BORANG PENGESAHAN STATUS TESIS

JUDUL : BIJAK KIRA, MATEMATIK TAHAP 1 : METAFORA PERMAINAN

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BIJAK KIRA
MATEMATIK TAHAP 1 : METAFORA PERMAINAN

NOOR ANIS BINTI BAHARUDIN

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

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2013

DECLARATION

I hereby declare that this project report entitled

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

STUDENT : _____ Date: _____
(NOOR ANIS BINTI BAHARUDIN)

SUPERVISOR : _____ Date: _____
(DR. NORASIKEN BINTI BAKAR)

DEDICATION

I dedicate this thesis to my beloved parent Baharudin Bin Mat Noh and Noreha Binti Abdul Aziz, who always support me in every way besides spend their time and money without hesitation. Not to forget to my siblings and friends who have been so close to me that I found them with me whenever I needed. It is their unconditional love that motivates me to set higher target.

I also dedicate this thesis to my supervisor Puan Norasiken Binti Bakar who always gives me support and ideas during her supervision. It is such an honour to me to have her as my supervisor. Last but not least to all students who will use this courseware, hope they can gain knowledge and have fun during learning activity.

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Finally, I also placed on record, my sense of gratitude to one and all who, directly or indirectly, have lent their helping hand in this thesis.

ABSTRACT

"Bijak Kira, Matematik Tahap 1 : Metafora Permainan" is an educational CD interactive courseware. This 2D module is a learning module for Tahap 1 primary school students which are for standard 1, 2 and 3 to learn mathematics.

The module consists of a main menu with 3 sub-modules which are "Panduan Pengajaran", "Lembaran Maklumat" and "Lembaran Kerja". All the explanation will be explained by using 4 multimedia elements which are text, picture, 2D animation and sound in order to attract the students and give better understanding.

In "Panduan Pengajaran" module, there are explanations about how to teach the students about the selected topic so that they can learn well. Therefore, in "Lembaran Maklumat" module, 2D animation will be used to achieve the objective to teach by using metaphor approach. For examples, there are scenarios that create using 2D animation such as playing balls, calculating animals at farm, buying foods at market, activity how to read time and date and also calculating length, weight and volume with correct measurement.

Meanwhile, in "Lembaran Kerja" module there are quiz that need to be answer by the students based on what they learn in module "Lembaran Maklumat". The questions for the quiz will be present in the form of board game such as a wheel game and drag and drop game so that can give exciting mood during the quiz.

ABSTRAK

"Bijak Kira, Matematik Tahap 1 : Metafora Permainan" adalah perisian pendidikan CD interaktif. Modul 2D ini adalah modul pembelajaran untuk pelajar Tahap 1 sekolah rendah iaitu untuk darjah 1, 2 dan 3 bagi mempelajari matematik.

Modul ini terdiri daripada menu utama dengan 3 sub-modul iaitu "Panduan Pengajaran", "Lembaran Maklumat" dan "Lembaran Kerja". Semua penerangan akan diterangkan dengan menggunakan 4 elemen multimedia iaitu teks, gambar, animasi 2D dan bunyi untuk menarik perhatian pelajar-pelajar dan memberi kefahaman yang lebih baik.

Dalam modul "Panduan Pengajaran", terdapat penjelasan tentang bagaimana untuk mengajar pelajar-pelajar mengenai topik yang dipilih supaya mereka dapat belajar dengan baik. Oleh itu, dalam modul "Lembaran Maklumat", animasi 2D akan digunakan untuk mencapai matlamat untuk mengajar dengan menggunakan pendekatan metafora. Untuk contoh, terdapat senario yang diwujudkan menggunakan animasi 2D seperti bermain bola, mengira haiwan di ladang, membeli makanan di pasar, aktiviti bagaimana untuk membaca masa dan tarikh dan juga mengira panjang, berat dan isipadu dengan ukuran yang betul.

Sementara itu, dalam "Lembaran Kerja" Modul terdapat kuiz yang perlu dijawab oleh pelajar-pelajar berdasarkan apa yang mereka belajar di dalam modul "Lembaran Maklumat". Soalan-soalan untuk kuiz adalah dalam bentuk "board games" seperti permainan roda dan gerakkan objek supaya boleh memberi mood yang ceria semasa menjawab kuiz.

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PSM	-	Projek Sarjana Muda

CHAPTER I

INTRODUCTION

1.0 Project Background

Project that will be developed is an educational CD interactive titled “Bijak Kira, Matematik Tahap 1 : Metafora Permainan”. This 2D module is a learning module for Tahap 1 primary school students which are for standard 1, 2 and 3 to learn mathematics.

This module will consist of 4 sub-topics that will be divided to 4 persons. Each person will be responsible for each sub-topic which is “Bab 1(Kukuh dan Cekap Matematik)”, “Bab 2 (Bijak Kira)”, “Bab 3 (Guna Matematik)” and “Bab 4 (Suka Matematik)”.

This module will be cover for “Bab 2 (Bijak Kira)”. The module will consist of a main menu with 3 sub-modules which are “Panduan Pengajaran”, “Lembaran Maklumat” and “Lembaran Kerja”. All the explanation will be explained by using 4

multimedia elements which are text, picture, 2D animation and sound in order to attract the students and give better understanding.

In “Panduan Pengajaran” module, there are explanations about how to teach the students about the selected topic so that they can learn well. Therefore, in “Lembaran Maklumat” module, 2D animation will be used to achieve the objective to teach by using metaphor approach. For examples, there are scenarios that create using 2D animation such as playing balls, calculating animals at farm, buying foods at market, activity how to read time and date and also calculating length, weight and volume with correct measurement.

Meanwhile, in “Lembaran Kerja” module there are quiz that need to be answer by the students based on what they learn in module “Lembaran Maklumat”. The questions for the quiz will be present in the form of board game such as a wheel game and drag and drop game so that can give exciting mood during the quiz.

In this project, Waterfall Model methodology will be used so that the developments are always on track. In Bijak Kira module, the design and interaction of 2D animation will be developing using Adobe Flash CS5. Since this module is develop using Adobe Flash CS5, therefore the animation of the 2D model will be done using Flash Action Script 3.0.

Finally, the testing will be done with the real students at school. This project will be a good teaching module in CD for primary students standard 1, 2 and 3 to learn about mathematics in attractive ways because it is using 2D animation. The students also more excited to solve the tutorial questions in order to play the games. Bijak Kira module will have market value and suitable for publication.

1.1 Problem Statements

There are some problems associated with teaching mathematics to Tahap 1 (Standard 1, 2 and 3) students. One of the problems is learning mathematics without attractive examples is hardly understood by the primary school students. This is the cause of the students have less interest in mathematics.

Next problem is the students cannot imagine the process of the calculation in the real situation. Students need fun and easy interpret examples for them to understand. Most of the students find the traditional way of studying is boring.

Final problem is students especially standard 1, 2 and 3 are easily given up while solving mathematics questions. Kids easily get moody if they cannot solve task that given to them. They need something that can encourage them to do it again and again.

1.2 Objectives

This project embarks on the following objectives:

i. To identify the attractive way to teach mathematics using 2D animation by using element of multimedia.

ii. To develop metaphor and board games approach in mathematic subjects by using 2D animation.

iii. To evaluate the effectiveness of selected approach compared to the current learning technique.

1.3 Project Scope

This courseware is and educational module. Therefore, the main scope is Tahap 1 student which is Standard 1, 2 and 3.This module will be design and develop based on Tahap 1 level of study. Second scope of user is teachers and parents. This is to help them in teaching and learning process using 2D animation. Meanwhile, the third scope is Mathematics subject.

In order to evaluate this project, the methodology based on Waterfall Model Diagram. This methodology is consisting of 6 stages which are Requirements, Analysis, Design, Coding, Testing and Acceptance. This methodology is suitable for Bijak Kira module because learning module need good planning progress. This model is designed such that until the preceding phase is complete, you cannot move on to the next phase of development.

1.4 Project Significance

This project require to do a research study about the attractive ways to teach mathematics for standard 1, 2 and 3 students. Nowadays, there are many attractive module of mathemathics in the market with different technique and approach.

Therefore, the reseacrh value of this project is teaching mathematics using metaphor and board games approach by using 2D animation technique. The questions for the quiz will be present in the form of board games such as a wheel game and drag and drop game so that can give exciting mood to solve the quiz.

Besides, this interactive courseware is suitable with the new era of technology. The kids nowadays have been expose to the advance technology of Information Technology (IT). Therefore, this module is suitable for them.

1.5 Summary

The project will be a good teaching module in CD for primary students standard 1, 2 and 3 to learn about mathematics in attractive ways because it is using 2D animation. The approach of metaphor and board games can gives better understanding to the students and easily keep in the memory. The students also more interested to solve the tutorial questions in order to play the games. The project will have market value and suitable for publication.

The courseware is based on multimedia element as an education process. This is because in this era students are expecting more attractive learning. Technique and approach of study must be change to make student happier to get the knowledge with some fun. Meanwhile, parents want to see their children to relate what they have learned in school into daily life activity.

As a conclusion, this learning courseware is developing for learning and teaching in interactive multimedia learning applications.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

This chapter is one of the most important chapters for a project that will be developed. A literature review discusses published information in particular subject area and sometimes information in a particular subject within a certain time period. In the literature review, animator needs to list the detail of step and equipment that will be used in order to make the project successful.

Research can produce fact and idea and can help animator to know what are the relevant matters are being considered in studying the problem. Sometime research itself does not produce solution. In this chapter domain and existing system is the main section of the literature review chapter. This include of searching, collecting and analysing the issue that relevant in this project.

2.1 Area of Study (2D Animation)

Courseware or e-learning is a new technology which employs electronic media as part of delivery system and encompasses diverse learning strategies and technologies including computer based learning, web based learning, virtual classrooms, and digital collaborations is fast becoming popular all over the world because of its distinctive features (Bashar and Khan, 2007).

Education is main objective that I want to convey for student on my courseware. I try to create something new and interesting that students can really understand what they must do on my courseware and they can use the courseware correctly when they connect with their course subject at school. Research of my project is determined that students nowadays are bored and tired of traditional methods of learning like reading the book and so on. Nowadays, there are many attractive module of mathemathics in the market however they are only using static picturea with click and drag exercises approach. Therefore, the reseacrh value of this project is teaching mathematics using metaphor and board games approach by using 2D animation technique. The questions for the quiz will be present in the form of board games such as a wheel game and drag and drop game to give exciting mood to the students.

In developing this courseware, several domains have been identifying which is multimedia courseware, curricular syllabus and memory technique or thinking skills. Courseware is an educational software entity that contains different knowledge components, yet it resembles the objectives of a traditional course. Courseware also can encompass any knowledge area, but information technology subjects are most common. Courseware is frequently used for delivering education about the personal computer.

Besides that, all the design and the graphic on the courseware are colourful and can attract user especially teens are use this courseware. Courseware of my project are using the combination warm and cold colour because I want to create a courseware that have a professional design and can make user like children can more attract to use this courseware and try to learn tutorial from the courseware.

For this courseware, I choose to develop the quiz in the form of board games such as a wheel game and drag and drop game. Else for student to make this courseware are useful for their education and knowledge about mathematics. When this techniques are success develop on this courseware, users can give feedback and response to improve this product become better soon.

2.1.1 Animation

Simulation of movement is created by displaying a series of pictures or frames. Cartoon on television is one example of animation. Animation on computers is one of the chief ingredients of multimedia presentations. There are many software applications that enable you to create animations that you can display on a computer monitor.

Note the difference between animation and video. Whereas video takes continuous motion and breaks it up into discrete frames, animation starts with independent pictures and puts them together to form the illusion of continuous motion.

Animation also is a visual technique that provides the illusion of motion by displaying a collection of images in rapid sequence. Each image contains a small change, for example a leg moves slightly, or the wheel of a car turns.