

IQRA' LEARNING COURSEWARE

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ABSTRACT

IQRA' Learning Courseware is a system that is aimed for people that interested in learning IQRA'. Nowadays, people usually use books in order to learn IQRA'. With this system, people no longer have to use the IQRA' book because it contains all the content in IQRA' book. This system deals with a number of useful functions where user may learn the basic word, the IQRA' and go through some exercises. There are two objectives of this courseware which are to teach the IQRA' learners more efficiently, in terms of time and the needs for instructors and also to computerized the IQRA' learning process. Rapid Application Development (RAD) is the methodology chosen for the development of this courseware as it requires shorter time to deliver the product. For the techniques, this courseware applied HCI technique which is Schneiderman's Eight Golden Rules of Interface Design in the courseware design. IQRA' Learning Courseware is expected to teach the IQRA' users effectively and efficiently. This report will discuss on the preparation and analysis that been collected throughout the development cycle of this system.

ABSTRAK

Sistem Pengajaran dan Pembelajaran Iqra' ialah merupakan sebuah sistem khas untuk sesiapa yang berminat untuk mempelajari Iqra'. Pada masa kini, mereka biasanya menggunakan buku untuk mempelajari IQRA'. Dengan sistem ini, mereka tidak lagi memerlukan buku kerana sistem ini mengandungi kesemua kandungan di dalam buku IQRA'. Sistem ini menyediakan pelbagai kemudahan yang mana pengguna boleh mempelajari huruf-huruf Al-Quran, Iqra' dan menjalani beberapa latihan. Terdapat dua objektif untuk sistem ini, iaitu untuk mengajar pengguna IQRA' dengan lebih berkesan, dari segi masa dan keperluan tenaga pengajar dan juga untuk mengkomputerkan proses pembelajaran IQRA'. 'Rapid Application Development' (RAD) ialah metodologi yang dipilih untuk pembangunan sistem ini kerana methodologi ini memerlukan masa yang pendek untuk mendapatkan produk. Untuk teknik, sistem ini mengaplikasi teknik 'Human Computer Interaction' (HCI) iaitu 'Schneiderman's Eight Golden Rules of Interface Design' di dalam reka bentuk sistem ini. Sistem ini diharap dapat mengajar pengguna IQRA' dengan lebih berkesan dan efisien. Laporan ini akan membincangkan persediaan dan analisis yang telah dikumpul selama proses pembangunan system ini.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

IQRA' is a set of books that act as a basic for reciting the great Al-Quran. A set of IQRA' contains 6 books where each and every book teaches different level of Arabic words. The first IQRA' introduce learners all the words in Arabic. There are simple sentences that contain no more than 3 words of Al-Quran so that new learners can learn to pronouns easily. The next IQRA' book teaches more difficult sentences and the last book of IQRA' teaches a few 'surah' in Al-Quran. Learners that can recite all the sentences in the last books fluently should have no problem at all in reciting Al-Quran.

IQRA' Learning Courseware is a computer based application that can be used to train the new IQRA' learners. The application needs to be installed in user's personal computer. The courseware will display the IQRA' words. In order to make the application more efficient, users also can listen to the correct pronunciation of the words. Besides, users can test their understanding by going through a few modules of exercises and the application will give the feedback and shows the results.

1.1.1 Statistical research on the Quranic recitation of students.

A research had been conducted to find out the overall Quranic recitation ability of the students and the standard of their reading based on the rules of Quranic recitation. The research was conducted among 320 form four students from ten selected national secondary schools in Terengganu.

The result of the research as shown in Table 1.0:

Table 1.0: Statistic on the overall students' performance.

Statistik (n = 30)	Prestasi Keseluruhan Pelajar
Min	52.9

The statistical description showed that the mean score for all the 320 students is 52.9 which means more than half of the students involved can recite Al-Quran accordingly to the correct recitation. The result obtained showed that the student performances are in the satisfying level. However, there are a number of students still had weaknesses and unable to recite Quranic in a proper way.

Source: "*Keupayaan Bacaan Al-Qur'an Di Kalangan Pelajar Tingkatan Empat: Kajian Di Beberapa Buah Sekolah Menengah Terpilih Di Negeri Terengganu*" Mohd Yakub @ Zulkifli bin Haji Mohd Yusoff dan Saidi bin Mohd (Mei 2008)

1.2 Problem Statement

According to the current practice, people who is interested to learn IQRA' needs to learn from IQRA' books which they have to buy from any bookstore. They also need instructors in order to learn the correct pronunciation of IQRA'. Without instructors, they can make mistakes in reciting the Arabic words. Through this IQRA' learning application, learners do not need to have instructors as they can listen to the correct pronunciation of all of the words.

They also will face few other problems especially for people who have other important commitment such as studying or working. So they may have difficulties to set a specific date and time to go to the instructors to learn IQRA' due to time constraint. Learning from instructors also costs learners on the monthly fee. With this application, there will be no problem on the time anymore because after installing the application, it can be used anytime and anywhere.

1.3 Objective

The objectives of the research are to:

- i. Develop a courseware of IQRA'.
- ii. Computerized the IQRA' learning process.

1.4 Scope

The scopes of the research are:

- i. The application covers the entire Arabic syllabus in the first IQRA'.
- ii. The application can be used by everyone especially the new Muslims, parents and the children.
- iii. There are three different modules which are '*Mengenal Huruf*', IQRA' and '*Latihan*'.

1.5 Thesis Organization

The thesis focuses on the development of IQRA' learning application using voice recognition technique. It is presented in six chapters.

- Chapter 1 : Presents an overview of the topic to be investigated and identifying the problems which have lead to this research. It also discusses the objectives and scopes of the research.
- Chapter 2 : This chapter presents the literature review related to the research area from previous research or studies which conducted by researchers and professionals. All the relevant research are taken from journals, technical paper and books according to the related fields of the project.
- Chapter 3 : This chapter develops the idea of IQRA' learning application based on the methodology chosen. Besides, it also reveals the techniques used to perform this research and the process flow of the project is discussed in detail.
- Chapter 4 : The development of IQRA' learning application using voice recognition are discussed in this chapter. Microsoft Visual Studio 2010 software is chosen as the tool of development.

- Chapter 5 : All the results and outputs of the testing are detailed out in this chapter. The data analysis and constraints of the project are also covered.
- Chapter 6 : This final chapter is devoted to summarize the project overall performance based on the objectives outlined.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Courseware is a term that combines the words 'course' with 'software'. Its meaning originally was used to describe additional educational material intended as kits for teachers or trainers or as tutorials for students, usually packaged for use with a computer [1].

Courseware can encompass any knowledge area, but information technology subjects are most common. Courseware is frequently used for delivering education about the personal computer and its most popular business applications, such as word processing and spreadsheet programs. Courseware is also widely used in information technology industry certification programs, such as the Microsoft Certified Systems Engineer (MCSE) and the Computing Technology Industry Association's A+ examination [2].

Courseware can include the material for instructor-led classes, material for self-directed computer-based training (CBT), web sites that offer interactive tutorials, material that is coordinated with distance learning, such as live classes conducted over the Internet and also videos for use individually or as part of classes [2].

To design an effective courseware a number of factors concerning the good practices in education and learning need to be reviewed. Students' learning styles, the purpose of education, and mode of delivery of the course are to be chalked out [3].

2.2 Current Practice

Nowadays, learning Iqra' is done manually by using a set of books which learners may find in any bookstore. Then, they will need instructors in order to learn the Iqra' from the beginning, step by step.

There are a few weaknesses that have been identified with the current practice:

- i. **Requires instructor**
For the new learner, users need to have at least an instructor to guide them in reciting the words. Without instructor, users will not be able to read it using the correct way of pronunciation.
- ii. **Requires specific time**
Users need to allocate specific time for learning Iqra', are according to the instructors. Some users may face difficulties due to time constraints especially for students and working people.
- iii. **Cost**
Hiring instructor may cost users for the monthly fee, which the pays is depends on the instructor. Besides, transportation costs that take users to the instructor place may also be considered.

2.3 Studies on Related System

There are few similar systems which are learning courseware:

- i. Game-based Learning Courseware for Children with Learning Disabilities
- ii. Mathematics Courseware for Autism Children (Numbers)
- iii. Development of an Electronic Courseware System

2.3.1 Game-based Learning Courseware for Children with Learning Disabilities

The courseware is known as Playtime Learning consists of Play games and Fun activities. This multimedia courseware was developed to educate children with Learning Disabilities (LD). This game-based courseware was expected to help LD children to explore their capabilities in their own pace of time. The courseware can be used as a medium to educate children with LD, to stimulate their psycho-motor for using the computer and also to develop their thinking skills while having fun playing the games. At the same time, this courseware might encourage the teachers and parents to improvise their ICT skills and hands-on learning as a learning tool [4]. Figure 2.0 shows the flow of Playtime Learning Courseware. The courseware contains Fun Activities and Play Games.

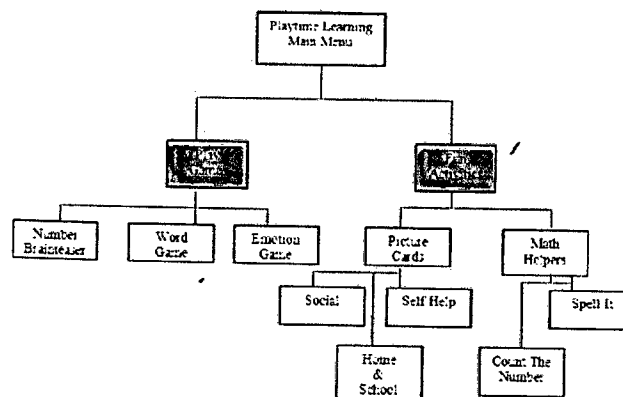


Figure 2.0: Flow of Playtime Learning Courseware

The main page is shown in Figure 2.1. In order to enter menu page, user has to click let's start button.



Figure 2.1: Main page of Playtime Learning

Figure 2.2 shows the menu page which consists of three buttons which are Fun Activities, Play Games and Exit.



Figure 2.2: Menu Page

The Play Games can be seen in Figure 2.3. There are three sub modules which user may choose, number brainteasers, emotion games or word games. Brainteasers consists of sets of questions that involve add, multiply, divide and subtraction. Emotion games allow the users to learn different types of emotions based on facial

expression of the pictures displayed. While in word games, the users need to rearrange the displayed letters into a correct word.



Figure 2.3: Play Games

Fun activities consist of picture cards and math helpers. This can be seen in Figure 2.4. Users can indirectly learn how to build basic skills and learn mathematics. In Picture Cards, there will be several sections on social, self help and home and school. While Math Helpers has been divided into 2 parts which are Count the Number and Spell It. Both of these parts will teach the user on how to count and spell the numbers.



Figure 2.4: Fun Activities

2.3.2 Mathematics Courseware for Autism Children (Numbers)

Children with autism are socially impaired and usually facing problems in communication. The concept of Behaviourism learning theory is seen as an innovative approach to be used in producing mathematics (Numbers) courseware for autism children. Behaviourism learning theory focuses on a behavioural pattern being repeated until it becomes automatic. The approach to treatment for children with autism is termed Discrete Trial Training, which involves a series of distinct repeated lessons or trials taught one to one. Each trial consists of an antecedent, a directive for the individual to perform action, or the reaction based on the response of the person.

This prototype is specially developed for moderate level of autistic children targeted for primary schools which covered syllabus of Mathematics Component in the '*Huraian Kurikulum Pendidikan Khas Bermasalah Pembelajaran*' (PKBP) set by Ministry of Education. The courseware is named as Math for Autism and is aimed to assist children to understand the concept of number, acquire and apply the basic skills in mathematics in their life. The integration of two concepts, 'Drill and Practices' and Discrete Trial Training (DTT) are chosen in developing the system [5]. Figure 2.5 shows the course map of Math for Autism. There are all three modules in the system which are Learning Time, Game Zone and Sing a Song.

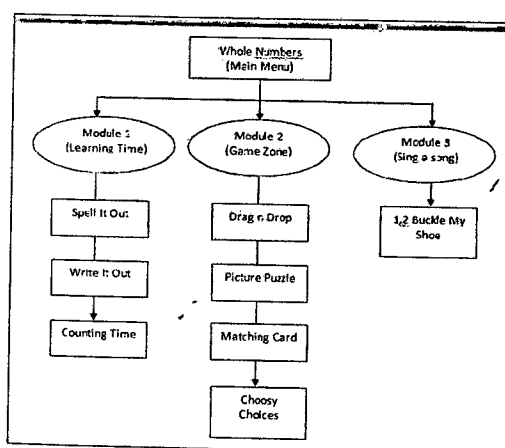


Figure 2.5: The course map of Math for Autism

Figure 2.6 shows the bedroom setting where user will learn the basic things in the bedroom. Figure 2.7 and Figure 2.8 below shows one of the learning activities to motivate student to count the number by using game.

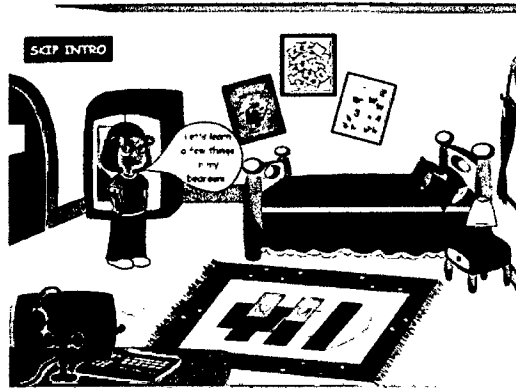


Figure 2.6: Bedroom setting

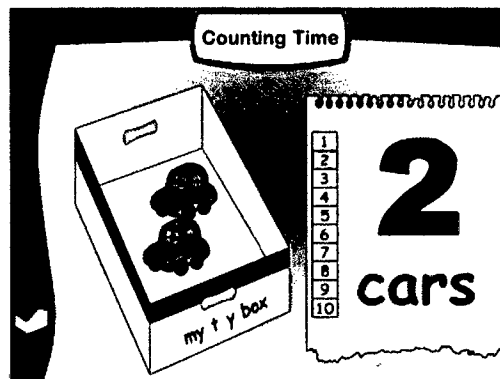


Figure 2.7: Counting Time

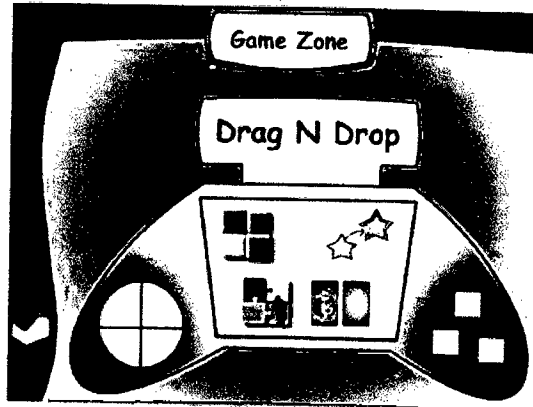


Figure 2.8: Game Zone

Students also will be asked to write and spell the number as shown in Figure 2.9 and Figure 2.10 below respectively.

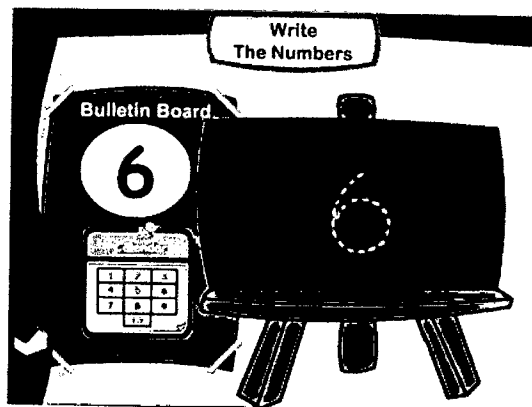


Figure 2.9: Write Number



Figure 2.10: Spell the Number

2.3.3 Development of an Electronic Courseware System

An Electronic Courseware system can refer to an entire course and any additional material when used in reference an online or 'computer formatted' classroom. The term can also be used to describe the entire package consisting of one course bundled together with the various lecture notes, tests, and other material needed. This project made use of user friendly programming languages and tools such as PHP and HTML with Dreamweaver in the design of a user friendly E-courseware system. In conclusion, the Electronic courseware developed showed that Information Technology is a tool that can aid effective learning [6]. The flow of the system is shown as Figure 2.11 below. User must first register and login in order to get access to the system. Basically, there are three modules which are Lecture Notes, Tutorials and Take Test.