

**DEVELOPMENT FOR KID'S LEARNING EDUTAINMENT
(EDU-PLAY)**

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FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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**DEVELOPMENT FOR KID'S LEARNING EDUTAINMENT
(EDU-PLAY)**

DAYANG KARTINI BINTI HARON

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2015

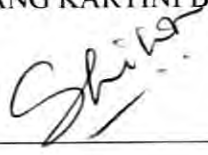
DECLARATION

I hereby declare that this project report entitled
DEVELOPMENT FOR KID'S LEARNING EDUTAINMENT (EDU-PLAY)

is written by me and is my own effort and that no part has been plagiarized
without citations.

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Date: 1/9/2015

DEDICATION

To

Emak and Abah

“Thank you for every single things. You are the greatest gift in my whole life.

It’s all for you.” – Dayang Kartini

Dear Buddy

“You always be there when I need a help.

You’re my best buddies in the world.” – Dayang Kartini

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Thank you, May Allah bless all of you.

Wassalam.

ABSTRACTS

The project that has been developed is entitled Development for Kids Learning Edutainment: Edu-Play, which focus on pre-school children aged 4 and 5 years old. Edu-Play product, developed by using 2D software, Adobe Flash CS5.5. The content of this courseware is to teach kids about Alphabets, numbers and shapes by using animals, fruits and any other objects that familiar with them as examples for learning the subject better. Edu-Play will be presented by using the combination of five Multimedia elements (text, graphic, animation, video and audio) and edutainment elements (song and game) as mentioned in objective. Got five modules, Alphabet module (A to Z), number module (1 to 10), shape module (star, square, heart, triangle, and circle). The target of this project is to deliver learning with interesting plus informative method to kids who are not able yet to learn Alphabets, numbers and shapes by using normal method. Platform that can be used is mobile phone or tablet (Android) because it is like trends to kids nowadays. Addie model has been used as methodology. So, in my testing phase, I used tablet and mobile phone (used .apk format). 20 kids from Tadika Generasi Cerdas has been chosen to be tester. After that the result from pre-test and post-test need to be calculated, compared and the output, result of post-test (Experiment Group) is better than pre-test (Control Group).

ABSTRAK

Projek yang telah dibangunkan adalah bertajuk “Pembangunan Kanak-Pembelajaran Edutainment Kanak-Kanak (Edu-Play)”, yang memberi tumpuan kepada kanak-kanak pra-sekolah berumur 4 dan 5 tahun. Produk Edu-Play ini dibangunkan dengan menggunakan perisian 2D, Adobe Flash CS5.5. Sasaran projek ini adalah untuk menyampaikan pembelajaran dengan kaedah yang menarik serta bermaklumat untuk anak-anak yang tidak mampu lagi untuk belajar huruf, nombor dan bentuk dengan menggunakan kaedah biasa. Kandungan perisian ini adalah untuk mengajar kanak-kanak tentang huruf, nombor dan bentuk dengan menggunakan haiwan, buah-buahan dan apa-apa objek lain yang biasa dengan mereka sebagai contoh untuk belajar subjek yang lebih baik. Edu-Play akan dibentangkan dengan menggunakan gabungan lima elemen Multimedia (teks, grafik, animasi, video dan audio) dan unsur-unsur pendidikan dan hiburan (lagu dan permainan) seperti yang dinyatakan dalam objektif. Di dalam Edu-Play terdapat Lima modul, iaitu modul Alphabet (A hingga Z), modul nombor (1 hingga 10), modul bentuk (bintang, jantung, empat segi, bulat, dan tiga segi), modul lagu dan modul permainan. Edu-Play telah menggunakan model ADDIE sebagai metodologi. Dalam fasa ujian saya, saya menggunakan tablet dan telefon bimbit (menggunakan format .apk). Kanak-kanak seramai 20 orang dari Tadika Generasi Cerdas telah dipilih untuk menjadi penguji. Mereka telah dibahagikan kepada 2 kumpulan. Selepas itu hasil daripada ujian pra dan ujian pos perlu dikira, dibandingkan dan hasilnya keputusan ujian pos (kaedah kumpulan Experimen) lebih bagus daripada ujian pos (kaedah kumpulan menggunakan cara pengajaran biasa).

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CHAPTER I

INTRODUCTION

1.1 Introduction

The University of South Pacific. *Dr. Bibhya. S* believed that Edutainment is a good concept for kids. They love to play. Besides, the kids around the age of 4 to 5 years old is very active of imagination and explores things around them (2013):

“Edutainment is an act of learning through a medium that both educates and entertains”. According to *Shanmugapriya M*, and *Dr. Tamilarasi* (2012) about Mobile Courseware:

“Technology plays a vital role in modernising global education systems worldwide.” Mobile devices like Mobile Phones, PDAs and Tablet PCs are emerging as a powerful pedagogical innovation in the area of teaching and learning process. These devices helps to deliver the multimedia based educational content and also facilitates the interaction among instructors and learners for knowledge sharing and gives a true collaborative experience.”

Moreover, *Shanmugapriya M*, and *Dr. Tamilarasi* also supported that it can include all the five multimedia elements, and the combinations will make the learning more effective to kids. They love something attractive like video song, games with cute and colourful graphics of characters (2012):

“The role of multimedia in education gives a major boost to this principles by integrating data, audio, video and other shared resources and creates a synergy among these learning objects. The existing learning tools are mostly adopted based on one-to-many approach and mostly faculty driven and is unsuitable in today's learning context”.

1.2 Project Background

In this project, entitled “Development for Kid’s Learning Edutainment: Edu-Play”, a study on the interaction of kids in learning to recognize and pronounce alphabets, numbers concept, and shapes. For example, learn to recognize *B* for Butterfly, with graphic, audio and animation .Then, with interesting song and game of learning to attract kids. Moreover, this Kid’s Learning Edutainment also research on the five Multimedia elements such as, text, sound, graphic, animation and video.

Most edutainment, video song and learning games more focused on having fun in singing, or a bored test without any imagination or movie clip. If a product combine singing song and playing game it will be more interesting.

1.3 Problem Statement

The problem statement that have led to the development of this project is that some of kids difficult to focus on learning something that only focuses text or a multimedia elements such as sound only, so as the solution must be a combination of multimedia elements such as video animation simulation that has text, graphics, sound, video and animation.

Moreover, by using books they hardly recognize alphabet. They commonly confuse with the letters because of less animation that make their imagination become active.

1.4 Objective

This project is based on the following objectives:

- i. To identify the multimedia elements that suitable for Kid’s learning Edutainment.
- ii. To identify the model development for Kid’s learning edutainment.
- iii. To develop Kid’s learning Edutainment with game approach.
- iv. To evaluate the effectiveness of Kid’s learning Edutainment.

1.5 Scope

This edutainment presentation period is between 3 minutes to 10 minutes. The reason to have limited duration is because a kid's patience to remain at a place is not long. It is important to make sure a kid and pay full attention to particular object. Consequently, edutainment with the mentioned time is sufficient enough to keep the kid attention. The limitation of this project mentioned below.

1.5.1 2D Animation

This project used 2D animation, and built by Adobe Flash CS5.5. The graphic and animation also 2D animation and used same software to create.

1.5.2 Target User

The target users that will be using this 'Kid's Learning Edutainment' are the kids around ages of 4 and 5 who has problem to learn alphabet and numbers well. The 'Kid's Learning Edutainment' only cover on topics as below:

- i. Learning Alphabets:
 - From A to Z with animation examples.
- ii. Learning number's concept:
 - From 1-10 with animation concept.
- iii. Recognize shapes:
 - Shape Heart, Triangle, Square, Circle, and Star.

1.5.3 Limitation of the project

This edutainment will cover on basic about Alphabets, numbers and shapes. Animals and objects as example to make them easier learned. Those are the common and basic to be learned at kindergarten. The product will be running on Android platform (format *.apk*).

1.6 Project Significance

The edutainment will be produced will signify especially on the young target users who are 4 and 5 years old kids. For the parents and teacher, this project will benefit them on new learning concept of kids.

1.6.1 Kindergarten kids

The young users will be benefit to become more imaginative and has a more creative brain. The user creativity development will be trigger throughout the storyline where imagining and provide answer to the similar object. The examples of cute animal, object and shape will be attractive to kids. In fact the game also produce sound and kids will feel interesting to learn more and more then they will repeat it again and again. Drill and practice in game is one of learning method. Song also can attract kid's brain.

1.6.2 Kindergarten Teacher and Parent

For kindergarten teachers, this edutainment can be use as teaching material. This edutainment can be used to teach kids about Alphabets, numbers and shapes using objects and animals as example to make them easier learned. Furthermore it can be used as a treat to the kids to watch cartoon while the education content is deliver.

In fact, this edutainment can help parents to make sure kids learning while watching television at home.

1.7 Expected Output

The expected output of the project is an edutainment that helps in kids learning become better. The edutainment will start with introductory song that apply all the Multimedia Elements that has text, graphics, sound, video and animation.. Then follow by Menu page and follow be teaching Alphabets, numbers and shapes.

This edutainment also will have a few cute characters that are in animal form to attract children attention. The character will be use in teaching and simple games that suitable for children around 4 and 5 years old .

Furthermore, the duration of the edutainment will be the minimum 3 minutes and the maximum is around 10 minutes . This is adequate enough to make the kids to learn and to be entertainment at time . The final output is swf and *.apk* format .

1.8 Summary

Overall, this chapter is briefly describing the purpose of the project that will be carried out based on the objectives of the study to fulfil the goals of this project. Next, this project will be continued with the following milestones Gantt chart that has been prepared to ease the successfully completion of this project.

In the future, this ‘Kid’s Learning Edutainment’ can be as value added product. It can be improved integrated and applied with other products to make it more useable. For example, it can be embed with Augmented Technology to make it more interesting and interactive. Then after that, it can be as commercial value product. It can be one of the important tools in kid’s education.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter discusses about the literature review and project methodology. Literature review is the review done by someone by considering the reading and studying of the existing application of game or courseware, article, journal, or any verified documents regarding the project conducted. Otherwise, a literature review discusses published information in particular subject area and sometimes information in a particular subject within a certain period of time. A literature review also can be just a simple summary of the resources but it usually has an organizational pattern and combine summary and synthesis. The literature review that included in this project related with the objectives. Besides, it contains all of the project elements, and how there elements related and combine each other until this project meet the end.

Meanwhile, the methodology for the project is also explained in this chapter. The methodology is the method chosen to be applied during the completion of the project. Among three approaches, the ADDIE approach has been chosen because it meet the specification of learning application development.

This chapter also contain comparison of others product and Edu-Play. Besides, the requirement for this project such as software and hardware requirement are also defined in this chapter. The project schedule and project milestone are also described in this chapter.

2.2 Domain

Development of Mobile Courseware (Android) is the domain for this Development for Kid's Learning Edutainment: Edu-Play. The ability to produce effective multimedia learning applications for technology that is ubiquitous is very appealing. In this era, mobile phones are becoming more technically sophisticated. They can create and play multimedia content, they have larger high quality colour screens, many models can now capture, edit, and play back video, audio, and photographs, many models can also run Flash-based interactive applications (if downloaded Adobe AIR for *apk* format in android or *Flash Lite* to run *swf* format). They also have greater storage capacity, and networking connectivity with PCs the Internet with Bluetooth and Wi-Fi. Surveys conducted with university students show that they own mobile phones that have multimedia and connectivity capabilities in increasing numbers (*Cook et al. 2006*). Harnessing the use of these devices for multimedia learning resources which are known to engage and motivate students could be a powerful way of providing learning materials to students who need more flexible learning solutions because of other time demands in their life (*Boyle 1997*). Specifically, multimedia learning objects can provide multimodal channels that enable students to build up their own knowledge representations of the task in hand.

On top of that, Mobile learning is the convergence of mobile computing and e-learning. Mobile learning solutions are highly effective and mobile learning content delivery has been rated as a successful ICT based learning method for development communication and edutainment. For instance, several edutainment strategies using low cost mobile phones are being tried by national and international organizations to run awareness campaigns and disseminate information about important development concerns- HIV/AIDS, Tuberculosis, Environment, Sexual Violence, etc. To study the mobile phone gaming practices of youth and the efficacy of some of these games, two games were selected on HIV/AIDS and Tuberculosis.

2.3 Multimedia elements

Examining the word multimedia, it can be seen that there are two elements; “multi” meaning having more than one form, and “media” meaning the environment where the information is conveyed (*Marmara University, 2003*). In a simple way, those items which appeal to the eye, ear and sense of touch can be described as multimedia. According to *Heath (2000)* using or presenting the data in two or more forms is called multimedia. Similarly, *Mayer (2001)* describes it as supporting the presentation of information with graphic and text. *Jonassen, Peck and Wilson (1999)* state that when multimedia is mentioned, learning environments come to mind. While *Newby et al., (2000)* describes multimedia as environments which are compiling systems composed of many tools in the computer environment; *Smith (2002)* explains multimedia as the information environment which is formed by combining text, sound and graphics in a digital environment. According to *Heinich, Molenda, Russell and Smaldino (2002)*, multimedia presents various tools simultaneously or uses them in one program in a similar way. *Roblyer (2003)* describes multimedia as “multi tools” or “combination of tools”.

In this era, Multimedia elements are fascinating people in computer games, courseware or web environments, not only because of their power to influence cognitive and motivational processes, but especially because of their capability to stimulate emotions, like fear or pleasure. How to arouse emotions with Multimedia represents an issue in research which is usually related to computer games and learning courseware. There is tremendous research on how computer games can produce emotions like, for example, aggression (*Singer & Singer, 2002*). However, this kind of research focuses mainly on negative emotions (*anger, 2003*) and on general long-term effects of different games or media settings (including TV). It shows little about which specific Multimedia elements produce positive influences on short-term emotional processes (*Bryant & Zillmann, 2002*).

2.3.1 Text Element

Text used to convey message to user, learner or audience. Text can be lyrics or any narration text. The original words of something written or printed, as opposed to a paraphrase, translation, revision, or condensation. The words of a speech appearing in print.