

**TEACHING BASIC INTRO TO BAHASA MELAYU FOR SPECIAL NEEDS
STUDENT (LEARNING DISABILITIES) USING CD-ROM**

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BORANG PENGESAHAN STATUS TESIS[^]

JUDUL: TEACHING BASIC INTRO TO BAHASA MELAYU FOR SPECIAL NEEDS STUDENT (LEARNING DISABILITIES) USING CD-ROM

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STUDENT (LEARNING DISABILITIES) USING CD-ROM**

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ABSTRACT

The project that will be developed is Teaching Basic Intro To *Bahasa Melayu* For Special Needs Student (Learning Disabilities) Using CD-ROM. This courseware will be used for educational purposes in special education schools especially for *Sekolah Kebangsaan Perempuan Bandar, Kluang, Johor*. At the moment, the teaching and learning process is using manual methods. There are no similar coursewares have been developed. From observation, teachers usually use books, blackboard and a piece of paper to do some exercises or activities in class. The main objective of this courseware is to develop a courseware CD-ROM that using *Bahasa Melayu* as a platform language. Besides that, this courseware can aid teachers in their teaching and help parents in guiding their special needs children doing some exercise at home. This courseware will be divided into four menus. The menus are *Mengenal Abjad, Belajar Suku Kata, Membaca Ayat and Aktiviti*. This project will be built using Macromedia Flash MX as the platform and other software which includes Adobe Photoshop CS, Sound Forge, Swish Max and etc. The development of this courseware will be based on ADDIE Model approach which will be integrated with Multimedia Development Life Cycle (MDLC). The phases in ADDIE are analysis, design, development, implementation and evaluation. The expected output of this project is a courseware which contains interesting and attractive design in order to attract users. It will be user friendly and contains animation element.

ABSTRAK

Projek yang akan dibangunkan ialah *courseware* bertajuk CD-ROM Asas Pengenalan Subjek Bahasa Melayu Kepada Pelajar Bermasalah Pembelajaran. Koswer ini akan digunakan untuk tujuan pendidikan bagi sekolah pendidikan khas khususnya kepada Sekolah Kebangsaan Perempuan Bandar, Kluang, Johor. Pada masa ini, proses pengajaran dan pembelajaran adalah secara kaedah manual. Tiada koswer seumpamanya yang telah dibangunkan sebelum ini. Hasil dari pemerhatian yang dilakukan, guru masih menggunakan buku, papan hitam dan juga kertas bagi tujuan latihan dan aktiviti di dalam kelas. Objektif utama bagi koswer ini adalah untuk membangunkan CD-ROM yang menggunakan Bahasa Melayu sebagai medium penyampaian. Di samping itu, koswer ini juga boleh dijadikan sebagai alat bantu mengajar kepada guru dan juga boleh membantu ibubapa dalam membimbing anak-anak mereka melakukan latihan tambahan di rumah. Koswer ini dibahagikan kepada empat menu utama iaitu Mengenal Abjad, Belajar Suku Kata, Membaca Ayat dan Aktiviti. Koswer ini menggunakan Macromedia Flash sebagai asas perisian dan juga beberapa perisian lain seperti Adobe Photoshop CS, Sound Forge, Swish Max dan lain-lain. Projek ini dibangunkan menggunakan pendekatan Model ADDIE yang diintegrasikan dengan Kitar Hayat Pembangunan Multimedia (MDLC) sebagai metodologi. Fasa-fasa dalam Model ADDIE adalah analisis, rekabentuk, pembangunan, pelaksanaan dan penilaian. Hasil akhir projek yang diharapkan adalah satu koswer yang mengandungi rekabentuk menarik bagi menarik perhatian pengguna. Produk ini juga adalah mesra pengguna dan juga mengandungi elemen animasi.

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CHAPTER I

INTRODUCTION

1.1 Project Background

The project that will be developed is titled Teaching Basic Intro To *Bahasa Melayu* For Special Needs Student (Learning Disabilities) Using CD-ROM. In Malaysia, there is no particular kind of school for learning disabilities. Only visual and hearing disabilities schools have been built. So, the learning disabilities students will be put in different classes from the other students in regular primary schools. This special students' age are between 6 to 14 years old. For this project, I decided to develop a courseware CD-ROM for *Sekolah Kebangsaan Perempuan Bandar* in Kluang, Johor. This school is a regular primary school and also has classes for learning disabilities students.

The categories of learning disabilities students that have been focus here are only for Down syndrome, Autism, Attention Deficit Hyperactivity Disorder (ADHD) and slow learner. Some of the criteria of Down syndrome kids are language delays and they had a very severe speech problem. Meanwhile the Autism is a disorder involving difficulty in social interaction, communication, and repetitive behavior. Although the cause of autism is unknown, it probably involves a genetic defect and environmental factors such as chemical and biological or some interaction of the two. The early symptoms may include grossly delayed language or motor development, a typical play

such as spinning, lining up, staring at, stereotyped (repeated unchanging) body movements, pronounced fears, crying fits, sleeplessness or noise sensitivity. Most of the autistic students always like dreaming and they just seem living in a fantasy world far from the other peoples. ADHD is defined as a pattern of behaviors in which a child shows, usually before the age of 7, developmentally inappropriate levels of inattention, impulsivity or hyperactivity. Some of the symptoms and criteria for a diagnosis of ADHD are they fails to give close attention to details or makes careless mistakes, has difficulty playing or engaging in leisure activities quietly and blurts out answers before questions have been completed.

To teach learning disabilities students is not as easy as normal students. So, this project will be developed with interactive multimedia elements. This courseware is very suitable to use by Special Education School (Learning Disabilities) in their learning and teaching process. This CD-ROM contains basic in learning an alphabets, words and something that relevant to *Bahasa Melayu* subject. Furthermore, this CD-ROM will also contain songs for students to sing. All disabilities students have in common are love for music such as singing and dancing. They laugh a lot as they sing. In classes, music can be uses as calming effect and also a sense of fun. The comfort factor of music is a great compliment to the other activities students work on. So, by using this courseware CD-ROM, they can learn about a few kids' songs that are suitable for their learning level.

In this project, a module of mind test questions also included to test the level of student's ability in understanding on what they have been tough from this CD-ROM. The questions only focus on a simplest parts which suitable to their level. The multimedia elements that will be provided in this courseware are text, graphic, audio, and also 2D animation. All of these elements will be presented in very creative and interesting way. This courseware offer learning, teaching and entertainment at the same time in only one CD.

This CD-ROM content will be divided into two sections. First section is learning and the second section is entertainment. In helping this kind of students to understand

better, this courseware will come with audio functionality. Instructions and explanations about learning will be presented with background voices. This CDs can be use as teaching materials that will give very good advantages especially in giving basic knowledge to learning disabilities students in learning *Bahasa Melayu*. This courseware can be a basic electronic teaching media to help teachers in this school. By using this CD-ROM, disabilities student is not only can learn a basic *Bahasa Melayu* but they also can be exposes to the basic of Information Technology world as well. Referring to Ken TK and Neo Mai (1999), computer can be the most powerful devices in education fields more than just be a communication devices.

1.2 Problem Statements

In the current scenario that we can see today, technology development is very important in many sectors. This situation also gives a big effect to our education system in primary, secondary or higher level. Our childrens in primary school now already know on how to use computer although they are still young.

Besides that, this scenario also happen in Special Education school. *Bahasa Melayu* as a communication language is planned according to the ability and achievement of each individual. So, this CDs is very relevant to be developed because it can help in their learning process. Teachers just play this CDs using their computer and the learning and teaching process became more interesting with entertainment element .

This kind of courseware is very difficult to find in our current market because usually developer only focus in developing a courseware for kindergarten and normal students. Sometimes, they do not relize about this special person. Furthermore, this courseware CD-ROM will use *Bahasa Melayu* as the platform language. Normally we only can get the courseware CD-ROM in English version. So, this CD-ROM is very good to be developed because we can help Special Education Schools especially for

learning disabilities to give their student the best education quality equivalent to our regular primary schools.

1.3 Objectives

The objectives for this project are :

- **To develop a courseware CD-ROM that using *Bahasa Melayu* as a platform language**
This product can help *Sekolah Kebangsaan Perempuan Bandar, Kluang* (Learning Disabilities) in their teaching and learning process.
- **To provide a better and more interesting way in learning and teaching**
This courseware will include with entertainment and interactive environment which apply animation, audio, text and graphic elements.
- **To provide alternative teaching material to teachers and also parents**
This product will serve as an additional teaching-aid for the teachers and can also be used by the parents to help their children in guiding them doing some exercise at home.

1.4 Scopes

The scope for this courseware CD-ROM development are as follow :

- User scope : for learning disabilities students at *Sekolah Kebangsaan Perempuan Bandar, Kluang, Johor* age between 6 to 14 years old, their teachers and parents .

- Courseware Content Scope : contains basic in learning an alphabets, words, syllable, singing and mind test questions for *Bahasa Melayu* subject.
- Platform and multimedia elements scope: use Macromedia Flash MX as a development platform and contains audio, text, graphic and simple 2D animation to enhance students comprehension.

1.5 Project Significance

This project will be developed for *Sekolah Kebangsaan Perempuan Bandar* in Kluang, Johor. There are a lot of benefits existed when this project completely finished. As mention in the objectives before, the main purpose of this project is to help special needs student understand better on what they have been taught because this CD-ROM will use *Bahasa Melayu* as a platform language.

This CD-ROM will be used as courseware in curriculum syllabus to teach special needs students (learning disabilities) the basic intro to *Bahasa Melayu*. So, now teachers already have this CD-ROM as their teaching assistant toolkits.

This courseware can be used by parents to help their children at home. So, students can improve their comprehension on what they have learned at school before. Students will pay full attention and interested because this CD-ROM will also provided with multimedia elements that contains education and entertainment at the same time.

This project might not be very costly because it just simply develops in CD-ROM and users just need to install Macromedia Flash Player on their computer to play the CDs.

1.6 Conclusion

This chapter is basically about the introduction of the project that is going to be developed. In this part, the objectives of the project have been stated, scopes have been identified and the purpose also must be highlighted properly. Every project must be having its own target user to make the objectives addressed and the final product is useful as well.

At the present time, a courseware that focuses on the learning disabilities student at *Sekolah Kebangsaan Perempuan Bandar, Kluang* has not yet been developed. Furthermore, the existing teaching methods stress on the manual technique and do not use any electronic media. This differs from the courseware that will be developed as it will have attractive design and a few animations.

So, the next step is making literature review which involved searching, collecting, analyzing and drawing conclusion in finding the significance of the project. Besides that, next chapter will also describe about methodology that will be used in developing this project.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

The research that have been done in development phase for this project are involved research on 2D Animation technology, research on development software, research on printed medium, research on current software, research on multimedia elements in education system and research on methodology in multimedia system development.

Methodologies that will be used in developing this project are Multimedia Development Life Cycle (MDLC) and ADDIE Model. Data collecting is through research on current software in e-Learning, references material in printed medium especially for special needs students and also books that are particular for developing multimedia project. Additional information also has been done through research on cases that are related in 2D Animation technology, internet references and interview with teachers in *Sekolah Kebangsaan Perempuan Bandar, Kluang, Johor*.

2.2 Fact and finding

2.2.1 Special Education Perspective in Malaysia

In Malaysia, there are two ministry that responsible in managing an education services to special needs children. There are Ministry of National Unity and Social Development and also Ministry of Education. Special education is an education that provides for childrens who have problems in learning including physical disability such as deaf and blind childrens. The objectives for special education establishment are :

- To provides facilities for learning disabilities children equivalent as an ordinary students.
- To ensure special needs children have a good and suitable education level that can help in their daily life and future.

2.2.2 Definition of Learning Disabilities

There are several definition uses to describes about learning disabilities. However, the definition used by a lot of states in United States is :

“Disorder in one or more psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and development aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, or mental retardation or emotional disturbance, or of environmental, cultural or economic disadvantage.” (U.S. Office of Education, Federal Register, 1977)

2.2.3 Research On 2-Dimension Animation Technology

Referring to Jamalludin Harun, et.al (2003) animation is use to give movement visualization of objects or something. It can make any stand-still or static object seems like moving and real. Animation in multimedia application can offers a dynamic presentation and attractive to audiences. Usually animation plays an important role in kids or teenagers software that using education and entertainment concept. Furthermore, animation is also important in developing software for educational courseware. Animation application in presentation can make delivery system of any complex concept become easier. Besides that, animation also gives emphasis in presentation that can attract user or customer.

In multimedia aspect, animation is one of the important element that capable to enhance attraction strength of programme or multimedia software. As additional, animation is not only refer to cartoon but in huge context especially for computer project on multimedia based. Nowadays, animators just use computer to produce or create characters of cartoon and movement because computer animation is growing up day by day. With powerful computer system, animation technology can be developed quickly.

Lately, some of animation films that really have a good quality such as “Who Framed Roger Rabbit” (1998) and Disney Studio film “Beauty and The Beast” (1991) and “Toys Story” (1995) using combination of animation technology and real life. These films produced a very satisfied outcome to audiences.

Animation can be produced in 2D, 3D or any combination of special effects. This animation can brings differences in programme because commonly audiences prefer to watch something dynamic and unstatic object. However, animation production process is not as easy as we thought because it requires a lot of experiences and skill.

In Malaysia, computer animation technology became popular when a few local animation cartoon series such as “Usop Sontorian”, “Keluang Man”, “Anak-anak Sidek” and “Silat Lagenda” have been produced. Although there are a lot of lacking parts, with

continuously financial support hopefully in the future local animation producer can brings a new changes in our entertainment field and filming market. Computer Animation is not only useful for entertainment but to our education perspective too.

Reffering to Vaugan.T (2004), by using software and a right method, we can produce any visual with animation. The simplest animation technology is 2D and the more complex one is 2 ½D which using shadows and reflection effect, salient feature, depth illusion and some 3D animation perspective. The most realistic animation is 3D which offers point of view perspective that can be seen from any angle.

2.2.3.1 Cell Animation

According to Vaugan.T (2004), 2D animation technique has already been applied a long time ago by international cartoon film companies such as Walt Disney. They use different graphic series for every film frame to produce a movement which plays 24 frames per second. One animation required at least 1440 different frames. The art work for cell animation started by keyframe which is a main frame and last frame for every action. The example is when an animation picture of a lady is walking on a screen, the following animation action must shows a repeattation of a foot movement to make it realistic. So for the first frame, animator have to draw the right foot and in the middle of frame the position of the left foot and body have to be change. In the last frame, animator have to draw both of the lady foot closely to the ground. So after every single frames are play, the object movement shows the lady is walking.

A series of frames in keyframe is created by Tweening process. Tweening is a process that requires a few of frames between keyframe, where the first step is drawn using a pensil through an outter sketch technique. The development of tweening process produced a perpetual frame time, all of this frames will be combined to form a long film stripe. When the sketch process is already satisfied, colour will be put for every single cell to produce a suitable colour tone. Colouring technique plays the important role whether usual colouring technique is used or special effect is required.

2.2.3.2 Computer Animation

Usually, computer animation have a specific procedure that have the same concept with cell animation and use a traditional animation cell that encircle layer, keyframe and tweening. The main different between animation programme is total image or cell that will be generated by the programme itself. In 2D theory, animator will create an object or just import from other image file collection such as Clip Art and then draw the path for the object. This animation programme is fully control on the object as what will be display to the audiences.

In 2D animation, every animation frames that is produce by the animator will be combined in one image file that will be played in one sequence. The examples of animation programme that uses the same theory are ULEAD'S GIF Animator and Alchemy's GIF Contruction Set Pro. Two programme that use digital video scheme to playback the animation are AVI and Quick Time.

Multimedia animation developer usually will state the amount of frames that is required. 2D animation programme such as GIF allowed a duration for key display and required total time to produce a full combination till the end. Meanwhile, 3D technology offers 15, 24 or 30 frames plays in one second but the display speed is still depends on memory and computer hardware itself.

2.2.4 Research on Macromedia Flash MX Software

Macromedia Flash MX is animation software that based on web. This software is similar to Director that often use for creating an interactive multimedia for CD-ROM or computer contents. According to Nasir Suruali (2004), Macromedia Flash MX is an application program with authoring tools standard that use for animation development and attractive bitmap in interactive and dynamic web development. Besides that, this application can be used in creating animation logo, movie, game, and navigation

developer for web site, button, animation, banner, interactive menu, interactive form fill, electronic card, screen saver and other web applications.

Macromedia Flash is one of the software that use vector graphic in creating multimedia CD-ROM application. Vector graphic uses mathematic calculation. Sizes for vector graphic also can be produced depend on user without increase its quality. So, web site can be displayed in any web browser. Size 640 x 480 or 1024 x 768 pixels for screen resolution are good enough to display best quality of animation for flash application.

Flash file will be saved as .SWF in web browser. When navigator open the web site that have an animation, the animation will automatically play in Flash player. From the 4th version till the latest version Flash 8, Flash offers ActionScript programming capability and JavaScript supported.

Potential and reputation of Flash reveal the disadvantages of security as charge by Krawetz. N (2000). This disadvantage is called "buffer overrun exploit" which allowed illegal flash application is built and may spoil our computer system when we run the program. Besides, this also can interrupt Internet Explorer and Flash navigator for Linux too.

There are a lot of criteria in Flash MX that can enhance creativity in media content development that is rich with maximum application capability. This latest criteria help to attract user to object design. By using a hint code, it can produce an automatic Action Script contents.

2.2.5 Research on Macromedia Director Software

According to Hofsteter (2004), Macromedia Director is a leader in sequence multimedia industry. Metaphor in Director environment is based on film production which complete with stage, actors and score. Media can be imported to cast window,