DECLARATION

I hereby declare that this report is based on my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at University Sultan Zainal Abidin or other institutions.

________________________________________
Name   : Khairul Khairina Binti Mustafa

Date     : 23rd December 2018
CONFIRMATION

This is to confirm that:

The research conducted and the writing of this report was under my supervision.

______________________________
Name : Pn Rohana Binti Ismail

Date : 23rd December 2018
DEDICATION

All praises is due to Allah (Glorified and Exalted is He). Indeed, He deserves the best of thanks and the most beautiful of praises. Without his blessings, I would not be able to complete this final year project. My hearties gratitude and deepest thanks goes to my beloved supervisor, Pn Rohana Binti Ismail for the continuous support, valuable guidance and critical comments throughout the development of the project. Appreciation also goes to all lecturers who have provided guidance throughout the entire long journey.

In addition, I am grateful for the continuous moral support given from my family even before the project started to the end of the project submission. A lot of thanks and appreciation goes especially for my parents for always being there for me along the hardship and always pray for me. Indeed, the support given really help to motivate me to complete this project.

Last but not least, my sincerely thanks to my fellow friends who willing to help me to complete this project and give a good suggestion in order to improve this project. Lastly, I would like to acknowledge each and every person who has contribute to the success of this final year project, whether directly or indirectly. May Allah S.W.T bless all of them.
Now, day by day technology is growing rapidly. However, the way to study tajweed at school is still the same as using the traditional method of using textbooks. Students are getting bored with this kind of learning. So, Learning Tajweed Using Mobile Application (EzTajweed) is a method that helps primary school students in addressing this issue. This application will help primary students to learn tajweed in a fun way because the application contains a multimedia element that suits their age. Besides the module of learning tajweed, the application also contains some quiz to the user to make sure they understand what they have learned.
ABSTRAK

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1.1 Background

In this era of globalization, technology has become a convenient and useful way for communication and interaction between individuals. Day by day, technology becomes more and more advanced and in accordance with the time flies. Technology has become a part of our life because nowadays, everything that we do are using technology and it will help our life easier when used it. Neither young people nor old people use technology in their daily life activity. As usual, everything that is invented has their own pros and cons. So, people must use it in a proper way.

One of the technologies that have become a trend in society is a mobile application. The mobile application is popular regardless their age and all of them carry it wherever they go and it is the most convenient device to access anything quickly (Firdzarullah, 2017). That is why a mobile application is a very demand item from people around the world. The mobile application is a very good way to motivate people into learning something or use the application to help them through their daily activities. Unfortunately, people tend to misuse this device into doing something which is not useful to them such as gaming. Therefore, mobile application related to education must be provided especially Islamic education.
Learning Tajweed Using Mobile Application (EzTajweed) is one of the methods that can help children in range 7 to 12 years old and teacher in the learning session. When we recite the Quran, there are rules of tajweed which must be obeyed. So, this mobile application is a method that helps children to easily understand the law. This is because, children are attracted to something that has multimedia elements such as pictures, colours, audio, videos and so on. This application might contain some videos about how to pronounce the ‘makhraj huruf’, the description of the law, example of Quran verses, letters in the law and some quizzes that user can play after they learnt about some topics in this application.

1.2 Problem Statement

Nowadays, the student learnt Tajweed at school and used a traditional method which is by using a textbook. By doing this method, a student will feel bored and the process of learning will not fully be received by the student. A student with range 9 to 12 years old always attracted to something that has multimedia elements such as colours, audio, video. Based on the previous studies about the multimedia element, a highly significant role of multimedia in early childhood education for increased their content knowledge and understandings. The different types of multimedia are highly significant to their academic performance. (Singh, S & Mishra, S, 2013). Thus, this learning tajweed using mobile application (EzTajweed) was developed to provide student learnt in a fun way and attractive way.
1.3 Objectives

This are objectives that have been identified in this project.

1. To design a courseware based application Learning Tajweed (EzTajweed) for primary school student using Android.

2. To develop a courseware application Learning Tajwid (EzTajweed) for primary school student in efficient way.

3. To test the functionality of Learning Tajwid (EzTajweed).

1.4 Project Scope

The scope will explain the actors that involve in this system and their functionality. Learning Tajwid (EzTajweed) is an android based application that using mobile application where a student can learn tajweed law in an attractive way.

1.4.1 User Scope

1. Student
   Student can used it as a learning aids.

2. Parent
   Can check their child’s score.
1.4.2 System Scope

1. Tajweed module

This application will show some of the tajweed law which is “Hukum Nun Mati”. This also includes the description of each rule, the way to pronounce the law in animation.

2. Activity module

This application will have some quiz at each subtopic.

1.5 Limitation of Work

This application has its own limitations of works as mention below:

1. This application only focus at certain topic which is “Hukum Nun Mati”.

2. This application used “Bahasa Malaysia” as a main language.

3. This application only can used in android based application.

1.6 Expected Result

1. Design an android application that will support learning Tajweed with multimedia elements.

2. The application will be function.
### 1.7 Milestone

<table>
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CHAPTER II

LITERATURE REVIEW

2.1 Introduction

Basically, in this chapter, the study of techniques, methods and approach is done. The related journal an article about the various technique and approach was analysed to find out the best implementation technique that can be used in this Learning Tajweed using mobile application (EzTajweed), the comparison between the different techniques is done to get a better understanding for each technique effectiveness. Then, the related application that has the same functionality as EzTajweed is a review to help in understanding and gain knowledge about how to implement the application in real.

2.2 Mobile Application Learning

Mobile application learning can be developed for many different purposes. They can be an entertainment purpose, learning the purpose, and so on. The majority of mobile learning can be having audiences or user that is a lack of skills. They may not interest in taking part in traditional education and training. The excellent mobile application is they can interact with audiences or user which is user-friendly.
Mobile technologies can support learning across different contexts as their portability enables them to be used by a learner in whichever context she or he is. They can be particularly beneficial in informal and semi-formal contexts where learners have more control over their learning goals and where motivation is often high. (Ann, 2012)

2.3 Tajweed Law

Many Islamic Scholars have highlighted the meaning of Al Tajweed literally and technically. The word Tajweed is derived from the Arabic root Jawwada, which means to make well, to improve or to make good. It also means to enable, to make possible or to bring forth what is better. As a technical term, Tajweed means to make good or to better the recitation of the Glorious Qur’an by giving each letter its right with regards to the correct way of pronunciation. (Nasallah, 2016) There are many rules need to be understood by a reciter. The rules have their own names such as the rules of Idgham Bilaghunnah, Idgham Maalghunnah, Ikhfak Hakiki and many more.

Al-Quran is a life guide for Muslims. It covers all aspects of life. Hence, it is an obligation for Muslims to learn Quran because they need to understand the content of each surah (chapter) and the verses that they read. In addition, in performing the daily solah, one needs to read chapters or verses of the Quran and usually, these are read with tajwid. (N.H Saari, C.Umat, K. Shukri, M.Teh, 2012)
2.4 Analysis Model

i. Conceptual e-Tajweed Learning Model (e-TLM) Based On Semantic and Multimedia Elements.

Figure 2.1: sample of user interface menu option in e-TLM prototype

Tajweed is the knowledge and application of the rules of recitation so the reading of the Holy Quran is as the Prophet Mohammed peace and blessings are upon him, recited. This study proposed the new conceptual model for teaching and learning Tajweed. The model in this study was designed specifically for a user who wants to learn Tajweed. It also assists those who do not have the chance to meet a teacher in their local area, by assisting them to seek this sacred knowledge of Holy Quran and Tajweed. This study also explains the laws of Tajweed and focuses on the problems that user have in reciting and understanding in the Holy Quran properly. The primary goal of the study is to develop an e-TLM which provides an interactive and intuitive learning environment. The objective of this application is to investigate the currents method used learning Tajweed in Malaysia. Second, to construct a model for e-learning Tajweed that adapts semantic and multimedia elements and the last
one is to evaluate the proposed model. Therefore, this study tries to solve the problem by developing an e-TLM using semantic and multimedia elements. (Nor Hashidah Mohd Nasir, Fauziah Baharom, Harryizman Harun, Haslina Mohd, Ali Yusny Daud, Norida Muhd Darus, Ahmad Ghadafi, Azman Yasin, 2010)

ii. Tajwid4U Mobile Platform – Enabling People to Learn Tajwid at Their Comfort Space and Time.

Learning to read Al-Quran has always been compulsory to all Muslims. But, most of us do not know that reading Al-Quran with a proper tajwid and rules is also mandatory because the meaning of each word in Al-Quran will differ without proper pronunciation. It is also hard to learn it by ourselves without proper guidance from knowledgeable people such as Ustaz/Ustazah and Madrasah Tahfiz. However, people do not have time or money to go learn at the Madrasah and pay the tuition fees or with the people who are qualified.

Not every people has time or money to go and learn tajwid at the Madrasah or with Ustaz/Ustazah. Therefore, many people do not know how to read Al-Quran with proper pronunciation and rules. It is a sin to read Al-Quran with a wrong pronunciation because it can alter the meaning of the ayat. Therefore, it is necessary to provide a platform where people can learn tajwid from the Madrasah and the qualified people such as Ustaz/Ustazah to guide them properly.

![Figure 2.2: mobile courseware of M-Tajweed](image)

Tajweed is 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 in technology are now shifting from the traditional learning environment which is in the classroom to a 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, a student is facing problems in understanding the rule of Tajweed due to their limited time with their teacher in the classroom. Therefore, with the help of 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 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. 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 Mohd Rias, 2009)

iv. Secil Tajwid Mobile Application

![Secil Tajwid Mobile Application](image)

*Figure 2.3 : User Interface of Secil Tajwid.*

Secil Tajwid is a courseware learning application for kids that will help them to gain knowledge for reciting Al-Quran with a proper way. This app is a child education app that helps children learn to read al-Quran correctly with the law of the divine in a fun way. In this app children will learn how to read the correct Al-Quran with tajwid law like idzhar, idgham, iqlab, ikhfa and many more. The concept of learning in this app is designed interactively with an interesting game and interesting sound so the kids are not bored when playing.
### 2.5 Comparison between Journal and Mobile Application

<table>
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<td>Nor Hashidah Mohd Nasir, Fauziah Baharom, Harryizman Harun, Haslina Mohd, Ali Yusny Daud, Norida Muhd Darus, Ahmad Ghadafi, Azman Yasin</td>
<td>Conceptual e-Tajweed Learning Model (e-TLM) Based On Semantic and Multimedia Elements.</td>
<td>This study proposed the new conceptual model for teaching and learning Tajweed. The primary goal of the study is to develop an e-TLM which provides interactive and intuitive learning environment.</td>
<td>e-learning method</td>
<td>Used semantic and have multimedia elements.</td>
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<td>Firdzarullah Aminuddin, Muhammad Ghufran bin Musa, Abdul Rahman Ahmad Dahlan</td>
<td>Tajwid4U Mobile Platform – Enabling People to Learn Tajwid at Their Comfort Space and Time.</td>
<td>This study proposed some of the application that are in Play Store that is free to use and the application contain Tajweed law. User can install the app and it is very easy to use.</td>
<td>Mobile Platform</td>
<td>Easy to use it. Have audio to listen how to read the Quran with proper pronunciation and rules.</td>
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<tr>
<td>Noor Aziezah Sardan, Riaza Mohd Rias</td>
<td>M-Tajweed : A Mobile Courseware to Assist in Tajweed Learning.</td>
<td>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.</td>
<td>Used mind map as a teaching approach.</td>
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<td>Solite Kids</td>
<td>Secil Tajwid Mobile Application</td>
<td>This app is a child education app that helps children learn to read al-Quran correctly with the law of the divine in a fun way. In this app children will learn how to read the correct Al-</td>
<td>Easy to use it. Have multimedia elements that can attract the kid to learn about Tajweed.</td>
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Quran with tajwid law like idzhar, idgham, iqlab, ikhfa and many more. The concept of learning in this app is designed interactively with interesting game and interesting sound so the kids are not bored when playing.
2.6 Conclusion

This chapter discusses the collected literature review that had been reviewed during the feasibilities studies. The literature review helps the developer to discover the problem of previous research which needs to improve and overcome the problem. The main method that is suitable to use in the development of the mobile app is an interactive learning method.
3.1 Introduction

Basically, this chapter explains the detail of methodology that being used in the development of Learning Tajweed Using Mobile Application (EzTajweed). The project methodology is important in every project because it helps to organize investigation in a scientific way to overcome problems, to discover new facts or truth about the subject in order to achieve the objectives of the project. In order to have a good project, it should begin with a good understanding of the user’s needs. There are many approaches that can be used in the development of a mobile application project. ADDIE Model is one of the approaches that will be used in this project.

3.2 Methodology Model

Instruction System Design (ISD) that is used to develop this “Learning Tajweed Using Mobile Application (EzTajweed)” application is ADDIE model. Basically, ADDIE model have five phases which are Analysis, Design, Development, Implementation and Evaluation. The ADDIE model is an iterative instructional design process, where the results of the formative evaluation of each phase may lead the instructional designer back to any
previous phase. These phases sometimes overlap and can be interrelated. However, they provide a dynamic, flexible guideline for developing effective and efficient instruction.

Figure 3.1: ADDIE Model

3.2.1 Analysis Phase

The analysis is the first phase that is contained in the ADDIE model. The analysis is the study we do in order to figure out what to do. (Sheldon, 2001) At this stage, we need to identify the need to develop this EzTajweed mobile application. Then, the activities are involved in this phase is identifying the problem statement, the objectives or goals of the project and the scope key actions that are included in the application. In this EzTajweed are focusing on basic Tajweed which consists of “Hukum Nun Mati” only. The analysis is also carried out by doing a comparison between existing products that are using mobile application technology in learning Tajweed. Through the analysis, the weaknesses of the existing application that are relatable to this Tajweed learning can be identified. All
information gathered were used to develop goals and objective of developing mobile EzTajweed application.

3.2.2 Design Phase

During the design phase, the information gathered during the analysis phase is reviewed and compiled to build the project. In the design stage, it is necessary to create a storyboard or interface of the mobile application. This means that it is necessary to have all the accurate guideline to ease the step in this development process. This phase requires a logical and creative thinking skills. All the characters also have been created in this phase. These characters will be used from the start until the end of the mobile EzTajweed application.

3.2.3 Development Phase

This is the third phase of the ADDIE model. With all the information gathered at the analysis and design phase, then this mobile EzTajweed are developed. Most of the development process was done in Adobe Flash CS6. All the materials that are involved in the design phase will be integrated and customize in this phase according to the storyboard. In this development phase also, it uses any approach or design that has been agreed upon in the design stage. For example, users are provided with help button to prevent users from having trouble using software and have various graphics, sound
effects and so on are provided so users do not get bored in the process of playing this game app.

### 3.2.4 Implementation Phase

The ready-to-formed EzTajweed mobile application should be presented to test the effectiveness and to see unnoticed problems during the design and development phase that may exist. This implementation phase is implemented by presenting to providers and partners to meet the criteria set out in the analysis phase. From the observations performed, the repair or recovery process will be implemented before the application is actually issued or used officially.

### 3.2.5 Evaluation Phase

Evaluation involves the process of obtaining feedback from users on the content, strategies, graphics, audio, interfaces and so forth that are available in this app by either supervision, testing, questionnaire, interviews and so on to ensure it is appropriate or not to use.
3.3 Hardware and Software Requirements.

3.3.1 Hardware

- Laptop
  Laptop Asus with 10GB memory, 64-bits operating system was used in developing this EzTajweed application.
  Laptop also used to create the sketches for the characters, background and create scripts or document related.

- Printer
  Used to print all the hard copy of the system.

- Pen drive and external hard disc
  Used to back up all the data, report and design of the project.

3.3.2 Software

- Adobe Flash CS6 and Action Script 3.0
  Used to create the mobile application and overall project.

- Adobe Photoshop
  Used to create sketches of background, characters and character design.

- Adobe InDesign CS6
  Used to design storyboard.

- Xampp
  Used to store some data in quiz module.
3.4 Application Design

3.4.1 Navigation Maps

Figure 3.2: Navigation map of the Learning Tajweed Application (EzTajweed)
3.4.2 Storyboard

Storyboard is one of the things that developer might do before creating a mobile application. Storyboard is important as a guideline to the developer for developing an interactive mobile application “Learning Tajweed Using Mobile Application (EzTajweed).

In figure 1, the logo of EzTajweed will pop out. Then, figure 2 shows the login interface which user need to enter their name for playing an interactive learning application. This name is used to store user’s data in the database. After the user enter their name, then the homepage of the application will pop out. This interface contains three activities which are modules, quiz and scoreboard. When the user clicks the module activity, there are some ‘Hukum Tajweed’ that user can choose to learn. In the module, the user can learn Tajweed in an easy and attractive way. The user can hear audio about how to pronounce the ‘huruf’ with the verses of the Quran, the description about the ‘Hukum Tajweed’ and there is a video about the ‘Makhraj Huruf’.

The next activity is a quiz module. The quiz module contains three levels of quizzes. The user needs to pass a level one quiz to pursue to the next level. The user can see their score after answer the quiz when the user clicks the score button.
3.4.3 **Design Interface**

The interface design of the Learning Tajweed Using Mobile Application (EzTajweed) is using a design that suits the scope of the project which is for primary school kids. The design of the mobile application contains multimedia elements such as texts, audio, video, a colour which suitable for range 7 to 12 years old kids.

For the homepage interface as in figure 3, there is a button help to guide the user using the application. In the module ‘hukum’ as in figure 5, there is a button ‘huruf’, ‘pengertian’, and ‘potongan ayat’. When the user click the button ‘huruf’, there is the ‘huruf’ of the tajweed law and at the bottom right corner, there is a button play. When the user clicks the button play, the screen will pop out a 2-Dimensional animation about how the ‘makhraj huruf’ will be pronounced correctly.
Next, when the user clicks the ‘potongan ayat’ button there will be the ‘potongan ayat’ of the Quran and user can click the button play, pause and stop at the bottom of the interface. The user can hear the audio of how to recite the ‘ayat’.

Lastly, at the quiz module, there are three levels of a quiz. Level one is quite easy which contain a true-false question, level two is an intermediate level which user will choose the correct answer and lastly, level three user must fill in the empty space based on the tajweed law. When the user answers the question, there is audio that will generate depends on the answer whether right or wrong.

3.4.4 Entity Relationship Diagram

An entity relationship diagram (ERD) is a specialized graphics from that illustrates the relationships between entities and database. ERD is crucial to creating a good database design. There are three basic elements in ERD which are:

- Entities are the “things” for which we want to store information. An entity basically a person, place, thing or event.
- Attributes are the data we want to collect for an entity.
- Relationships describe the relations between the entities.

Figure 3.3 shows the entity-relationship between user, question, level and score. The user has a one-to-many relationship with question and score entity. The question has one-to-one relationship with the level entity.
Figure 3.3: Entity Relationship Diagram about Learning Tajweed Application EzTajweed)
3.5 Conclusion

This chapter describes about the methodology that has been used, explain the hardware and software requirement that is guide to successful of this project.