

CD-BASED CHILDCARE SYSTEM (CDCS)

TIO SIOW TENG

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Abstract

This thesis details the development of CD-Based Childcare System (CDCS) for parents to take care of their child's health from Day. The CDCS provides parenting information in an interactive way using multimedia. Research has been undertaken on various CD-Based courseware and websites available in the market. CDCS consists of six general modules which are Contents module, Baby Record module, Quick Finder module, Games module, Settings module and Help module. The purpose of including Baby Record System is to help parents keep tracks their baby's development in a proper way. The development of this project uses the Multimedia Development Life Cycle (MDLC) and Macromedia Flash Professional 8.0 for its implementation.

Abstrak

Tesis ini mengenai perkembangan ‘CD-Based Childcare System (CDCS)’ untuk ibu bapa menjaga kesihatan anak dari Hari Pertama. CDCS menyampaikan maklumat keibubapaan dengan menggunakan cara interaktif. CD pembelajaran dan laman web telah dikaji untuk membuat perbandingan. CDCS terdiri daripada enam modul, iaitu Maklumat modul, Anak Rekod modul, Pencari Cepat modul, Permainan modul, Latar Kawalan modul dan Bantuan modul. Tujuan memasukkan Bayi Rekod Sistem adalah menolong ibu bapa menyimpan perkembangan anak mereka dengan cara betul. Perkembangan projek menggunakan ‘Multimedia Development Life Cycle (MDLC)’ sebagai prosedur dan ‘Macromedia Flash Professional 8.0’ diguna untuk menyelaksana projek.

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Websites: - <http://www.babycenter.com>,

- <http://www.mothercare.com> and

- <http://www.baby.com>

Book: - Congratulations, You're Mom & Dad

CD Courseware: - Parenting Solutions, Baby Matters

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List of Abbreviations

CDCS	CD-Based Childcare System
MPDC	Macromedia Project Development Cycle
DFD	Data Flow Diagram
HTML	Hypertext Mark-up Language
ASP	Active Server Pages
XML	Extensible Mark-up Language
PHP	Hypertext Preprocessor

Chapter One: Introduction

1.1 Introduction

A baby is an amazing gift for every parent in this world. Many parents will try to give the best to their child. They are always worried about what they do is not sufficient for their baby. When something happens to their child, they are always concerned on how to keep their child safe from any disaster. Thus, many new parents or parents-to-be feel that childcare is a heavy responsibility that they have never noticed before.

Nowadays, many parents are physically and mentally challenged with their career in their workplace. Therefore, they do not have enough time to read childcare book or to record their baby's development milestones. In addition, some medical terminologies are difficult to understand by laymen.

A CD-Based Childcare System (CDCS) was proposed to provide the parents with a proper channel to learn parenting solutions. It makes baby development record keeping easy, convenient and readily accessible. Besides that, all information is provided in laymen terms in this system which parents may have to deal with as their baby grows. It is an interactive, multimedia tutoring system. Parents are able to interact with the system and make their preferred options when learning and performing activities. Games were also provided for parents to release their pressure.

The main features of CDCS is recording the baby development milestones, such as birth history, vaccinations schedule, babies well-being's record, medical record and growth chart. The

vaccinations schedule will inform the parents when their children needs injection and thus, it can be used to keep track of the baby injection date. Besides that, parents can record their baby medical record, for example sickness name, doctor in charge, visitation date, prescription given, correct dosage, allergies and others. These records are important for future reviews if same situations happen to their baby. On the other hand, growth chart is use to analyse the baby BMI, that is to identify whether their baby is underweight, overweight or in normal range.

1.2 Problem Statement

Now, most parents are working because of the high cost of living. Everyday, they need to face a lot of pressure when working. Upon returning home, they are also faced with another form of pressure that is they will need to pay close attention to their young baby. Many parents today, find that they lack the time to read a childcare book to their child or even to surf the Internet. Thus, an interesting CDCS will gain attention and interest for the parents to learn childcare solutions. It provides parents with the environment without any pressure to learn parenting advice. Apart from that, it also aids as an entertainment to the parents while they are learning.

The Internet has many good sites about childcare for parents to surf. However, parents that need to work and to take care of their baby, realized that they do not have that sort of 'luxury' of having the extra time to find out answer from these sites. When the baby starts to vomit or in all sorts of antics, it is just too time consuming to surf the Internet. Furthermore, they may also face with situation like, server down or long downloading time for materials required. Besides, if parents used search engine to find information, a hundred thousand of websites may appear. Also, parents may be concern on how to choose a reputable site.

In addition, parents also face difficulty to record and to maintain their baby development milestones manually. This is because parents may lose the record that written on paper. Besides that, all information that were filled manually by the parents using own words are usually not precise.

Finally, people are forgetful and tend to forget the web address if they do not keep it. A reputable childcare web site is very important for caring their infant. What if the parent forgets the web address? It is very difficult to find another reputable web site because Internet consists of plenty of childcare web site. Therefore, CDCS is easy and helps to resolve this problem.

1.3 Project Objectives

The objectives of CDCS are:

- a) To develop a CDCS suitable for local condition.
- b) To assist parents in managing and maintaining baby development record in a proper way.
- c) To provide interesting multimedia elements that can improves information retention.
- d) To provide scientific vocabulary definitions for parents in laymen terms in scientific area.
- e) To provide interesting games and quizzes for parents.
- f) To provide an alternative childcare guideline learning excluding textbook or web site.

1.4 Methodology

CDCS is a multimedia project. Therefore, Multimedia Project Development Cycle (MPDC) is applied as a methodology for CDCS. This methodology consist of eight steps, which include Define the project, Locate resources, Organize resources, Design the project, Develop the project,

Present the project, Revise the project, and Publish the project. It allow us deliver on time and achieve satisfactory results.

Step 1: Define the project

This initial step involves determining the boundaries of the project as well as identifying how the project relates to the overall curriculum. CD-Based Childcare System is selected as a topic in this project and the scope for this project is parents or pre-parents.

Step 2: Locate resources

In this phase, traditional and unconventional sources of information about topic are identified. These may include resource CDs, Web sites, encyclopaedias, magazines, journals, video tapes, audio tapes, and books. In this project, resources are collected from several web sites which include BabyCenter.com, Baby.Com and MotherCare.com. Questionnaires are distributed to identifying the parents' requirements that will be needed in CDCS.

Step 3: Organize resources

Once resources have been collected, time are spend to select the notes, data, computer files, and Web links that will be included in the project. Six topics that will be included in the CDCS contents are Pregnancy, My Baby, Work and Play, Relative with Baby, Some Issues and Mom's Body.

Step 4: Design the project

At this point, storyboard or flowcharts of project are produced. Outline, diagram, or software program are created for Inspiration to organize their ideas. In CDCS, navigation maps are used to outline the connection or links between the various areas of project scenes and organized the content and message consistency. Data Flow Diagram (DFD) focuses on the processes or activities that are performed. On the other hand, storyboard is used to design the interface of CDCS.

Step 5: Develop the project

In this step, project is design using digital media tools such as video, sound, graphics, text, and animation. In this project, the software will be used are Macromedia Flash 8.0, Macromedia Fireworks 8.0, Swish MX and Adobe Photoshop 8.0.

Step 6: Present the project

This phase is to present CDCS to audiences, which are examiner and supervisor.

Step 7: Revise the project

Based on the feedback received from examiner and supervisor, project is reviewed and changes are made to improve it.

Step 8: Publish the project

In this final step, project will be saved to a CD to be published.

1.5 Scope

The target users for this project are parents and pre-parents that will greet their newborn baby. This CD will act as a learning tool for the parents to discover about childcare solution. In addition, the CDCS can be used to store and maintain baby development milestone in a proper and efficient way. It also gives definition for scientific vocabulary that helps parents which do not have expert knowledge in medical field.

1.6 Significance of Project

The CDCS can provide childcare knowledge to the parents and at the same time, to assist parents to manage their baby records in an efficient and effective way. Also, a better understanding of childcare information can be improved to the parents through the quizzes that had been designed and created in the courseware. Parents can view, add, update and delete the baby birth history, vaccinations record, medical history and growth chart in the system. Besides that, it also helps parents to track the schedules of the baby check-up with the doctor by referring to the previous print records.

1.7 Project Schedule

The project will start from 24 April 2005 and is estimated to be completed on 24 April 2006. The duration of this project is about one year to complete. The project will be divided into different steps so that each task can be carried out efficiently. The details of the project schedule can be referred to the Gantt chart in **Appendix A**.

1.8 Expected Outcome

When the CDCS is fully develop, the childcare resources can be easily understood by parents. Besides that, they can navigate the courseware quickly and easily with the simple navigation design of the system. In addition, the main task of CDCS is to provide an appropriate method for parents to store their baby information that might be important in their baby growing process.

1.9 Chapter Flow

This project report consists of five chapters. They are Introduction, Background, Requirement Analysis and Design, Implementation and testing along with Conclusion and Further Work.

Chapter One: Introduction

This chapter will provide an overview of the project with more details. In this chapter, methodology is stated and described. The detail structure for the project should be given where each chapter fits within the overall and what each contributes.

Chapter Two: Background

This chapter will be concerning with presenting the background of the research area. Context of the problem also establish in this chapter. This chapter consists of a survey and review of literature. The source for the background is published material, in general, journal and conference papers, theses, research monographs, text books, web sites and product information. Besides that, existing system will be reviewed and analysed.

Chapter Three: Analysis and Design

This chapter will be concerning with the establishing of the detailed requirements specification for the work. The requirements depend on the type of project being considered. These requirements could be obtained from: Interviews, market analysis, customer (or the supervisor), Literature sources and questionnaire. The chapter should point out the ways in which the requirements have been obtained. Once obtained, the requirements should be expressed, prioritized and detailed in an appropriate form. The design will emphasised on the presentation of the design of the object developed and justifying how it should meet the identified requirements.

Chapter Four: Implementation and Testing

This chapter focuses on the realization of the design by an implementation. In this chapter, the behaviour of the implementation should be described and a justification of why it suits the design should be given. The actual implementation should be described but not in great detail. It is often appropriate to provide a walk-through of the system to describe its behaviour and relate it to the design. At each stage, evidence and justification should be produced. The environment of all testing should be fully specified. As a minimum requirement, Usability and Functional Testing include test plan should be produce here.

Chapter Five: Conclusion & Further Work

This chapter should present conclusion about the investigation and the outline of further work. This chapter should not be left until the end of the project period. In this chapter, valuable ideas should be collected throughout the project and will be added to the chapter

outline. This chapter re-outlines what has been done in the investigation, and can be shown in the dissertation. The further work section should be significant as an important part of a scientific investigation.