BORANG PENGESAHAN STATUS TESIS*

JUDUL: **MOBILE APPLICATION FOR KIDS: HUMAN BODY SYSTEM**

SESI PENGAJIAN:**2014/ 2015**

Saya **HAZYANTY SHAHIRA ABDUL HALIM**
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I hereby declare that this project entitled

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SUPERVISOR : _____ Date: 27/8/15
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DEDICATION

This Projek Sarjana Muda is dedicated to my beloved family for their unlimited support, prayer and useful advices whenever I need it along the process in developing this project.

To my supervisor who has guided and give me lots of advices, supports, and useful comments in order to improve my project,

Pn. Shahrul Badariah Binti Mat Sah.

To my evaluator who gives good comments and advices on this project,

Pn. Norazlin Binti Mohammed.

Finally, to all my beloved friends who has help me a lot in completing this project.

ABSTRACT

Projek Sarjana Muda is a compulsory subject for final year student in UTeM. This subject require students to develop a project and document a research thesis based on the project that have been develop. Human Body System Mobile Application is developed to attract kids learning this topic using mobile devices. This app teach kids about three human body system which are breathing system, excretion system, and defecation system. The target user of this app is for students in Standard Four of primary school. The learning content of this app is based on the syllabus of Science subject in Standard Four. This application will help student in learning this topic in an interactive way using 2D animation learning approached. The interface design of the app is suitable for kids. This project is developed for Android platform devices using Adobe Flash CS6 software. By developing this application, students can understand this topic better based on the feedback from them. But, there is still lot of improvements can be made to make this application much better.

ABSTRAK

Projek Sarjana Muda adalah salah satu mata pelajaran yang wajib diambil bagi pelajar tahun akhir di UTeM. Mata pelajaran ini memerlukan pelajar untuk membangunkan satu projek dan dokumentasi tesis berdasarkan projek yang dibangunkan. Human Body System Mobile Application *ini dibangunkan untuk menarik minat kanak-kanak mempelajari topik ini menggunakan peranti mudah alih. Aplikasi ini mengajar kanak-kanak tentang tiga sistem tubuh badan manusia iaitu sistem pernafasan, sistem perkumuhan, dan sistem penyahtinjaan. Sasaran pengguna untuk aplikasi ini adalah pelajar-pelajar yang menuntut di Tahun Empat sekolah rendah. Isi kandungan pembelajaran yang terdapat di dalam aplikasi ini adalah berdasarkan sukatan pelajran yang terdapat dalam mata pelajaran Sains Tahun Empat. Aplikasi ini boleh membantu pelajar mempelajari topik ini dengan memperkenalkan pendekatan belajar menggunakan animasi 2D. Reka bentuk antara muka yang digunakan dalam aplikasi ini adalah sesuai untuk kanak-kanak. Projek ini dibangunkan menggunakan perisian* Adobe Fash CS6 *untuk peranti yang menggunakan platform* Android. *Dengan membangunkan aplikasi ini, pelajar boleh memahami topik ini dengan lebih baik berdasarkan maklum balas yang diterima daripada mereka. Namun, masih banyak penambahbaikan yang boleh dilakukan untuk menjadikan aplikasi ini lebih bagus.*

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ACRONYM	DEFINITION
PSM	Projek Sarjana Muda
UTeM	Universiti Teknikal Malaysia Melaka
APP	Application
2D	2 Dimension
3D	3 Dimension
SWF	Shockwave Flash
PNG	Portable Network Graphics
SJK(C)	Sekolah Jenis Kebangsaan (Cina)
PC	Personal Computer
OS	Operating System
HTML	Hypertext Mark-up Language
FLA	Flash
APK	Android Application Package
ECG	Electrocardiogram

CHAPTER I

INTRODUCTION

1.1 Introduction

Mobile devices have becoming a new phenomenon not only among adults but also children of all ages. Based on the existing research on the article from a website, children use these devices most frequently for entertainment purposes especially to play games and surfing internet and enjoy social networking more than for its educational purposes.

Consequently parents and educators in general are concerned with the impact of this phenomenon among their children. This is due to the inappropriateness of the apps content and graphics for their growing children. So, the reason of developing this project is to develop more educational-appropriate mobile apps that is suitable for children.

This app is develop special for kids in Standard Four in Malaysia. This is because the content of the app are based on the Science subject that they learned in school below the topic of *Living Things Undergo Life Process*. But, any range of age can also use this app also. This is a mobile app that teach kids about human body system that have beautiful and cute graphics, concise information that describe in a simple ways that easily to understand, and will give them more experience on learning that because he/she can control or play with it by himself/herself. Indirectly, this app may encourage them to live in a healthy life.

1.2 Problem Statement

Based on the research made by Dr. Gentile, he stated that kids from 8 to 18 years old spending most of their time in front of the gadget. They fill their free time with other internet activities such as social networking, instant messaging, blogging, and downloading besides gaming. To avoid them from using their gadget for inappropriate things, this project will develop an app that is beneficial for them. This topic have been taught to student of standard four in our country under the topic of *Living Things Undergo Life Processes*. Despite of there is lack of academic material that can be achieved through mobile nowadays, there is also weakness on how the human body system being taught to the student. For example this topic being taught only with the help of chart. So, student may hard to understand well about the process because they cannot see how the process goes in real way. So, by the help of this application, it can help them understand more about the process since this application is using 2D animation that can be one way to attract children to learn through it and easy to use anywhere and anytime because it can be achieve on their mobile device. The app that not just have educational element, but also entertainment that is good for their cognitive development.

1.3 Objectives

1. To study whether 2D animation can create an effective approach on learning human body system to children.
2. To develop a mobile application using 2D interactive learning approach.
3. To evaluate the effectiveness of the develop application by comparing it by learning through book or this mobile application.

1.4 Scope

This project will develop a mobile application for children that teach about human body system. The human body system is only focus on three system which are learn about human breathing system, excretion system, and defecation system. The target user for this application are student of standard four in age of 10 years old. It is an Android platform application and is a type of 2D interactive learning application.

1.5 Project Significance

From the whole project, it will bring benefit to school, parents, and children itself. For the school, this application will bring a new way of teaching about this topic to students that will improve existing system. While for the parents, this mobile application is good for their children to develop their cognitive skills. Lastly, for the

children itself this application not only can give them knowledge but also a good experience while using it.

1.6 Conclusion

As a conclusion, this mobile learning application may encourage kids to play it and will enhance their thinking and cognitive skills. Also to avoid them from using their gadget for inappropriate things and to add the academic materials that can be achieved through mobile. Moreover, it can improve the existing app nowadays that teach kids about human body system too by improving the design of the app that is more engaging and suitable for children. On the next chapter will discussed about the literature review.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This review will focus on the research that have been made from the general aspects to the specific aspects of this project. The general aspects are the research about mobile application. Then, this part will discuss about mobile application for kids' education. Lastly, the specific aspect discuss about existing mobile application for kids that teach about human body system.

2.2 Domain

Mobile application has become a worldwide trend that will continues to develop rapidly. The use of mobile devices in learning (m-learning) is also has become a trend in this era. M-learning has been considered as the future of learning or any other form of educational process in future. When focusing on mobile learning activities, use of application through game-based learning, user will gain more experience when playing with it and make them understand more about what they learn and they will practise it in their daily life.

All research that related to this project will be explained clearly. All topic was done by searching research paper to support the development of this project.

2.2.1 Mobile Learning

According to an article (Anna, 2003) the space of mobile learning can incorporate a variety of application for new teaching and learning methods. A mobile learning could be viewed as any type of learning in form of studying and teaching that happen through a mobile device. Different gadgets or mobile devices that exist are heading up on the market, with their limits and advances, incite distinctive thoughts for applying them on learning, subsequently any gadget can mean distinctive m-learning.

Since the term m-learning show up for the first time, lots of research is being carried out to study the cognitive and pedagogical parts of the utilization of mobile devices in education. Investigation had been carried out also on how valuable mobile computing devices could be for reading or for workplaces.

In a few papers some appealing positives sides of using new advancements of technology are underlined. A few discoveries show that presenting new types of teaching make students spend more time on studying on that subject, contrasting with other subject overall students' results are becoming better. In the meantime the new innovation gives new opportunities to students and to educators to train their cleverness. The assessment and the investigations of m-learning projects until now show mainly positive results until now. Meanwhile there are a few questions if this excitement is, or is not, a temporary side effect.

Many researches think that PDAs and other mobile devices ought to be seen more like more like extension, as opposed to substitute the current learning tools. In addition not a wide range of learning content and/or learning exercises are suitable for mobile devices.

2.2.2 Approach of M-learning

There are many approach had been used in m-learning which all that have only one objective which is to deliver the information to the user in an effective way. The approach used include 2D animation learning, 3D animation learning, game-based learning, and digital storytelling learning. The type of approach used is according to the suitability of the app that will be develop by considering the content of the app and the target user. The approach used are not restricted to only one type only, but different types of approach also can be used in an app by combining it.

2.2.3 2D Animation on Mobile Learning for Kids

Animation is the process of creating motion and shape change. There are many techniques of animation which are traditional animation, stop motion

animation, computer animation, and mechanical animation. 2D animation is under computer animation. (Wikipedia, 2015).

Animations can have truly positive effect on the user's experience of the developed application. They can make navigation simple, give information without the need of text or sounds and obviously, give a component of visual interest for a generally static interface. The best animation make the app simple and fun to use. But, if it not done legitimately, the app could deliver a repulsive experience on users.

Development of mobile application using 2D animation approach has become widespread use in the present. 2D animation proposed creative and innovative methods to kids. Through the 2D animation, the boring book can be change into an intriguing and alluring learning, which motivating and an exceptionally powerful approach to extend and to increment obtained knowledge of that particular subject.(Husna, Salleh, & Sciences, 2005)

2.2.4 Learning Method used for Teaching Human Body System to Kids

According to *Kementerian Pelajaran Malaysia*, in Malaysia, this subject is taught to students in Standard Four in Science subject under chapter *Living Things Undergo Life Process*. This chapter cover the human and plants system. In human system, the topic cover are breathing system, excretion and defecation system, sensory system, and reproduction system.

This chapter is taught to students using some techniques of learning. Despite from teacher explaining this topic to their students by lecture in class, there also another techniques which is using charts (picture of human and the breathing, excretion, or defecation organ with the explanation). Using this technique, teacher shows the chart to the class and explain to them about the process. Secondly using

outdoor exercise technique. In this technique, teachers and student doing some exercise activities at the school field. Then, teacher ask the student to check on their rate of breathing after doing that exercise. Then, teacher explain how the process happen to the children. Moreover, the presentation of video also being used to teach this subject. Lastly, to measure the effectiveness of the teaching method used, students will be given assessment to be answer in the activity book. This is to measure their level of understanding about this topic. (Dan, n.d.)

So, our students does not get exposed on learning this topic by using mobile application yet. By developing this project, it can introduce a new teaching method for learning human body system to students. This may increase their level of understanding about this topic.

As a conclusion, this human body system can bring more benefit when using m-learning because the content is universally accessible at anytime and anywhere. Moreover, student can revise this topic easily because it is more lightweight than book and PC. Lastly, it is potentially a more rewarding learning experience to students while learning this topic.

2.3 Existing System

There are many education apps that teach kids about human body system that are available in the market now. Here, are three example of app. Then comparison between this three app and the app that will be develop have been made.

1. My Incredible Body

This is an app that learn about human body system. It consist of eight systems in human body which are respiratory, digestive, skeletal, urinary, muscular, sensory, and cardiovascular system. Kids can watch and listen as the app travel through the system. The graphic of this app is using 3D model. This app include option to zoom, rotate, and dissect the 3D models.

Figure 2.1: My Incredible Body

(Source from: https://www.commonsensemedia.org/app-reviews/my-incredible-body-a-kids-app-to-learn-about-the-human-body#)

II. Science Heroes: Digestive System for Kids

This app teach kids about human digestive system using game-based learning. There is a character that play role as a virus name "Ignarus". This character is evil when it causing trouble in the digestive system. Kids play a role as a heroes name "Yogators", have to make sure the process of digestion working properly from the beginning of the digestion phase to the end. The entire digestive system is covered through fun activities and also quizzes.