

BORANG PENGESAHAN STATUS TESIS*

JUDUL: EDUCATIONAL WEBSITE FOR PRESCHOOLER : USABILITY

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EDUCATIONAL WEBSITE FOR PRESCHOOLER : USABILITY

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**This report is submitted in partial fulfillment of the requirements for the
Bachelor of Computer Science (Software Development)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2008**

DECLARATION

I hereby declare that this project report entitled
EDUCATIONAL WEBSITE FOR PRESCHOOLER : USABILITY

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

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DEDICATION

To my beloved parents, supervisor and friends.

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I would like to take this opportunity to thank to my PSM supervisor, Puan Norazlin bt. Mohammed for the guidance, helps and spending her time in helping me to finish my PSM I and PSM II for my project, Educational Website For Preschooler : Usability.

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ABSTRACT

The project named Educational Website For Preschooler : Usability allows users which are, pre-school children learn concept which include the modules for puzzle, song, storybook and other activity. Meanwhile parents and teachers can use this educational website as guidance and additional materials to teach the pre-school children. Besides helping the preschool children in their learning, this educational website can help the preschool teachers to assist them and make their teaching more interesting. Children with high logical intelligence had the greatest success, while children with high linguistic intelligence had the greatest satisfaction. Age, gender, previous internet experience, siblings, computer configurations and poor ergonomics affected usability. This website can be enhanced further by adding function like games, storybook and other activity. This educational website includes the multimedia elements such as texts, graphics, animation and audio to make the learning more effective and attractive. The pre-school children will enjoy learning with the help of these multimedia elements. For the project methodology, instructional design has been chosen as the methodology. The most common model used for creating instructional materials is the ADDIE Model. It has five phases that is Analysis, Design, Development, Implementation and Evaluation. The software use to develop this multimedia courseware includes Macromedia Flash CS3, Adobe Photoshop CS3, Sony Sound Forge 9.0 and Microsoft Visio Professional 2003.

ABSTRAK

Projek Educational Website For Preschooler : Usability membenarkan pengguna-pengguna seperti kanak-kanak prasekolah untuk belajar konsep yang termasuk modul-modul seperti teka-teki, lagu, buku cerita dan lain-lain lagi. Sementara itu, ibu bapa dan guru-guru boleh menggunakan laman web pendidikan ini sebagai panduan dan bahan tambahan untuk mengajar kanak-kanak di tahap prasekolah iaitu berumur dalam lingkungan tiga hingga enam tahun. Kanak-kanak prasekolah boleh mempelajari mengenai konsep kebudayaan Malaysia untuk prasekolah di dalam laman web ini contohnya seperti lagu Anak Itik Tok Wi yang terkenal sewaktu zaman kanak-kanak. Selain bantuan untuk kanak-kanak prasekolah dalam sesi pembelajaran mereka, laman web pendidikan ini boleh membantu guru-guru prasekolah untuk mendidik kanak-kanak prasekolah dan membuat cara pendidikan mereka lebih menarik. Laman web ini boleh ditingkatkan dengan menambah lagi fungsi seperti permainan, buku cerita dan aktiviti lain. Laman web pendidikan ini mempunyai unsur-unsur multimedia seperti teks, grafik, animasi dan audio untuk membuat pembelajaran lebih berkesan dan menarik. Kanak-kanak prasekolah akan menikmati pembelajaran dengan bantuan unsur-unsur pelbagai elemen multimedia ini. Model pembangunan yang digunakan untuk membangunkan laman web ini ialah model ADDIE. Ia mempunyai lima fasa iaitu *Analysis, Design, Development, Implementation* dan *Evaluation*. Perisian yang diguna untuk membangunkan laman web ini termasuk Macromedia Flash CS3, Adobe Photoshop CS3, Sony Sound Forge 9.0 dan Microsoft Visio Professional 2003.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Preschool is generally considered appropriate for children at the age of three to six years that is between the toddler and school stages. During this stage of development, children learn and assimilate information rapidly, and express interest and fascination in each new discovery. These qualities make them prime candidates for education, although most of them are not ready for structured elementary schooling. Parents are a child's best resource for education before school. Research shows that the more time and effort parents, caregivers, or teachers at preschools give to a child, the better a preschool child will be able to adjust to their environment.

Between three and six years old, the average vocabulary span is between 1500 and 2000 words. One word concept that becomes very confusing to the preschool age children is literal statements, which are those phrases that explain something figuratively but not realistically. Creative thinking also comes into use a great deal at this age. Preschoolers begin to recognize numbers better and understand the concept of numbers and their usage. Learning, the ability to recite numbers in their proper order, is a very popular part of the curriculum for this age.

They like to do more things on their own. They love to help with anything they can and have responsibility. At this age their coordination has improved a lot and their body proportions have changed. This project is about to develop a new

website using the method of visualize information about preschool education that focus on usability.

1.2 Problem Statements.

Preschoolers are still learning right from wrong and may react violently in situations that invoke a strong emotional response from them. This does not make them bad, it makes them preschoolers. They need to learn how to handle strong emotions without becoming violent. Retrieved information needs to be used at the right time, place and situation. Many children need an attractive education system and entertaining style of education.

Speech and language development in children is a dynamic process. Speech refers to the mechanics of oral communication, language encompasses the understanding, processing, and production of communication. Speech problems may include stuttering or dissiliency, articulation disorders, or unusual voice quality. Several types of speech and language delay and disorders have been described, although the terms used to describe them vary expressive language delay may exist without receptive language delay, but they often co-occur in children. Some children also have disordered language.

These language problems can involve difficulty with grammar, words or vocabulary, the rules and system for speech sound production, units of word meaning and the use of language particularly in social contexts. Language and speech problems can exist either together or separately.

1.3 Objective

The objectives are:

- i. To develop an educational website for preschooler.

- Develop an educational website for preschooler to make them more close to the current environment.
 - To make preschooler prime candidates for education.
- ii. To develop an educational website based on Malaysian culture.
- Give preschooler in Malaysia an opportunity to know the Malaysian's song and story that suitable for preschooler ages.
- iii. To develop an educational website that complies to the usability of preschooler.
- Help preschooler to use this website by themselves with the aid of simple interface and function that are familiar and can be recognized easily by small kids.

1.4 Scope

This project is divided into two main parts. First part is a user scope, the group of user to use this e-learning is children at the age of three to six years, kindergarten instructor or school instructor and parents. Many children need help from their parents or their instructor to run this website for them to use it. Children are the main user of this website, kindergarten instructor or school instructor and parents are act as an instructor to use this educational website. The second part is on website scope, this website have an interesting and attractive element. The user interface has a colourful design to make the preschooler become interesting to use this website.

Other than that these website also have an easy and attractive step by step to be handled by preschooler. This is website also have information and educational materials that are suitable with the preschooler ages (focused on showing the information and educational materials to preschooler like a puzzle, song, alphabet, storybook and other basic concepts by using available materials).

1.5 Project Significance

The importance of this project is to develop an attractive and simple user-interface for preschooler to learn. From this project, preschooler can easily understand what they learn from this educational website. Other than that, this project will also show how the information visualization and educational materials is used to display information and learning materials. By developing this website, hopefully it will help to commercialize it. With the numbers of preschool increased, this website can be use in all preschool, kindergarten and home that have an internet connection.

1.6 Conclusion

This website can help preschooler to get extra learning materials other than physical materials in schools or kindergarten. Other than that preschooler can use their free time by playing educational games from this website. Hopefully this website can be use by many preschoolers because it will give benefit to all preschooler. Literature review and project methodology phase will discuss in the next chapter to describe the process and how the project would be done.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

A literature review is a body of text that aims to review the critical points of current knowledge on a particular topic. Most often associated with science-oriented literature, such as a thesis, the literature review usually precedes a research proposal, methodology and results section. Its ultimate goal is to bring the reader up to date with current literature on a topic and forms the basis for another goal, such as the justification for future research in the area. In this chapter, all the procedure of web-based system will be explained. This includes the domain that related to this web-based system, the current system that exists and the result after some research and comparison. Project methodology which will describe the approach that has been selected to use in this project, project requirement including software and hardware that are needed to develop this web-based system.

2.2 Domain

Educational Website for Preschooler is a website that used an animation to deliver information and learning to the preschooler and the domain is Human Computer Interaction (HCI). HCI is the study of interaction between preschooler and computers. A basic goal of HCI is to improve the interactions between preschooler

and computers by making computers more usable and receptive to the preschooler needs.

Website usability is the most important part in Human Computer Interaction (HCI). Children with high logical intelligence had the greatest success, while children with high linguistic intelligence had the greatest satisfaction. Age, gender, previous internet experience, siblings, computer configurations and poor ergonomics affected usability. Examples of design features (and their engaged intelligence) that positively affected usability were sound effects (musical), characters that interacted with the children (interpersonal), audio instructions (linguistic), large clickable areas (kinesthetic), limited choices (logical), positive reinforcement (intrapersonal) and navigation metaphors (spatial). Results suggest that simpler navigation schemes, interface designs that engage spatial rather than linguistic intelligence, and features that positively engage a variety of intelligence types will make web sites easier for children to use.

Children were categorized as adventurous or ambivalent based on their interest in the website. Analysis of their comments and usage patterns revealed which aspects of web design they liked and disliked and what caused usability problems. The biggest navigation obstacles were inability to read, poor mouse control and problems with the interface design. Children did not use search, map, and index or help tools if they were available. Children did not scroll or use the back or forward arrows in the web browser.

E-learning also will be use as a part of this project. E-Learning is a general term used to refer to computer enhanced learning. E-learning lessons are generally designed to guide preschooler through information or to help preschooler perform in specific tasks. Information based e-Learning content communicates information to the user.

2.3 Existing System

The existing system is a one of the research and references that must to make a case study in finding what the advantages and disadvantages which are related to this project. The existing interactive website for preschooler is Playhouse Disney Preschool Time Online, this interactive website offers a safe and free environment where children can enjoy a slate of regularly updated, fun and engaging activities that encourage learning through play.

- i) Example 1: According to Playhouse Disney Preschool Time Online (<http://www.apple.com/games/articles/2007/10/playhousedisney/>)



Figure 2.1: Playhouse Disney Interface

Each learning adventure is centered around a theme, such as friendship or using imagination, and it features a variety of games and activities that reinforce the idea in a fun way. For example, in the “Imagine That!” theme, children identify basic shapes while hunting for rocks with the Koala brothers and play pretend in Kip and Wayne’s Higglytown neighborhood. Seven Playhouse Disney shows are represented during the main portion of the learning adventure.

The learning adventures reinforce skills in eight key areas, which are reading readiness, math readiness, thinking skills, social skills, daily living skills,

imagination and self-expression, motor skills, and computer skills. They also grow with children, becoming easier or more difficult depending on their ability to complete the previous set of games and activities. The games will educate the preschooler and at the same time entertain them. The weakness of this website is required Mac operating system to play a game.

Playhouse Disney Preschool Time Online hardware and software :

- Mac OS X version 10.3.9
- 733MHz Intel or PowerPC G4 processor
- 512MB of RAM
- 1GB hard disk space
- DVD Drive
- Safari Web browser
- Broadband connection with 384Kbps or higher

ii) Example 2: According to KERB E-Learning (<http://www.kerb.co.uk/>)



Figure 2.2: KERB E-Learning Interface

KERB E-Learning develops multiple cognitive skills by recognising shapes, sizes, prices and counting with coins in a fun market stall environment. The application uses animated characters and actors voices from the Tweenies TV show. The users are asked to look after Bellas stall. While she is a way different Tweenies

come up and ask a variety of questions. If the user asks for the most expensive toy the user has to select the most expensive on the stall by looking at the different price.

For items such as the 'round toy', the user would select the beach ball. The Tweenies would also ask which toy they could buy at a certain price so the user would have to click on the toy with the correct price tag. Users would also have control of the till where they have to then match the correct prices. Games like these are great for parents to sit down with their little ones and talk them through what's happening on screen. The Tweenies make the children excited whilst all the time their learning without knowing it.

The developer worked with educational pioneers such as the Science Museum, Kings College University of London's Institute of Psychology and the BBC Digital Curriculum team to produce cutting edge educational software. They are experienced in building e-learning content in environments and happy to use Flash skills to make learning a little less boring from it's pre-school through to adult learning.

- iii) Example 3: According to The Toon Town Online Times
(<http://play.toontown.com/about.php>)

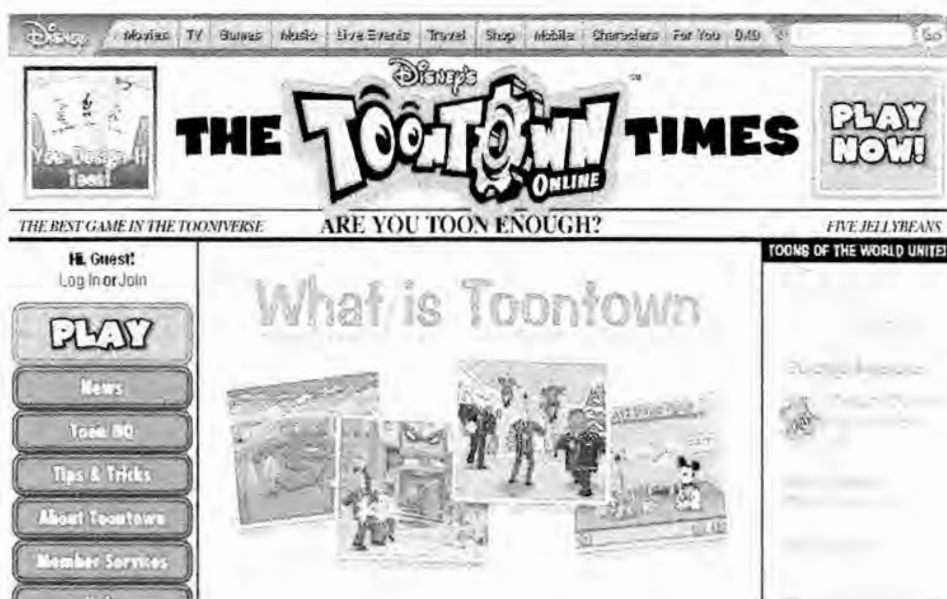


Figure 2.3: The Toon Town Online Times Interface

Disney's Toon Town Online, the first massively multiplayer online game designed specifically for kids and families. This website not provides many games to play for free and need user to register before they can play any educational games. Players create their own cartoon characters and enter Toontown to meet friends and make new friends, compete in games and battle the evil robot Cogs.

The design of Disney's Toon Town Online, Morgan Kaufmann Publishers, who specialize in children's media can make valuable contributions to production teams by applying social science research to the design of content, interfaces, and technology for young people. There is seven areas in which a researcher can contribute:

- Specifying the product concept and goals.
- Designing the product for the target user group.
- Obtaining funding to support product development and evaluation.
- Testing the product, before it is completed, with youngsters in the target user group, and revising it accordingly.
- Measuring outcomes by conducting beta tests, field trials, and pilot studies with the finished product.
- Publishing research outcomes and presenting them to potential customers, partners, and investors.
- Keeping producers and their teams up-to-date on current research, industry resources, and product design trends.

It concludes that a media researcher can contribute a great deal to interactive products, to assure that they are developmentally appropriate, tailored to individual needs and abilities, socially responsible, entertaining, engaging, and educationally effective.

The Toon Toon Online Times hardware and software :

- Microsoft Windows
- 98, ME, 2000, or XP or Vista
- Pentium III 500 MHz or faster CPU