# M-Tajweed: A Mobile Courseware to Assist in Tajweed Learning

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## ABSTRACT

Tajweed are the rules to recite the Quran with proper pronunciation. "Face to Face" is the current method in learning Quran which is now becoming less effective and unattractive to be implemented especially towards young Muslim generation. The rapid changes of technology are now shifting from the traditional learning environment which is in classroom to modern learning environment which is mobile learning. There are numbers of application designed to meet users' requirement when the awareness of IT gadgets for mobile learning is increasing. Unfortunately, the development of Islamic mobile application is still lacking in Malaysia and in other Muslim countries. Currently, student are facing problems in understanding the rule of Tajweed due to their limited time with their teacher in the classroom. Therefore, with the help of a mobile learning courseware, it is hoped to help the teachers and students in better understanding of the difficult subject of Tajweed. This paper looks into the design and development of a mobile learning courseware that teaches the rules of Tajweed and correct pronunciation according to the current Sijil Pelajaran Malaysia (SPM) syllabus, and to test the usability of the system in terms of learnability, memorability, simplicity, satisfaction and overall reaction to the mobile courseware.

***Keywords*: Courseware, Mobile Learning, Multimedia, Tajweed.**

## 1. INTRODUCTION

Tajweed is the rules to recite the Quran with proper pronunciation. Tajweed by definition is bettering, improving, and becoming excellent while functionally, it means articulating every letter in the Quran in its correct timing and from its proper point of articulation (المخرج) (A.Harrag & T.Mohamadi, 2010).

Current method of a Quranic learning process is through manual method of Al-Quran reading skills. This method also known as *talaqqi* and *musyafahah* method, which is described as a "face to face" learning process between students (Recitors) and teachers (Mudarris), become less effective and unattractive to be implemented, especially towards the young Muslim generation because the class hinders the interaction required between students and teacher due to the limitation of the time (Marina et al., 2011).

The rapid development of wireless and mobile technologies has attracted the attention researchers from various educational disciplines. Many studies have investigated the use of mobile learning (m-learning) as a complementary teaching technique to reduce both time and location constrains within the learning environment (Motiwalla,2007; Huang, Lin & Cheng, 2009).

Therefore, this study was conducted to overcome the problems faced by teachers and students while learning the rules of Tajweed. An Interactive learning method is proposed to teach the rules of Tajweed since this is an effective method to deliver course content (Riaza & Halimah, 2009).

## 2. LITERATURE REVIEW

### *2.1 The Importance of Tajweed*

The purpose of the rules of Tajweed is to keep the reader reading the Quran correctly without any error and shortcoming as there are characters which terms are somewhat similar(pronunciation). Therefore, readers should be aware about the pronunciation of a letter in through Tajweed to prevent changes in the pronunciation and meaning of the words in Quran (Barakatullah, 2006). Reciting the Quran with correct Tajweed is really important as the proof of Allah words in the Quran, the meaning is:

*"those who we have given the Book to, give it its right in recitation (recite it as it should be recited)"* surah Al-Baqarah:121.

Muhammad bin Al-jazri the great Quran and Hadeeth scholar of the 9$^{th}$ Century (Hijri) says in his famous poem detailing the rules of Tajweed:

*"And applying Tajweed is an issue of absolute necessity. Whoever doesn't apply Tajweed to the Quran, then a sinner is he"* (source: Barakatullah, 2006).

### *2.2 Mobile Learning*

Mobile learning applications can be developed for many different purposes. One of them would be for assisting learners in revising their lesson. The majority of mobile learning can be having audiences or user that is lack in skills. They may not interest in taking part for traditional education and training.

Mobile technologies can support learning across different context as their portability enables them to be used by learner in whichever context she or he is. They can be particularly beneficial in informal and semiformal context where learners have more control over their learning goals and where motivation is often high (Ann, Eileen & Gill, 2012).

There is now a growing sophistication in the nature of Islamic apps on offer, many focusing on ease of access, clarity and user-friendly features (Bunt, 2010). The early rush saw apps offering Qibla direction, prayer times, Qur'an recitations and readings, Hadith collections, and biographies of the Prophet Muhammad (Bunt, 2010).

### *2.3 Mind map as a teaching approach*

A Mind Map is an outline in which the major categories radiate from a central image and lesser categories are portrayed as branches of larger branches (Budd, 2010). Mind mapping is a study technique in which information from a variety of sources is converted into a diagrammatic representation of the important key words associated with a study topic. During production, an image representing the main study topic is initially drawn in the center of the mind map. Extending from this central image are several major branches containing keywords representing the topic subheadings, which are accompanied by an image whenever possible.

The important detail included under each subheading is written upon smaller branches projecting from the subheadings with more detailed information being connected to this information. By undergoing this process, information initially contained within passages of text becomes hierarchically organized, with the most general information being presented in the centre of the mind map and material of increasing detail being presented at the extremes.

When the mind map is read, the central image forms the starting point and the branch to the top right-hand of the central image is the first branch inspected. When this branch has been inspected the other branches are covered in a similar manner, working in a clockwise fashion. Throughout the whole process, imagery, colour and the visual-spatial arrangement of the material are emphasized. Whilst many of the components used in mind maps have been individually incorporated into commonly used study techniques, their efficacy of use when combined within a single study technique has not been examined. Mind maps are an effective study technique when used to improve factual recall (Farrand et. al, 2002).

## 3. METHODOLOGY

This project used ADDIE (Figure 1) model as a methodology for developing an interactive learning in Tajweed. ADDIE is an instructional design model, which is valid for any kind of education and despite the fact that ADDIE comprises the components of all other design models it is a relatively simple model. Its name is an acronym of the capital letters of the words: **A**nalyze, **D**esign, **D**evelop, **I**mplement, and **E**valuate which comprise the five steps as follows (Selay & Buket, 2008).

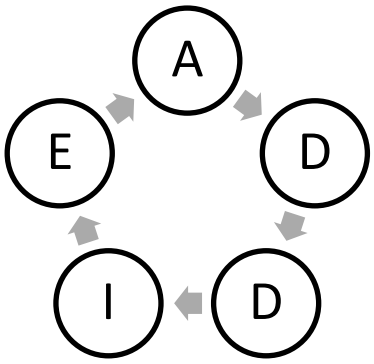


Figure 1: ADDIE model

Analysis phase is a set of learning objectives prepared based on a selected set of competencies, a concept map that arranges the concepts to be mastered to achieve the learning objectives, and course contents arranged as modules. In the Design phase learning objectives at the level of modules are prepared, media in which learning material would be presented is selected, and instructional methods are chosen for different learning units or modules. The Design phase is converted into instructional materials and procedures in the Development phase. The materials and procedures are used by actual learners in the Implementation phase. The learners and the instructional system are probed, in the Evaluation phase to decide whether revisions are necessary, in which case the process would be repeated with the next version of instruction.

Most of the design, images, diagrams and button image were done in Adobe Photoshop CS3. This is because Adobe Photoshop CS3 contains many features and utilities that make manipulation of image and picture would be easier.

The development process takes place in different software from the design phase. The development process was done in Adobe Flash CS5.5. All the materials that involve in the design phase will be integrated and customize in this phase according to the storyboard that was designed earlier. All the material were integrated to enable the delivering of learning content during learning process will be completely worked without any error.

Action Script 3.0 is used to develop this application. The layout of this application is the standard size which is 640x480 pixel in order to avoid the problem during the execution due to different size of a computer's screen.

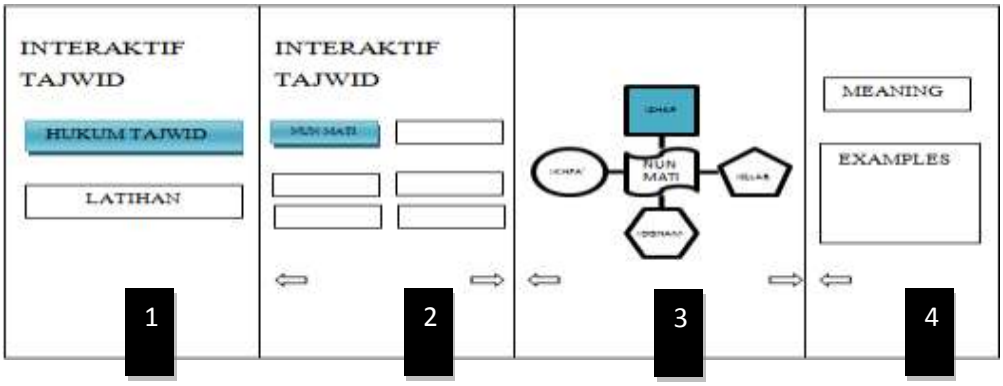


Figure 2: The initial interface menu for learning contents

Figure 2 show the initial interface menu for learning contents. When the learners click to the "Hukum Tajweed" the page will go to the categories of rules of Tajweedin the page 2 . Learners can choose the rules of Tajweed that they want to learn and click to the button and the page will go to the learning page where the mind map is used as a teaching approach in the page 3 . To listen to the example of pronunciation, learner has to click the name of rules of Tajweed in 3 and the page will go to the examples in the page 4 . Learners have to Roll over the curser on the examples to listen to the recitation. With this, learner can control when they want to listen to the examples.

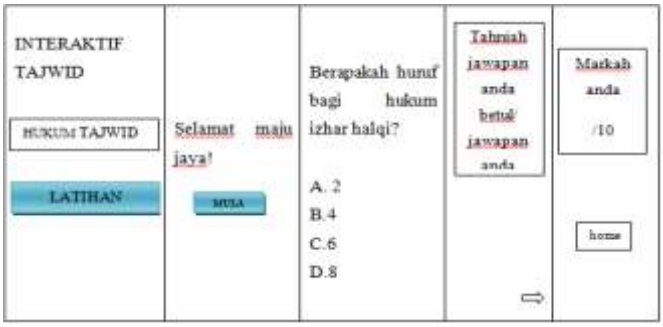


Figure 3: The initial interface menu for quizzes

The exercise (Figure 3) requires advance programming, where the Java programming is used to handle the exercises. Java programming is used because the question will randomly appear and each time the users do the exercise the question will be different. In order to make the questions appear randomly, database or question bank is needed. There are 30 questions prepared for the question bank and each time users answer the question, only 10 questions will be displayed. Figure 4 (below) shows the screenshot of the mobile learning.

The implementation and testing phase is where the application development is administered to the target user. This phase is important to detect minor errors and to test whether the application is working properly. Any errors will be recorded and fixed.

Evaluation phase is the phase which decides whether the course is effective and satisfies the project objectives. This is also the phase to get feedback from the users which involve during development and delivery. The testing is done to test the usability and to get the users' feedback based on the different aspects of learnability, memorability, simplicity, satisfaction and overall reaction to the application. The completed application was distributed to the 30 target user, where they have to install the prototype in their android smartphone. The questionnaires also provided to the users in order to evaluate the application. They will be given time to test the application and answer the questionnaire.

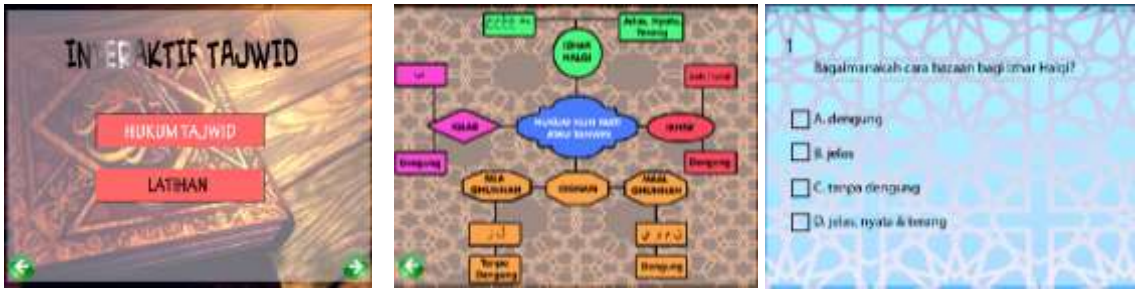


Figure 4: Screenshot of the mobile courseware

## 4. RESULT AND DISCUSSION

The test was conduct by using test by group technique. Since the target users consists of two genders which are female and male, this technique is used to compare the result between the two groups. Table 1 shows the comparison result between female and male group towards the usability aspects which are learnability, memorability simplicity, and satisfaction. The variable 0 is labeled for male which have 12 samples while 1 is labeled for female which have 18 samples.

Table 1: Group Statistics

**Group Statistics**

| | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Learnability | 0 | 12 | 3.83 | .937 | .271 |
| | 1 | 18 | 4.17 | .707 | .167 |
| Memorability | 0 | 12 | 4.08 | .900 | .260 |
| | 1 | 18 | 4.50 | .514 | .121 |
| Simplicity | 0 | 12 | 4.17 | 1.030 | .297 |
| | 1 | 18 | 4.78 | .428 | .101 |
| Satisfaction | 0 | 12 | 4.58 | .669 | .193 |
| | 1 | 18 | 4.61 | .698 | .164 |

The evaluation compared the mean for every aspect. The higher mean interprets the users' preferences toward the aspects. From the Table 1 we can see that the highest mean for male students is on the satisfaction aspect with 4.58 while the highest mean for female students is on the simplicity aspect with 4.78. Therefore, the result indicates that most female students like the simplicity of the application and most male students prefer the satisfaction aspect of

the application. The learnability aspect was not so popular amongst the male as compared to the females. Both genders were somewhat agreeable in terms of memorability.

To get a better understanding of the usability, an interview session was conducted with the religious teacher or *Ustazah* and a few students from the class after lab session. The *Ustazah* was very impressed with the application. She felt that students would understand the concepts in Tajweed better with the help of mobile learning and narration rather than books and normal classroom teaching.

Students that were interviewed had many praises for the learning application, and particularly enjoyed the simplicity of all the Hukum Tajweed and the explanation of each Hukum. The concept of mind mapping applied in the courseware made the learning process easy and the exercises in the form of quizzes were well structured and strengthened their understanding.

## 5. CONCLUSIONS

This study was conducted to overcome the problems faced by teacher and students while learning the rules of Tajweed. This mobile learning had provided an interactive learning environment to the students using a mobile. Other than that, the mind map made the learning process easier to understand. Students could handle the learning process on their own without any tutoring. This application managed to get raving reviews from both teacher and students and It could possibly be a starting point for many Muslims who want to learn to read the Quran properly (with correct pronunciation). It gives the opportunity to many people to learn independently, at their own pace, anytime, anywhere.

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