

BORANG PENGESAHAN STATUS TESIS

JUDUL: E-LEARNING COURSEWARE FOR DOWN SYNDROME

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E- LEARNING COURSEWARE FOR DOWN SYNDROME

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**This report is submitted in partial fulfillment of the requirement for the
Bachelor of Computer Science (Interactive Media)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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2008**

DECLARATION

I hereby declare that this project report entitled
E- LEARNING COURSEWARE FOR DOWN SYNDROME

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

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DEDICATION

This thesis is dedicated to my parents, who taught me that nothing is impossible as long as I stay positive all the time.

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ABSTRACT

An e-learning courseware is being developed to educate the Down Syndrome children about daily routine on good behaviour. Nowadays, courseware has been applied mostly to students at school. This application can be played by using flash player on computer. It is a courseware which is educate about daily routine through some learning approach such as giving a situation or example. This courseware is focus more on educating about good behaviour in daily routine. The learning approach that applied on this courseware is repetition and emphasis by describing a story or situation to make and attract the audience keeping watching it. It use Macromedia Flash 8 to develop this project. This courseware has two modules, which is Story Time and Activity. In Story Time, it has four 2D animation story that user can choose. There are Outdoor Activity, Road Crossing, Before Go to School and House Cleaning. In Activity module, it have two activities that user can choose. There is Let's Clean the House and Choose the Cloth. This courseware also for teachers and parents to teach the Down Syndrome children about daily routine easier. From this application, the user can understand more about good behaviour through daily routine which is needed to managing themselves.

ABSTRAK

"Courseware" pembelajaran ini dibangunkan adalah untuk memberi pendidikan kepada kanak-kanak Down Syndrome mengenai rutin harian dalam menjaga kelakuan yang baik. Pada masa kini, kaedah pengajaran melalui "courseware" telah banyak digunakan oleh pelajar di sekolah-sekolah. Produk ini boleh dimainkan dengan menggunakan 'flash player' pada komputer. Ia adalah satu "courseware" yang mendidik tentang rutin harian melalui beberapa pendekatan pembelajaran seperti memberi satu contoh situasi atau keadaan. "Courseware" ini lebih tertumpu pada pendidikan mengenai menjaga kelakuan di dalam setiap rutin harian. Pendekatan pembelajaran yang digunakan pada produk ini adalah dengan memberi penekanan dan pengulangan di dalam menjelaskan dan menggambarkan sebuah cerita atau keadaan untuk menarik minat penonton terhadap produk ini. Selain daripada itu, 'Macromedia Flash 8' digunakan untuk membangunkan projek ini. Projek ini mempunyai dua modul iaitu 'Story Time' dan 'Activity'. Di dalam modul 'Story Time', pengguna boleh memilih empat cerita animasi. Ia adalah 'Outdoor Activity', 'Road Crossing', 'Before Go to School' dan 'House Cleaning'. Di dalam modul 'Activity' pula, pengguna boleh memilih dua aktiviti yang disediakan sama ada 'Let's Clean the House' atau 'Choose the Cloth'. Aplikasi ini juga boleh digunakan oleh guru dan ibubapa untuk mengajar kanak-kanak Down Syndrome mengenai rutin harian. Melalui penghasilan produk ini, pengguna akan lebih memahami tentang menjaga kelakuan melalui rutin harian yang dilakukan untuk menguruskan diri mereka sendiri.

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CHAPTER I

INTRODUCTION

1.1 Project Background

The proposed title will be an episode of 2D animation for viewers especially children where this animation is developed based on good behavior. In this animation, the daily routine will be the key point to develop the animation. It's better to good behavior values to Down Syndrome children when they are still small where in this age they able to learn more things. Since everybody likes to watch animation, so this 2D animation can be a good application to deliver message like a good behavior to the users.

This 2D animation will take a visual and meaning-based approach that is much easier for user to learn good behavior. The character that uses to do this animation is human character. The users able see how the human character behaves and the

consequences of their behaviors. By watching this 2D animation, users able to recognize what are the good behavior values. Beside that, during these animation elements like animation of the characters and adding sound to the animation will be put in studies in details.

This animation is a sort of courseware based program. Target users for this courseware are mainly Down Syndrome children and even teachers and parents also can use this courseware to teach the children. The elements such as graphics, characters and images that will be design in the animation are easily adapted by kids and children.

1.2 Problem Statement

- Lack of e-learning courseware to teach about behavior.

There is lack of e-learning courseware to teach the good behavior. In Malaysia market, there is only the e-learning courseware to teach the subject like Bahasa Malaysia, Bahasa Inggeris, Chinese and others. This project is different than the existed e-learning cd because it teaches the Down syndrome children to manage their life.

- Ineffective because some books are not attractive enough.

Using graphical book or teaching orally may be ineffective because some books are not attractive enough. Using book and teaching orally also will need personal attention from the guidance to make the teaching effective. Using a Media Interactive Information System learning method can save the guardian time and energy.

- Less interactivity

There is less interactivity from the learning tools with the children if using the book. This e-learning program involves interactivity between the user and the program. Interactivity between the program and the user will make the learning process more interesting and more flexible because the user can choose on the type of behavior that they want or play the game.

- Difficult to evaluate the children understanding

By using manual method the guardian of the children cannot evaluate the understanding of their children on good behavior because it does not show any grading or evaluation of their understanding. Besides show the 2d animation on good behavior that they must to follow and do everyday in their life, they can play a given simple game.

1.2 Objective

Objectives for this e-learning are mostly same like others e-learning because it is in the same category. There are a few objectives to achieve with develop this project:

- To build an e-learning courseware on good behaviour for Down syndrome children. Main objective of this project is to build a Multimedia Interactive Information System or courseware on good behaviour to educate and expose the Down syndrome children to manage their life.

- To apply cognitive learning through repetition and emphasis in the 2D animation story. The e-learning courseware will show about what people do daily. Using repetition and emphasis in the animation story, it will help the user to memorize easily.
- To produce a CD for Down Syndrome children, their teachers and parents teach about good behaviour in daily routine. The CD are easy to use and keep by the Down Syndrome children.

1.3 Scope

This e-learning courseware is an educational based project and will be developed on 2D animation using Flash 8. This e-learning courseware does not have the specific time because it is a courseware. The main target users for this e-learning courseware are Down syndrome children. For parents, it is the best way to teach the children about care themselves. For teachers, it can help the learning process about good behavior at schools.

From the multimedia elements that will be used in this project, it synchronize with the Down syndrome children interest. Hopefully this e-learning can attract the Down syndrome children to used and explore this e-learning courseware to manage and care about themselves.

This project will apply the character movement to attract the main user, Down syndrome children to use this e-learning courseware. Beside that, the brightness color will be used in this e-learning courseware. It must have an element that will attract them to focus on their learning.

It also will have the simple activity to let the children enjoy the e-learning courseware. After they had their learning, they can play the simple activity that applied in this e-learning courseware synchronize with their learning in 2D animation. So, with applied the activities in the e-learning courseware, they can enjoy their learning process.

The product must be played using flash player. The user required to have a computer, flash player and speaker in fully view to play the product. This product is a standalone product and applicable to any platform.

This courseware is starting with the montage and the main menu will appeared after the montage end. The user can choose either the Story Time or Activities. In the Story Time, it have four story of 2D animation that user can choose. The story are Road Crossing, Before Go to School, Outside Activity and House Cleaning. In the 2D animation, it will apply the narration as the guideline for the user. There have two type of activities, that is Clean the House and Choose the Cloth.

1.4 Project Significance

From this project, users can learn about interactive skill and be able to learn the lesson in more effective and interesting way. It can educate the children about good behaviour in fun and flexible resource. The Down syndrome children will be able to use this e-learning courseware easily because it less with text, big size of text and have the animations that visualize the true situation of the lesson about the behaviour. It also presents the suitable font, colours and graphic for the target users. This project is important in helping the Down syndrome children to improve their learning skills especially in good behavior because they must be independent person.

This project also helps the teachers in their teaching techniques. The Down syndrome teacher can use this project to attract their student more concentrate to learn. It can help the teacher easier to teach.

This project also can apply at home by Down syndrome parents. Parents are the important person to teach their children about the behavior. With using this e-learning courseware, it can help the parents to teach their child in easy way.

1.5 Conclusion

This e-learning courseware is mainly focused for children that had the Down syndrome problem. Beside that, it can be used for their parents and school teachers. This project is including simple activities, sound, and animation. This courseware can let the users learn about daily routine in their life and also might develop the independent skills. It is good to implant enthusiasm in them self.

The next chapter will discuss about Literature Review and Project Methodology. This chapter will have the reviews about the Down syndrome children. It also will have the project requirements like software requirement and hardware requirement. The project methodology also will state in the next chapter to describe the activities in every stage.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

In this chapter, it will have the literature review and project methodology that more concentrate in researches and learning techniques applied for developing multimedia application in built this project.

This chapter will discussed about fact and finding which include the symptom of Down syndrome, what causes of Down, syndrome, characteristic of Down syndrome, type of Down syndrome, indication of Down syndrome, and what is the Down syndrome exactly. It also will explain about edutainment and courseware.

Topic of project methodology will discuss about the activity that want to do in every stage. In the project requirement topic, it will discuss about software, hardware and other requirement used in this project. Project schedule and milestone will review

the action plan prior the end of the project. The Gantt chart will be used to show the important date and tasks during develop this project.

2.2 Domain

This courseware is a sort of animation, computer graphic and visualization application. Currently there are many applications in the market with the same concepts including local and foreign products.

2.2.1 Down syndrome facts

Down syndrome is the most prevalent chromosomal disorder due to the presence of an extra number 21 chromosome. It occurs once in every 660 births and is seen in all ethnic groups. The chance of a woman having a child with DS increases with her age at the time of conception. Down syndrome is the leading cause of intellectual disability in the world. It is not related to race, nationality, religion or socio-economic status. Down syndrome is a chromosomal disorder which usually causes delay in physical, intellectual and language development. But doctors aren't sure why this chromosome problem happens to some babies. It is nothing the mom or dad did before the child was born. Anyone can have a baby with Down syndrome. But the older the mother, the greater with the risk. There are three forms of Down Syndrome- trisomy 21, translocation and mosaicism.

i) **Trisomy 21.**

This is the most common form of DS. 95% of children with DS have an extra whole chromosome in every cell of their body. It can occur as a result of faulty distribution of chromosomes in either the mother's egg or the father's sperm or as a result of faulty distribution of chromosomes in the first division of the fertilized egg.

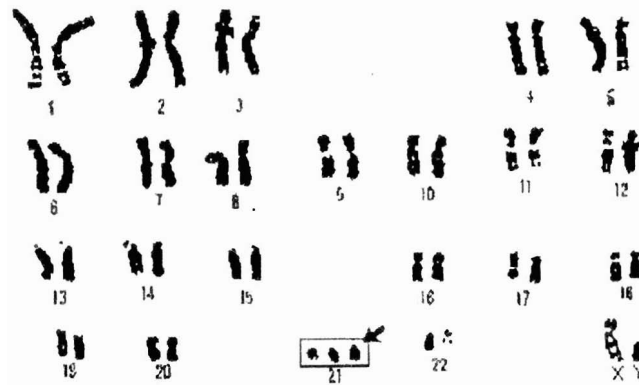


Figure 2.1: Karyotype of a child with Down syndrome or Trisomy 21

Instead of the typical 46 chromosomes, children with Down syndrome usually have 47 chromosomes.

ii) **Translocation**

These comprise of about 4% of cases. DS is due to the presence of an extra part, rather than the whole, of a chromosome. This occurs when the small top portions of chromosome 21 and another chromosome break off and the two remaining portions stick to one another at their exposed ends. Only chromosomes 13, 14, 15 or 22, or another chromosome 21 (14 is the most common) are involved.