DESIGN AND DEVELOPMENT OF INTERACTIVE BOOK FOR MULTIMEDIA SYSTEM : MULTIMEDIA TECHNOLOGY, IMAGES AND ANIMATION

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This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Multimedia Interactive)

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DECLARATION

I hereby declare that this project report entitled

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DEDICATION

I dedicated this thesis especially to my parents, my stepfather, my grandmother and the whole of the families who gives me the continuous support. Without them, I would not come this far. From the bottom of my heart, I would like to thank them for their trust they put on me. I hope they will feel proud of me. I would also like to dedicate this thesis to the lectures who have thought me from the beginning until today. Without their knowledge, I am nothing.

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ABSTRACT

This project is an iBook project that are based on the subject of Multimedia System, but in terms of iBook (Interactive Book) and were delivered to the user by using iPad from Apple. iBook is an e-book application in an interactive way. This iBook will be used by degree students who enrolled Multimedia System subject. The iBook is containing interactive elements such as videos, image gallery, popup images, 3D objects and puzzles. The objectives of this project are to identify design elements for interactive books, to design and develop interactive books that consists of video animation and to evaluate the interactive book. This project is using ADDIE model for its development methodology. This project consists of three module which are Multimedia Technology, Images and Animation. There are 4 types of users will be involved in the testing process. They are the experts who has involves in the field of multimedia design, lecturers who will be teaching the subject, students who have already taken this subject before and students who will be taking the subject on next semester or later. As the results, it is proved that the product gave a good outcomes. The Experiment Group did well for their test after they explored the product. They improved a lot in the Post-test compared to their Pre-test, while the Control Group's results are just improved slightly. The target of this project is to help the students in learning. Hopefully, this iBook are able to help students to learn better.

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ABSTRAK

Projek ini merupakan projek pembangunan iBook berdasarkan pada subjek Sistem Multimedia, tetapi dalam bentuk Buku Interaktif dan telah digunakan oleh pengguna dengan menggunakan iPad dari Apple. iBook adalah satu aplikasi e-book dengan cara yang interaktif. IBook ini akan digunakan oleh pelajar-pelajar ijazah yang mendaftar Sistem Multimedia subjek. iBook mengandungi unsur-unsur interaktif seperti video, galeri imej, imej yang timbul, objek 3D dan teka-teki . Objektif projek ini adalah untuk mengenal pasti elemen-elemen reka bentuk untuk buku interaktif , untuk mereka bentuk dan membangunkan buku interaktif yang terdiri daripada animasi video dan menilai buku ini secara interaktif. Projek ini menggunakan model ADDIE bagi perkembangan metodologinya. Projek ini terdiri daripada tiga modul iaitu Teknologi Multimedia, Imej dan Animasi . Terdapat 4 jenis pengguna akan terlibat dalam proses ujian. Mereka adalah pakar-pakar yang telah terlibat dalam bidang reka bentuk multimedia, pensyarah yang akan mengajar subjek ini, pelajar-pelajar yang telah mengambil mata pelajaran ini sebelum dan pelajar-pelajar yang akan mengambil subjek pada semester akan datang. Keputusan membuktikan bahawa produk ini memberikan hasil yang baik. Kumpulan Kawalan dan Kumpulan Eksperimen melakukan ujian sebelum dan selepas mereka menerokai produk. Kumpulan Kawalan diberikan nota di dalam bentuk PowerPoint, manakala Kumpulan Eksperimen diberikan iPad yang mengandungi produk. Keputusan Kumpulan Eksperimen bertambah baik dalam *Post-Test* berbanding dengan *Pre-Test* mereka, manakala keputusan Kumpulan Kawalan hanya mempunyai peningkatan yang sedikit. Sasaran projek ini adalah untuk membantu para pelajar dalam pembelajaran. Mudah-mudahan, iBook ini dapat membantu para pelajar untuk belajar dengan lebih baik .

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LIST OF ABBREVIATION

ABBREVIATION	DESCRIPTION
2D	2 Dimensions
3D	3 Dimensions

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CHAPTER I

INTRODUCTION

1.1 Introduction

Generation Y is a generation that grew up with technology such as laptops, gadgets and smartphones. Tablets and smartphones are parts of their life and they prefer to communicate with others through free chatting applications rather face-to-face contact or phone call. Nowadays, students in high schools and universities are doing their assignments by using laptop or computer. They does not need to write their assignments by hand. They are not in the era where they need to go to the library to get the information about their studies. They are in the era where they can get the information through the internet. Someone has said that in this era, informations is just at your fingertips (Bill Gates, 1994).

This project are based on the subject of Multimedia System, but in terms of iBook (Interactive Book) and will be deliver to the user by using iPad from Apple. Ibook is an e-book application in an interactive way. As for this topic, there are two person in charge. Each person are responsible for 6 chapters. This iBook with Multimedia System subject will be use in class for Degree students. The iBook will contain interactive elements such as videos, image gallery, popup images, 3D objects and puzzles. This iBook is to attract the Y generation students to read the

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book. Students get easily bored and sleepy to read a textbook that have fully text in it. So, the iBook is the solution for the students to learn and read the textbook in a fun way. Anyway, the concept of book is they must have text in it. But, the text is more less than in the textbook and there are some visual explanation in terms of video or anything else that will help the students to understand better. Besides, this iBook is good for a slow learner students. They can view the examples or the explanations given repeatedly until they understand what it is all about.

This project is using iBook Author 2 that can only be use in MacBook or iMac. The iBook Author 2 contain several widget that helps to develop the content in iBook. For example 'Gallery' widget to insert a bunch of pictures, 'Media' widget to put videos, 'Review' to insert questions for the students to answer to test their understanding regarding the topic, 'Keynote' widget to insert interactive slides from Keynote application, 'Interactive Image' widget to insert image with several parts that can be point and zoom in towards the point, '3D' widget to put 3D image and students can rotate the image, 'Scrolling Sidebar' widget to put text or image with explanation in it, 'Pop Over' widget where user can tap on the image it will pop over the explanation about the image, and 'Html" widget to insert anything from other source. Besides, there are more amazing widgets that can be get from Bookry.com. We can build some puzzle regarding the topic for the students to play and rest their mind while studying. There are Calculator widget, Notepad widget, Before and After widget and many more.

This project will be use ADDIE model process throughout the project development and the project aim is to investigate either this model is suitable to develop an iBook for Multimedia System subject that will be use by the degree students. It is important to know whether the iBook helps the students to understand better or they prefer to stick with the usual textbook.

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1.2 Problem Statement

The problem is there are some students that are slow learner. Some of them cannot catch up with the subjects explain by the lecturers in class. With the iBook, they can read it repeatedly until they understand what the topic is all about. Students nowadays mostly does not like to read books. Most of them are easily to get bored and feel sleepy when they sees all the text in the text book. Some of the text book has images in it to support the explanation, but mostly they are using black and white color. It is too plain and non interactive at all. Other than that, there are students who cannot understand the thing they read, even they try to read it several times. This kind of students may exists. So, for this situation the visual explanation might help. As for the lecturers, it is difficult for them to attract the students to focus in class. For sure, there must be students who sleep in class, play with their handphones, chit-chatting with friends while the lecturer are teaching in front of the class and some of them has left their body in the class while their mind already gone somewhere else. So, with the iBook there are many activities can be done in class between the lecturer and the students. They has no time to get bored.

1.3 Objective

The objectives for this projects are :

1. To identify the elements for interactive book.
2. To design and develop interactive book that consists of animation video.
3. To evaluate either the students give a good feedback after using the interactive book.

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1.4 Scope

The scope of this project is the users that will be using the iBook and its functionality. Besides, there is a video animation in the interactive book for chapter 7 which was created by using Adobe Flash. The duration for the animation video is 1 minute and 50 seconds. All the images used in the interactive book are private ownership.

Table 1.1: Scope

No	Chapter	Title	Type and Software/ Application	Duration
1	Multimedia Technology	"Printer as an output device." Excerpt From: "Chapter 2." iBooks.	Video (iMovie)	43 Seconds
2	Multimedia Technology	"Example of video that shows speaker act as an output device." Excerpt From: "Chapter 2." iBooks.	Video (iMovie)	35 seconds
3	Multimedia Technology	"Differences between CD-ROM and DVD-ROM" Excerpt From: "Chapter 2 ." iBooks.	Video (Keynote)	39 seconds
4	Animation	"Example for 12 Principles of Animation." Excerpt From: "Chapter 7." iBooks.	Video (Adobe Flash)	1 minute and 51 seconds

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1.4.1 Specific User

The target user for the iBook are the degree FTMK students who enrolled the Multimedia System subject. They will be using the iBook as a textbook reference. Besides, the lecturers will be using the iBook for class engagement.

1.4.2 Specific Functionality

Table 1.2: Widgets of the project

No.	Widget	Description
1	Gallery	To insert the image in the iBook. This widget allow to enter multiple images.
2	Media	This widget is use to put a video regarding the topic into the iBook.
3	Interactive Image	The widget can be use to put an image and name all the specific compartment on the image. When tap on each compartment's name, it will zoom in to the specific compartment.
4	3D	This widget is to insert a 3D object. The object can be move freely to see every part of it.
5	Scrolling Side Bar	The function of this widget is to put extra information in the same page under the same subtopic.

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6	Pop-Over	The function of this widget to enter an image. When double tap on the image, extra information for the image will be pop-over.
7	Review	The function of this widget is to insert questions for the students to answer to test their understanding regarding the topic.
8	Bookery	There are several widgets that can be downloaded from Bookery.com website to insert puzzles, video from youtube, before and after image, and many more.

1.5 Project Significance

Multimedia System iBook is an e-book that can be download through AppStore and can be use only in iPad. Ibook is an e-book application in an interactive way. This iBook is to attract the Y generation students to read the book. Students get easily bored and sleepy to read a textbook that have fully text in it. So, the iBook is the solution for the students to learn and read the textbook in a fun way. Anyway, the concept of book is they must have text in it. But, the text is more less than in the textbook and there are some visual explanation in terms of video or anything else that will help the students to understand better. Besides, this iBook is good for a slow learner students. They can view the examples or the explanations given repeatedly until they understand what it is all about.

1.6 Expected Output

This project is expecting the students to understand better for the Multimedia System subject. Besides, the iBook should give the students a new

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learning experience. The most important thing is, the students had fun while learning, getting excited and interested to learn more.

After all, the most important things is the students who are using the iBook can get better results than before. That will show either the iBook application using iPad is a good or bad learning device.

1.7 Summary

Everything has been explained in the project background including the what the project is all about. Other than that, in this chapter are explaining about objectives, the scope, project significance, problem statements and expected output.

This project is a project of developing an iBook for the subject Multimedia System that can be use by the degree students who enroll this subject. This iBook will be develop by using iBook Author 2. Hopefully this iBook can help the students to understand better and help them to get a better results. The advantage of this iBook is for a slow learner students where they can play with the video or any other widget that explaining the topic repeatedly until they can understand what it is all about. Besides, the iBook can be use in classroom together with the lecturer explaining one by one.

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