done wherever and whenever; and (4) the evaluation of learning process showed that MTT Tahsin application could minimize the phonology interference in Al-Qur'an reading practices. To conclude, Al-Qur'an learning using MTT Tahsin application could improve phonology mastery for Javanese people.

1. Introduction

This research was motivated by an event that had viral on social media when the 6th Indonesia president with Javanese cultural background called Surat al-Fatiyah to be al-Fatekah in the 27th opening of the National Musabaqoh Tilawatil Al-Qur'an in Medan. This raises a variety of responses from the public, some say that this is not reasonable because it is related to the Qur'an so it must be correct and accurate in reciting it. If you misrepresent it, it will change the meaning. As Lodge stated, that sounds, especially linguistic sounds, have an effect on any hearer [1]. Some say that it is natural for two reasons. The first al-Fatiyah is not a verse of the Qur'an but the name of a verse in Qur'an. Reading the verses of the Qur'an should not be mistaken. Second; the pronunciation error often occurs because there is contact between two or more languages that are used interchangeably by the speaker, especially Indonesian people who do not speak Arabic for their daily language so that it often causes interference [2]. From the language contact, it affects the existence of code-switching, code mixing, interference and integrase [3–8].
To further strengthen the theory above, researchers conducted observations and carried out a number of tests for students from Javanese cultural backgrounds at one of the universities in Kabupaten Sumedang in reciting the Qur'an. The results of observations on 23 students found some phonological interference for example; the sound change of letter 
\( \text{ع} \) becomes "nga" in reading بسم الله الرحمن الرحيم reads “angudzubillahiminasyaithonrirjim”, letter ح became خ in reading الحمد الله and حim (bismillahirakhmanirrakhim), letter ح became ك in pronunciating اللهم and the حمد الله tends to لله. From these findings, the researcher feels interested in examining whether the interference caused by the two-language contact used by speakers can be straightened or not? If this can be corrected, what kind of efforts and media are needed?

The researcher has done some investigations related to the above research problem and found that there has not been any study that specifically examines the efforts to minimize errors in pronouncing the hijaiyyah letters in reciting the Qur'an. The results of the existing research only reveal some forms of phonological interference, for example, the research conducted by Khumaidi and Hamzah in the journal of Arabic Learning and Teaching titled “The phonological interference of the Sundanese-Javanese society of Kedungreja Cilacap in Arabic speech. Furthermore, research conducted by Lathifah entitled “The analysis of phonological errors in reading Arabic texts” [9]. These two studies only analysing the forms of phonological errors in reading Arabic texts. Furthermore, research conducted by Feda At-Tamimi entitled phonetic complexity and stuttering in Arabic. He examined the complexity of the Arabic language that influences the level of stuttering or difficulty being spoken in three age groups i.e. 6-11, 12-17 and 18 years and above based on AIPC. According to him, stuttering on functional words for Jordanian Arabic does not correlate significantly with the AIPC (Arabic index of phonetic complexity) scores for all age groups [10]. Based on the results of these researches, the researchers captured a research gap that has not been discussed by other researchers i.e. how to minimize phonological interference in reciting the Qur'an which is done by Javanese-speaking people in the context of ICT-based learning.

The ICT which is used as a learning media in an effort to minimize the interference is an Android-based application i.e. MTT Tahsin. The application was made by Nurkholis Asy'ary to facilitate the study of hijaiyyah letters properly and correctly. The application has advantages including an explanation of each hijaiyyah letters, hijaiyyah character traits, and exercises evaluation through recording. Therefore, the purpose of this research is aimed to analyse the ICT-based Al-Qur'an phonology learning process by employing the MTT Tahsin application media.

2. Methods
The method carried out in this study took several steps i.e. (1) searching and downloading android-based applications related to Al-Qur'an phonology, (2) explaining the features available in the application (3) the learning process of Al-Qur'an phonology by using the application and (4) learning evaluation. This research was conducted on 23 students from Javanese cultural backgrounds consisting of 14 men and 9 women from one of the universities in Kabupaten Sumedang.

3. Results and discussion
3.1. Searching and downloading application
This stage is the stage of finding the right media application as an alternative in conditioning the students in pronouncing hijaiyyah correctly. In the process of searching the application, the researcher found several applications relating to media of learning phonology. However, the researcher chose an application for learning process called MTT Tahsin (See Figure 1). The application was chosen because of several considerations including: 1) equipped with Arabic-Indonesian transliteration in its pronunciation, 2) there is a discussion of the character of letters and their opponents so as to be able to explore knowledge of the phonological insights of the Qur'an, 3) there are exercising features for the habit of reciting hijaiyyah letters in a series of stanzas, 4) from an economic point of view this application
is very cheap and practical, inexpensive because it is free, practical because it can be installed on a smartphone, everyone has it so that it can be used anytime and anywhere.

![MTT Tahsin in Google play store.](image)

**Figure 1.** MTT Tahsin in Google play store.

3.2. Learning the application to understand MTT Tahsin

After the students downloaded and installed the application, then, the step moves to the process of explaining the features available in the MTT application to be understood by students. The features in the application are as follows:

3.2.1. Transliteration feature. When opening the application, the application logo will appear, namely MTT Tahsin, then followed by the appearance of the hijaiyyah letter accompanied by transliteration. This transliteration is an attempt to make it easier to learn how to mention each letter. In this Figure 2, there are 28 hijaiyyah letters by sliding up and down.

![Transliteration feature in MTT Tahsin.](image)

**Figure 2.** Transliteration feature in MTT Tahsin.

3.2.2. Makhroj features and characteristics. The feature is a medium for understanding the makhoj theory or the place where the letters come out and understanding the character of letters. When we click on each hijaiyyah letter it will appear as shown in Figure 3 below. If we click the PLAY button it will display an example of how hijaiyyah letter is pronounced. The NEXT button is to continue to the next letter and the PREVIEW button is to return to the previous letter.

![Makhroj features and characteristics in MTT Tahsin.](image)

**Figure 3.** Makhroj features and characteristics in MTT Tahsin.
3.2.3. Features of habituating exercise. If you press the PLAY button, the display will appear as shown below, accompanied by the sound of the pronunciation. This can be used as a student practice in reciting each letter in various forms of punctuation.

Figure 4. Habituating practice.

3.3. The Qur’an learning process by using MTT Tahsin application

This stage is a learning process for students to improve the skill of reciting the hijaiyyah letters correctly and precisely by using the MTT Tahsin application. This learning process was taken in 5 meetings.

3.3.1. The first meeting. At the first meeting, the students were instructed to observe and study each letter of hijaiyyah with its writing transliteration and then instructed to indicate where the sound was released from the hijaiyyah letters and to practice it properly and correctly.

3.3.2. The second and third meeting. In the second and third meetings, students were instructed to practice the material at the first meeting then proceed to understand the characteristics of each letter. In this meeting students were also instructed to look for their understanding of the terms of the character of letters through the internet to deepen their learning. For example, the nature of jahr is the clearness of the voice without breathing out. Hams is the vague sound by circulating breath when mentioning letters. After that, the students were instructed to group each hijaiyyah letter based on its characters.

3.3.3. The fourth and fifth meeting. In this fourth meeting students practice the sounds of each letter arranged in the form of a stanza as shown in the following Figure 5 in accordance with the application:

أَإِيْ أُوْبََْ اُوْأًاَنِ أَأْنَ مِنَ اْلـمُؤْنِ مَلِيَّاَ أَنِ أَ

Figure 5. Habituating stanza.

In this meeting the material was given a little modification by adding with a melody touch as shown in the following Figure 6:
Example 1. *Alif hijaiyyah* letter

Example 2. *Ba hijaiyyah* letter

Example 3. *Ta hijaiyyah* letter

The red letter is not changed. For exercising only black letters are changed. Students practice it for each hijaiyyah letters from letter ‘أ’ to ‘ي’ [11].

### 3.4. Evaluate learning

In this stage, a number of learning evaluations are carried out. The evaluation is done by giving assignments consisting a number of questions for cognitive evaluations which composing of transliteration and letters grouping based on letters character and its opponents. Then practice the sound of each *hijaiyyah* letter by way of instructing students to practice the sound of each letter that is randomly mentioned by the researcher to be practiced as in the fourth meeting. At the final, the students were asked to apply it in practice to recite Surah Al-Fatiha. The evaluation results are shown in the following table:

#### Learning Evaluation with MTT TAHSIN Application

|                  | Letter transliteration | Letter character | Phonology practice |
|------------------|------------------------|------------------|--------------------|
| Series 1         | 9                      | 2                | 3                  |
| Series 2         | 23                     | 21               | 23                 |

**Figure 7.** Learning evaluation.
The Figure 7 above shows that the use of the MTT Tahsin application can improve students' understanding and skills in reciting hijaiyyah letters. From the aspect of transliterating hijaiyyah letters it increased by 60.8% from the understanding of letters character it increased by 82.6% and for practice in reciting hijaiyyah letters increased 86.9%. These improvements are seen from the accuracy of the sound of each letter during practice in reciting Surah al-Fatihah. The level of sound accuracy of each letter in reading al-Fatihah letters from the results of the pre-test and post-test is shown by the following table:

![Table showing accuracy of Makhroj during practice in reciting Al-Fatihah](image)

**Figure 8.** The accuracy of makhroj.

From the Figure 8 above the accuracy of pronouncing the letter ع increased by 69.5%, the accuracy of pronouncing letter ح on بسم الله الرحمن الرحيم increased by 60.8% and the frequency of pronouncing letter ح on لله الحمد increased by 60.8%.

4. **Conclusion**

Based on the description above, it can be concluded that learning of the Holy Qur'an phonology by using MTT Tahsin Application is able to improve the skills of students in the practice of reciting Al Qur'an and making learning more effective, besides that the MTT Tahsin application is able to minimize Qur'an phonological interference caused by speakers from Javanese cultural backgrounds. This means that the theory that speakers who use two or three languages alternately can cause phonological interference can be minimized if they continue to be trained and continue to habituate in the proper learning process so that the interference can be minimized.

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