

Interactive IQRA Learning System

By

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Dissertation submitted in partial fulfilment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information System)

September 2011

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Business Information System Programme
Universiti Teknologi PETRONAS
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Approved by,



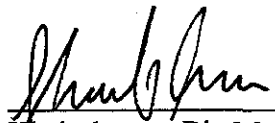
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September 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



Khairulanwar Bin Mohd Noh

ABSTRACT

As we all know, it is important to teach our children to learn the basic of reading Al-Quran at their early age. The widely use method of teaching is using a book called IQRA. But, the use of this traditional learning method is insufficient to ensure that all the children are interested enough. “Interactive IQRA Learning System” is a courseware which will help them to attract and maintain the children’s interest. It also will help them to have better understanding on the basic of reading Al-Quran. The study on learning theories and learning methods that is suitable for children was being done so that the courseware will be a success. ADDIE Model was selected to be implemented in this project. The ADDIE Model was chosen because the model provides a step-by-step process that can be useful to development of training or learning solutions. This courseware was developed by using tools and software such as GameMaker, Audacity, and Adobe Photoshop. The design of this courseware should be in their age range, level of thinking and suitable for all children. Thus, the courseware would assist the children’s learning and understanding ability.

ACKNOWLEDGEMENTS

I would like to extend my heartfelt appreciation and acknowledgement to the following individuals, without whom the completion of this dissertation could not have been possible:

Mr Faizal Bin Fadzil, my final year project supervisor that had provided me with invaluable encouragement, guidance and patient which has been instrumental in guiding the path and shape of this project to completion;

My friends and colleagues, all of whom have helped in their own little but significant ways;

And of last but not least, my family, whose moral support and love form my pillars of strength during the challenging life and times as a final year student.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

This research will need the cooperation between teachers, parents and children in order to come out with desired courseware for early education that will suit to Malaysia's Islamic Education Division. The courseware will be used to teach the basics knowledge as preparation to read Al-Quran.

The conventional learning method of teaching IQRA is by using the 6 different books where each books differs with each another based on the level of difficulties. But problem arise where the children will find it difficult to maintain the learning interest. Therefore, this project will be focusing on developing a courseware for children in order to help them to have the knowledge on reading Al-Quran. Significant of this project is to assist children to be interested in learning using IQRA and help them to gain knowledge as well.

1.2 Problem Statement

In Malaysia, most of the processes of learning Iqra' was using books and videos. When books were used during the learning process, children will tend to find it as a boring and uninteresting due to the non existence of multimedia elements such as animation and sound. Thus, children will find it difficult to learn as it is differs from their interest. This can be proved according to the research that had been done by Bloom & Hanych (2002), where they pointed out that if students are not enjoying themselves, they are not learning. Meanwhile, while using videos, it is more on one-way communication which consists of low level of interaction thus it will made most of children bored.

1.3 Objectives & Scope of Study

1.3.1 Objectives

1. To implement IQRA concept by the way of a courseware targeting children at age three to seven years old.
2. Improve learning by focusing on reading selected chapters of Al-Quran.
3. To design and develop interactivities in the courseware for children based on the IQRA concept.

1.3.2 Scope of Study

The scope for this project is to design and develop a courseware for children aged from three to seven years old. This project is focussing on the learning the basic of reading Al-Quran. This project also used the combination of animated graphics, speech and music to create a fun learning environment. As the end result, this courseware will help children to learn this topic and enhance their skills.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Learning to read Al-Quran is a need for all Muslim. This is because Al-Quran is a holy book that provide for humans guidance to worship Allah S.W.T. Thus it is essential to teach the basic of reading Al-Quran at early stages. In Malaysia, the learning of Iqra was introduced so that children will be able to learn the basics to read Al-Quran. This Iqra method of learning was being modified by following an ancient method (Baghdadi) so that the ability of reading Al-Quran can be possesses quickly. Yet, there is a problem in this learning process where it is difficult to attract and maintain the children's learning interest.

However nowadays, with the existence of *edutainment*, children can both play and learn at the same time. Edutainment is a combination of the word education and entertainment. To Buckingham and Scanlon (2000) "Edu-tainment", is a hybrid genre that relies heavily on visual material, on narrative or game-like formats, and on more informal, less didactic styles of address. The purpose of edutainment is to attract and hold the attention of the learners by engaging their emotions through a computer monitor full of vividly coloured animations. It involves an interactive education and, in Buckingham and Scanlon words, totally depends on an obsessive insistence that learning is without doubt "fun". "Interactive Iqra Learning System" is a courseware made for children where it will help to maintain their interest in the learning process and master the basic of reading Al-Quran.

Before developing the courseware, the study of related field will be performed so that the courseware will be able to enhance learning. This is being achieved by gathering and study on the features and principle of designing a multimedia courseware. Besides that, children learning theory is also being identified in this paper.

2.2 Iqra Learning Method

Nowadays, student will faced problem in mastering on how the read Al-Quran properly. Research on the method of learning how to read Al-Quran had done by many researchers such as Azman Wan Chik (1986), Norkamaliah Mohammad (1987), Madihah Haji Mohamad (1992), Maimunah Ismail (1995) and Mohd Aderi Che Noh (2004). Based on research that had been done, they stated that the high numbers of students still did not master several aspects such as ‘tilawah’, ‘tajwid’ and many more. Besides that, they also found out that there were a number of students that failed to read several lines of words in the Al-Quran (“buta Al-Quran”). They found out that one of the factors students failed to master the ability of reading Al-Quran due to the ineffective ways or techniques was used in the process of teaching that had been used by most of the teachers. That was why the government allow Iqra method to be used in Malaysia for kids to learn the basic of reading Al-Quran.

This Iqra method was being developed by al-Marhum Ustaz Hj Asad Humam (Pengarah Kumpulan Tadarus Angkatan Muda Masjid dan Musholla Yogyakarta) in 1988 at Indonesia. He able to introduced this learning method by using his experience of teaching Al-Quran since 1950. The learning method was then being introduced in Malaysia in 1992. This Iqra learning is a process where it is much easier for the kids to understand.

Ustaz Mohd.Mukri Hj Abdullah (1994) stated that there are several characteristics of this Iqra method of learning as it stated as below:

- **Direct reading** – Students were not being introduced to basic words (Hijaiyah) and the marks of reading. Students will directly learn on the sound of each word.
- **Using specific books** – This learning method used a set of books that consists of 6 modules (juzuk). Each of students will used the book based on which level they are by starting with the first module. Each module will be covered by different colours so that it will attract the student’s interest.
- **Using the technique of ‘Cara Belajar Murid Aktif’ (CBMA)** – this was the technique where teachers will teach the student on the basics only. Then, students will be asked to read the next module on their own.

- **‘Talaqqi Musyafahah’** – In the process of learning how to read Al-Quran, students need to learn in front of their teachers. This factor was very important as it will let the students know the characteristics of each alphabet correctly.
- **Level based on individual achievement** – The level of achievements was being tracked by individual not in a team.
- **Practical** – This Iqra method was introduced so that students can easily and faster mastered on how to read Al-Quran easily and faster.
- **More systematic** – Each of the students need to follow the module as it had been organise by its level of difficulties. It will start with simple words and then the words will become longer as it follows which level / module that student used.
- **Easy** – Iqra does not only can be taught by certified teachers but the parents also can taught their children because the book can be easily read by anyone.
- **Inculcate self confidence and leadership among the students** – This can be gained when students help to teach other students.

2.3 Multimedia as a Teaching and Learning Tool

The current standard or widely used form of education using Iqra was based on textbooks. Current advances in Information and Communication Technology (ICT) had encouraged technology to be included in any type of learning such as in the classrooms. This technology had already been popular in today world’s educational settings. This had been supported by Selwyn (2007), where he stated that computer-assisted learning has become popular in educational settings, having revolutionised the higher education sector.

What is ‘Multimedia’? According to Fenrich (1997), multimedia is the exciting combination of computer hardware and software that allows a person to integrate video, animation, audio, graphics, and text resources to develop an effective presentations on an affordable desktop computer. Phillips (1197) also pointed out similar description of multimedia where he stated that it can be characterized by the

presence of text, pictures, sound, animation and video; some or all of which are organized into some coherent program.

The motion picture is destined to revolutionize our educational system and that in a few years it will replace...the use of textbooks (Edison, 1922). As what that had been stated by Edison, he believed that motion picture which is multimedia can already replace the use of textbooks as what we can see nowadays. Some of the learning method that had been implemented in schools around the world nowadays is using multimedia due to the characteristic that a multimedia courseware possesses such as attractiveness and interactivity. People enjoy multimedia, prefer multimedia learning materials, and believe that multimedia helps them learn (e.g Bosco, 1986; Fletcher, 1989; Sewell & Moore, 1980). It proves that multimedia will bring a lot of benefits when it is being implemented in learning process.

There are a lot of benefits when using multimedia as the medium in the learning method. Based on research that had been done by Hick (1997), the benefits were learning can be improved, interactive flexible, modular, consistent, timely, engaging and cost-effective.

Interactivity

Interactivity can be thought of as mutual action between the learner, the learning system, and the learning material (Fowler, 1980). Interactivity appears to have a strong positive effect on learning (Verano, 1987). Similar research also shows the same result as people will able to have better attitudes toward learning the material when they learn in an interactive instructional environment (Fletcher, 1990). According to Reeves (1998), "Multimedia can stimulate more than one sense at a time, and in doing so, may be more attention-getting and attention-holding". Interaction is commonly viewed as stimulus response reinforcement encounters action, an integrated form of between the learner and the instruction (Stemler, 1997). Interactivity makes the learning process responsive and active, governing a learning of participation and doing, not passive watching or merely listening.

Flexible

If the multimedia courseware is on CD, it can be categorized as flexible as it can be used anytime and anywhere. The items needed only a computer and the time to study can be adjusted based on the learner's preference.

Modular

Modular here refers where each of the topic or section can stand alone. It will give advantage where the trainers / teachers can explore deeply into topic that they preferred and able to skip over those that they did not want to explore. Teachers can easily go to the module or topic that they wanted to teach to their students. This is proven where (Hick, 1997) stated that a multimedia courseware allows the student to delve as far into a subject as they wish.

Consistent

All learners learn the same principles and skills. Computer-based courseware typically forces instructional designers to better organise and structure learning materials, and this alone can result in learning advantages.

Engaging

When live-action videos, audio, graphics, feedback, expert advice, questions and answers, have been used, it keeps learners interested and reinforces their skills. Though these methods are exciting and fun, they are challenging at the same time, and it makes the learners to return to the program again and again. Through continual practice, learning is absorbed and integrated into daily performance.

How learning can be improved when using multimedia as a learning tool?

Multimedia was all about using software that having the integration of text, pictures, sound, animation and video. Pictures and animations help bring to life scientific

principles, and multimedia allows students to take a more active role in learning: they can use a mouse or keyboard to navigate images, simulations and interactive material. This will keep them interested in learning (Savage and Vogel, 1996). Levie and Lentz (1982) discovered that text that was accompanied by illustrations showing what was described in the text was learned better by children than text that was not accompanied by illustrations. Children also tend able to easily to do memorizing task when simultaneous audio and pictures were used in learning process (Severin, 1967). Similar result had been identified in (Nugent, 1982) study where highest learning levels were found when students were presented information via combined text and pictures or combined audio and pictures, compared to the same content presented via text alone, audio alone or pictures alone. All the research that had been done proved that learning can be improved when multimedia (integration of text, sound, pictures, video, or animation) were being used. Besides that, by using multimedia courseware, Hick (1997) claimed that multimedia courseware is a learning tool that allows students to work at their own pace and thereby avoiding the possibility of going too fast for some, and too slow for others.

Designing Multimedia Courseware

The designation of a multimedia courseware need to be done carefully so that it learners can gain the advantages while using it. Based on research that had been done by Mayer & Moreno (1997), they had come out with research-based principles for the design of multimedia messages. All the principles are listed in a table below:

Principle	Description
Multimedia principle	People learn better from words and pictures than from words alone.
Segmenting principle	People learn better when a multimedia lesson is presented in learner-paced segments rather than as a continuous unit.
Pre-training principle	People learn better from a multimedia lesson when they know the names and characteristics of the main concepts.

Modality principle	People learn better from animation and narration than from animation and on-screen text.
Coherence principle	People learn better when extraneous words, pictures, and sounds are excluded rather than included.
Redundancy principle	People learn better from animation and narration than from animation, narration, and on on-screen text.
Signalling principle	People learn better when the words include cues about the organization of the presentation.
Spatial contiguity principle	People learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen.
Temporal contiguity principle	People learn better when corresponding words and pictures are presented simultaneously rather than successively.
Personalization principle	People learn better when the words are in conversational style rather than formal style.
Voice principle	People learn better when words are spoken in a standard-accented human voice than in a machine voice or foreign-accented human voice.
Image principle	People do not necessarily learn better from a multimedia lesson when the speaker's image is added to the screen.
Individual differences principle	Design effects are stronger for low-knowledge learners than for high-knowledge learners. Design effects are stronger for high-spatial learners than for low-spatial learners.

Table 2.1: Principles to design multimedia courseware

Based on all the principles stated above, it shows that there are many things need to be considered. It is important to refer and follow those principles as it will ensure that the process of learning through multimedia can be as effective as traditional learning process such as traditional classroom-based learning.

2.4 Children Learning Theory

To develop a multimedia courseware, it is important to do the study on development of multimedia courseware. But to develop a courseware that suits with for kids, it is important also to study on the children learning theory as well. This study includes the behavioural of kids that emphasizes on kid's preferences, behaviour, needs, and many more. A multimedia courseware created for kids will be useless if it does not follow what children's needs. As Norman (1988) points out, for any design to be successful, in terms of developing usable and understandable products, then that design must be based on the needs and interests of the users and be informed by an understanding of their limitations and capabilities. This shows that the importance studying on children learning process is a need in designing this courseware.

Stages of Cognitive Development

Jean Piaget was famous with his research on stages of cognitive development. Based on his research, he believed that children thinks and reason differently at different stages in their lives. He assumed that everybody will pass through sequence of four qualitatively distinct stages which were stated as below:

- Sensorimotor stage (birth to 2 years) - In this period, it consist of 6 stages). Intelligence is demonstrated through motor activity without the use of symbols. Knowledge of the world is limited because it's based on physical interactions or experiences. Children acquire object permanence at about 7 months of age (memory). Physical development (mobility) allows the child to begin developing new intellectual abilities.
- Pre-operational stage (2 years to 7 years) - In this period, it has two sub-stages, intelligence is demonstrated through the use of symbols, language use matures, and memory and imagination are developed, but thinking is done in a non-logical, non-reversible manner. Egocentric thinking predominates
- Concrete operational stage (7 years to 11 years) - Intelligence is demonstrated through logical and systematic manipulation of symbols related to concrete objects. Operational thinking develops (mental actions that are reversible). Egocentric thought diminishes.

- Formal operating stage (11 years and up) - In this stage, intelligence is demonstrated through the logical use of symbols related to abstract concepts. Early in the period there is a return to egocentric thought. Only 35% of high school graduates in industrialized countries obtain formal operations; many people do not think formally during adulthood.

Based on the IQRA research that had been done, the most suitable age to follow the learning method is during the pre-operational stage because from the ages of 2-7, children are in the pre-operational stage. At this point they are learning to use symbols such as language to represent objects, and beginning to understand the concept of conservation. It is also the phase in which memory and imagination developed.

Principle of Child Education

The courseware made for children need to satisfy the needs and wants of children. This is important as based on Bloom and Hanych (2002), they stated that if students are not enjoying themselves, they are not learning. In other words, learning becomes an obstacle that learners need to overcome. Most of teachers will be implementing multimedia elements in order to make the learning becomes more enjoyable. Teachers tend to make the learning as fun as they can so that the children will be able to focus and understand on what they are trying to teach. Nowadays, with the existence of technology, most teachers will teach by using a method where combination of text, sound, graphics and animation (multimedia) are used together to improve the learning methods. This is because they want to make the students not to be bored during learning. The approaches that used by teachers need to be suitable so that learners can gained the knowledge that given to them if not the learning process will be useless. There are 10 principles of early childhood education (Bruce, 1996) and it is stated as below:

- Giving the children what they need is the best way to prepare children for their adult life

- Children are whole people who have feelings, ideas and relationships with others, and who need to be physically, mentally, morally and spiritually healthy.
- Subjects such as mathematics and art cannot be separated; young children learn in an integrated way and not in neat tidy compartments.
- Children learn best when they are given appropriate responsibility, allowed to make errors, decisions and choices, and respected as autonomous learners.
- Children need their efforts to be valued. Reward systems are very short-term and do not work in the long-term
- There are times when children are especially able to learn particular things.
- What children can do [rather than what they cannot do] is the starting point of a child's education.
- Imagination, creativity and all kinds of symbolic behaviour [reading, writing, drawing, dancing, music, mathematical numbers, algebra, role play and talking] develop and emerge when conditions are favourable.
- Relationships with other people [both adults and children] are of central importance in a child's life.
- Quality education is about three things: the child, the context in which learning takes place, and the knowledge and understanding that the child develops and learns.

After following all the points above, it will enhance the usage of the courseware as it will follow all the needs of children in their learning process. All the research had been done by various researchers had shown how important it was to get know the behavioural and needs of the children as it will made the courseware useful. Based on all the principles above, it is a need to give freedom for the child in the pre-operational stage to learn during play as play gives children the chance, in a world where so many carry heavy burdens, to simply be children. It is through play that children learn best.

CHAPTER 3

METHODOLOGY

3.1 ADDIE Model

Through this project, ADDIE Instructional Design Model will be used as the project's development methodology. The ADDIE Model provides a step-by-step process that can be useful to development of training or learning solutions. The model is consists of five phases: Analysis, Design, Development, Implementation and Evaluation.

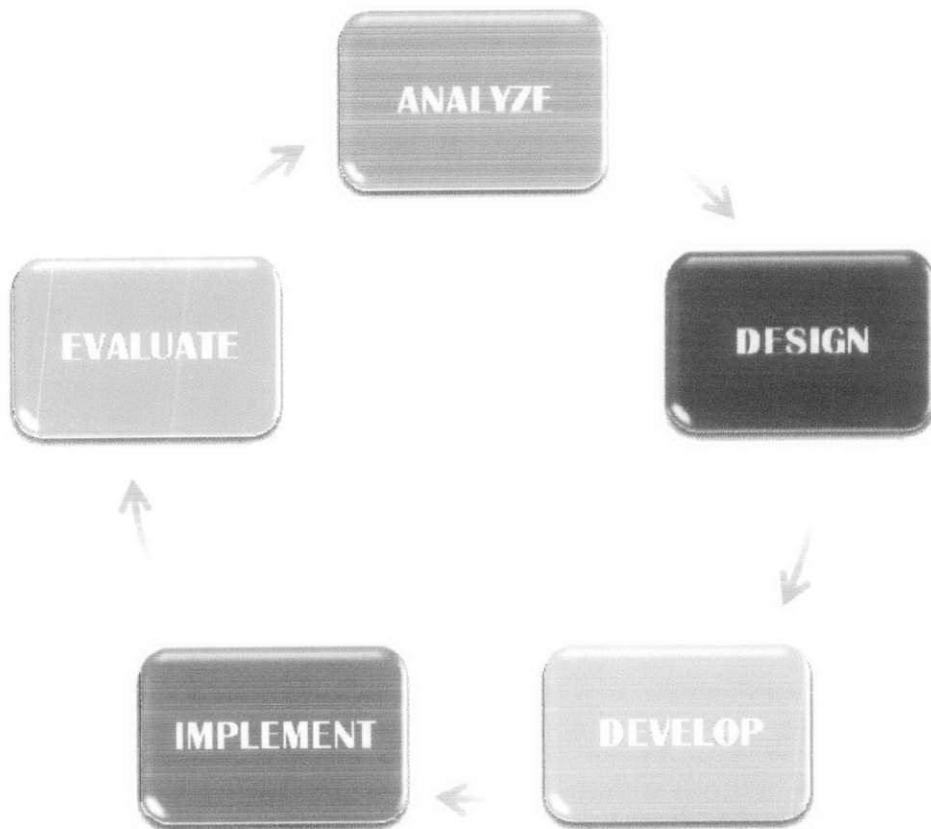


Figure 3.1: ADDIE Design Model

3.2 Project Activities

Analysis

The first phase is the analysis phase where it is vital as it is the most vital phase of all. It is very vital as in this phase, many things had been identified such as the goals and objectives, resources available and learner's needs and capabilities. There are several key questions that had been concentrated on during this phase which is stated below:

- What is the problem?
- What are the project's goals and objectives?
- Who are the target audience and what are their capabilities?
- What types of learning constraints exist?
- What are the Learning Theory concerns?
- How long is the time given to complete the project?

This analysis part is very important as the errors will need to be avoided as it will be costly and difficult to be fixed or redesign the projects. So, it is vital to do data gathering process so that all the needs of the project can be identified during this phase. The data gathering processes that will involve in this phase is questionnaires. The process of questionnaire will be explained in detailed as stated below:

Data Gathering Technique	Description	Steps involved
Questionnaire	<ul style="list-style-type: none">- Used to gather data from a large number of people- 3 types of question can be used (close-ended questions, open-ended questions and probing questions)	<ul style="list-style-type: none">- Select participants- Design questionnaires- Administering questionnaires- Questionnaires follow-up

Table 3.1: Data gathering technique

Design

This design phase had been organized and precise as it will be involve by using all the data that had been gained from the previous phase which is the analysis phase. The input or data that had been gained were being used to plan and develop the strategies that will be used to meet the project's goals. The strategies that had been taken had determined what is the output of the project will look like when it is completed. In this phase, the content of the project had been determined before the process of development took place. There are few points that already being considered during in this phase which are stated as below:

- How the content should looks like in the system?
- What should be the learning objectives?
- What are the resources needed to develop the system?
- How the system able to evaluate learner's accomplishments?

The system's look and feel, graphic design, user interface, and content are the output in this phase. All this output had been used for the prototype specifications for the next phase. Few changes had been made to the design of the courseware and it is shown as stated below:

Courseware Design

Flow Chart

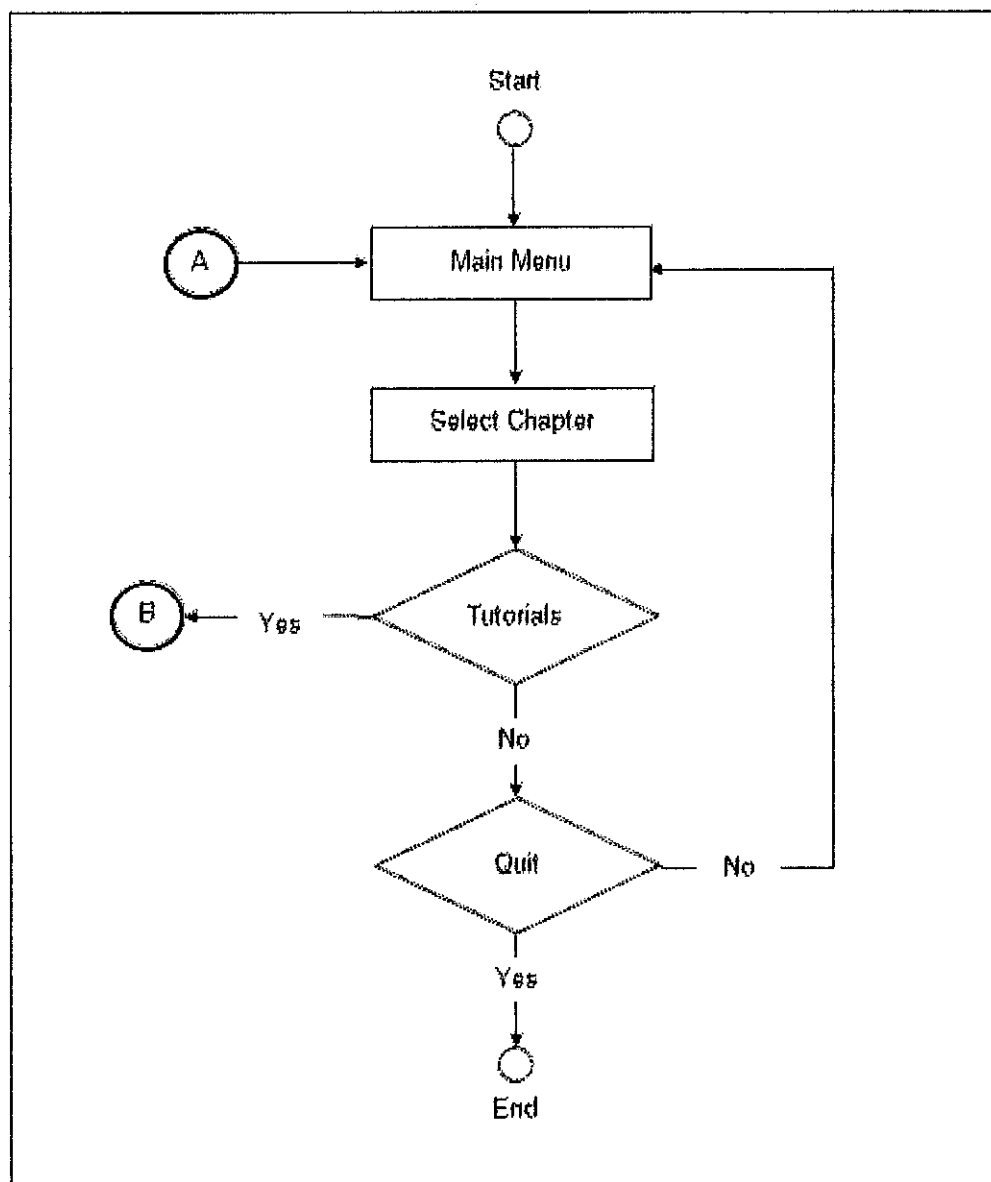


Figure 3.2: Main flow chart

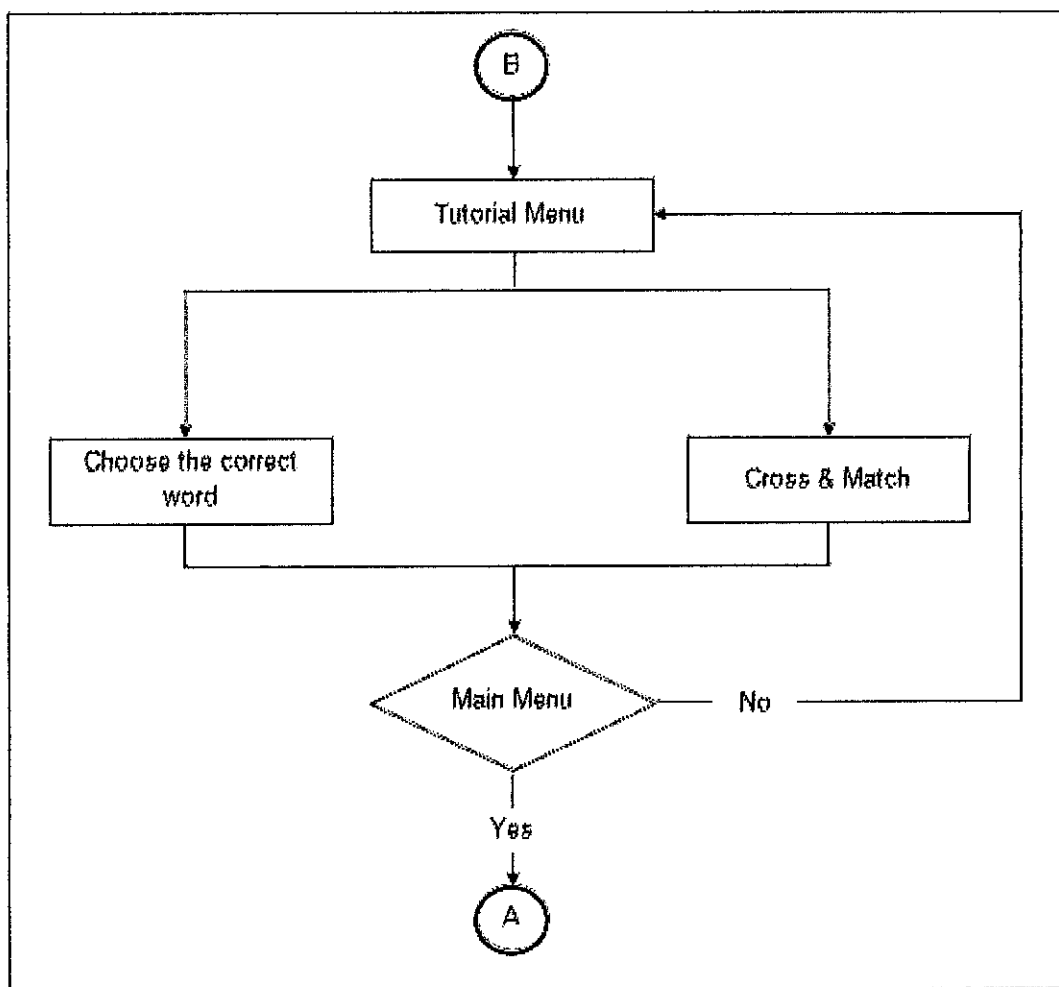


Figure 3.3: Tutorial flow chart

Development

This is the phase where the actual creation will be developed by using input or data that had been gained from Design phase. All development tasks had been done in this phase such as storyboards and graphics. Pilot session needed as the prototype will be having changes in order to meets audience's needs. The prototype had been revised and redeveloped until all the audience's needs had meet.

Implementation

In this phase, the system will be installed into real world. The audience will be able to use the system that had been created based on the design that had been made in the development phase. Besides that, audience's comments and data on the system had been noted for the maintenance purposes.

Evaluation

Evaluation is the last phase in this ADDIE model. This phase is important as proficiency of the system will be determined and the effectiveness will be measured. *Formative evaluation* and *summative evaluation* are two types of evaluation that are used in this phase. Formative evaluation is used in order to improve the system before the system is being implemented which will be conducted by the programmer itself. Meanwhile, summative evaluation had been used to determine the effectiveness of the system with the help of the audience.

3.3 Tools Required

Variety of tools will be required in order to develop and build this courseware. All the tools required are stated below:

Hardware

- Personal Computer
- Microphone

Software

- GameMaker
- Audacity
- Adobe Photoshop
- Arabic Keyboard Language Support

CHAPTER 4

RESULT AND DISCUSSION

4.1 Introduction

As stated earlier in Chapter 3, all the data needed are gathered using questionnaire. Questionnaire is being done so that all the needs of the project can be identified during analysis phase. Questionnaire was given to selected 50 individuals that consist of 25 teachers and 25 parents. Teachers that participated in this questionnaire consist of Islamic teachers and also teachers from Islamic kindergartens. A number of 25 parents also did contribute to become the respondents of this questionnaire. The questionnaire was divided into three parts; the first section will be about the background of respondents. This part will be needed to be answered by all respondents meanwhile the second section was needed to be answered only by parents. Last but not least, the last part was answered by teachers.

4.2 Section 1 - Background of Respondents

a) Gender

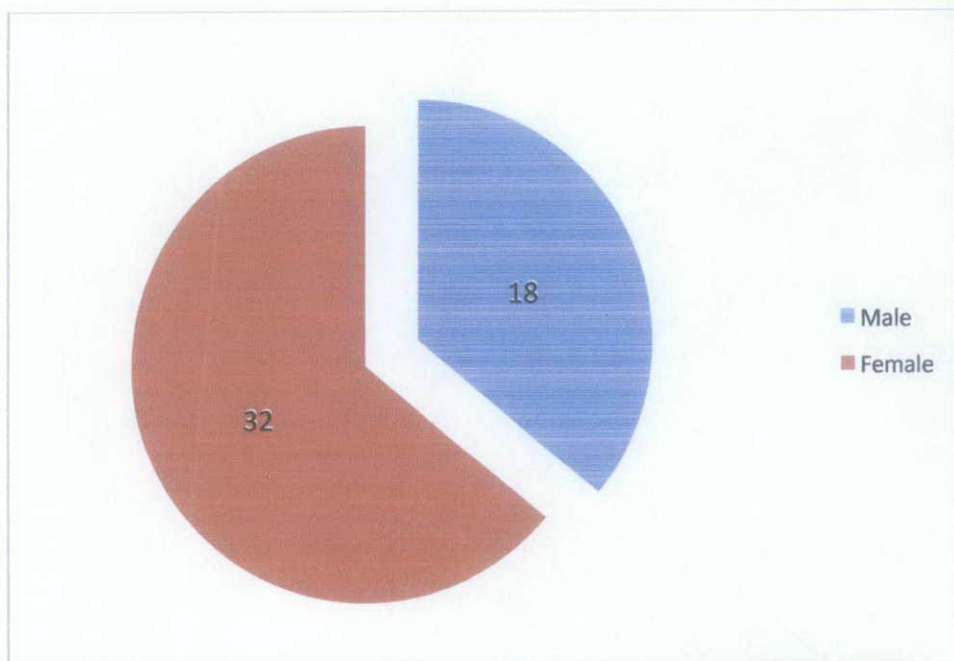


Figure 4.1: Respondents by Gender Pie Chart

Out of 50 respondents that participated in this questionnaire, 32 are female, meanwhile 18 respondents are male.

b) Age



Figure 4.2: Respondents by Age Column Chart

Respondents within the range of age of 21 to 35 years old represent the majority with a total number of respondents of 29 persons. Meanwhile respondents aged 36 to 50 years old is the second highest with a number of 19 respondents followed by 2 persons that aged 51 to 70 years old.

4.3 Section 2 – Responses by Parents

- a) What is the suitable age for the children to learn on the basis of reading Al-Quran?

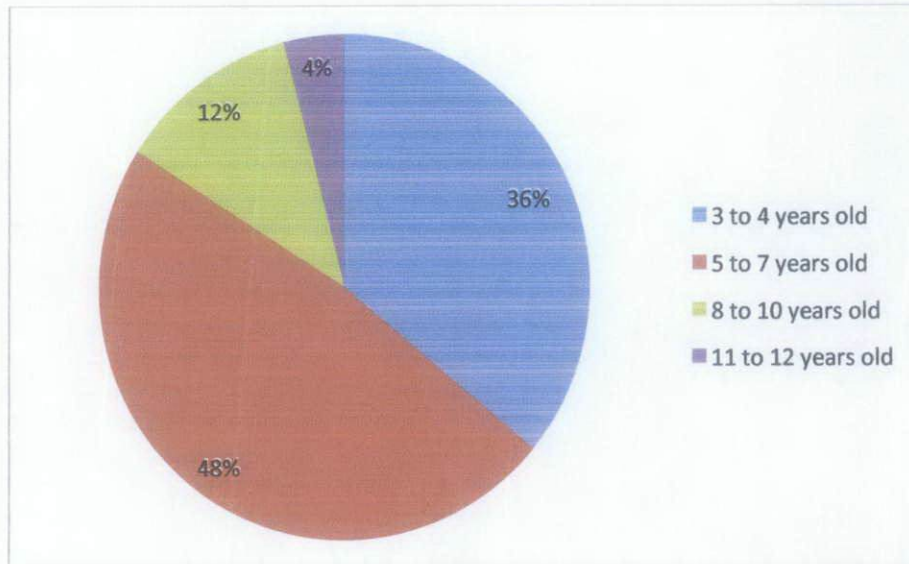


Figure 4.3: Question 1 Parent's Responses Pie Chart

48% of the respondents agreed that the most suitable age is 5 to 7 years old which is the most favourable answers for this question. Followed by 36% of the respondents stated that children aged 3 to 4 years old is suitable and 12% agreed on children aged 8 to 10 years old.

Perhaps the reason why early age of children are being selected by most respondents is because the trend nowadays where the parents want their children to be learning everything as soon as possible. The trend is getting widely used by most parents because they want their children to get education as early as their children can get. Most parents has realised the importance of knowledge in this competitive era.

b) I spare some specific time to teach my children on how to read Al-Quran.

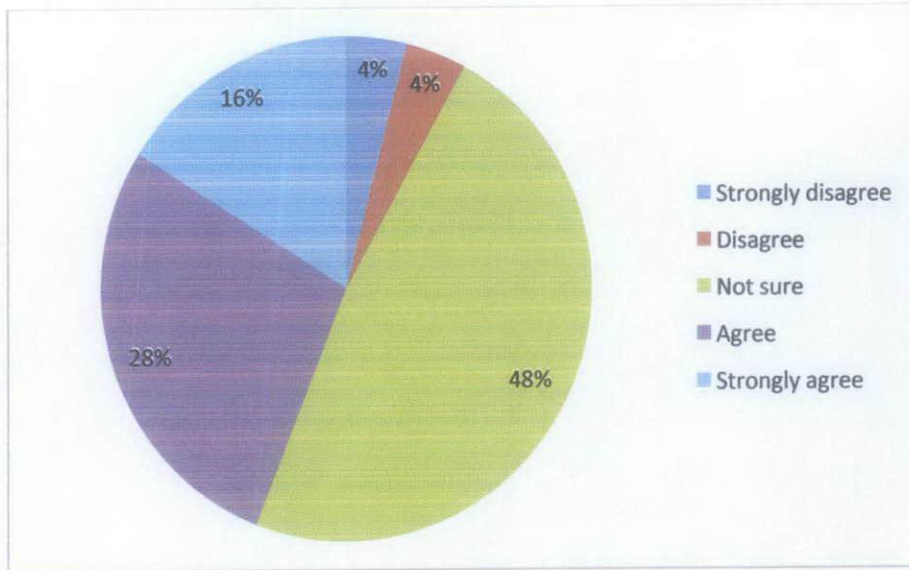


Figure 4.4: Question 2 Parent's Responses Pie Chart

For this question, the highest percentage which is 48% of the respondents had chosen not sure as their answer. While a large number did agree that (44%) they are spending time to teach their children and 8% of the respondents did come out with the disagree as their responses.

The result of the unsure answer for this question maybe because the parents did not spend enough time with their children at home. Maybe both of the husband and wife are working persons and they did let the educational job to be in the hand of teachers. A high number of respondents also agree that they had taught their children on the basics. This group of people can be targeted to become the user of this courseware as it will help their task easier in educating their children.

- c) I will buy CD or books that will for my children to learn or improve on the basic on how to read Al-Quran.

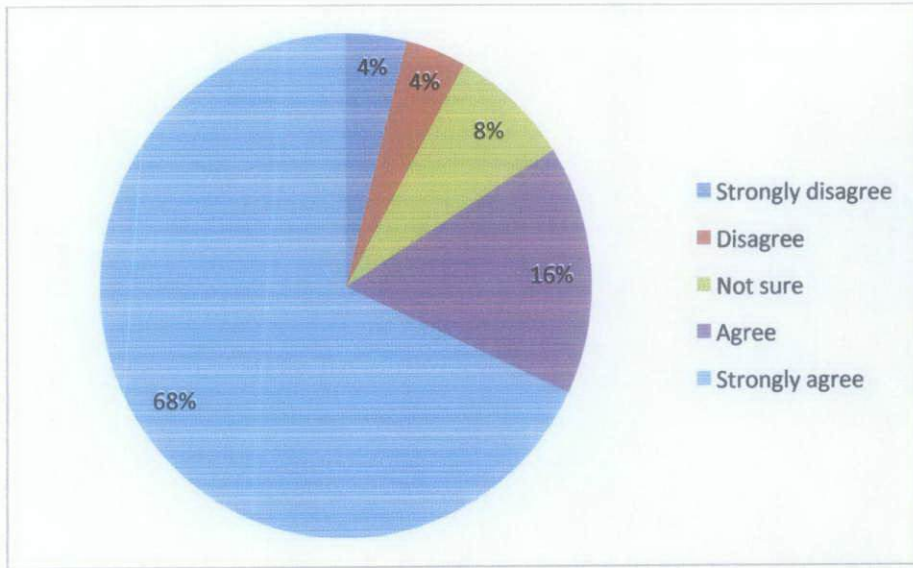


Figure 4.5: Question 3 Parent's Responses Pie Chart

A high number of respondents come out with positive response to the statement which recorded a percentage of 84%. 8% of the respondents give their answer negatively and the same percentage also agreed that they are not sure about the answer on the statement given.

The high percentage on the agreement of the statement shows that parents will do anything for the purpose of their children education. Respondents who choose the neutral response were probably satisfied with their current effort of educating the children.

d) Do you agree that children interest more on computer based compare to book?

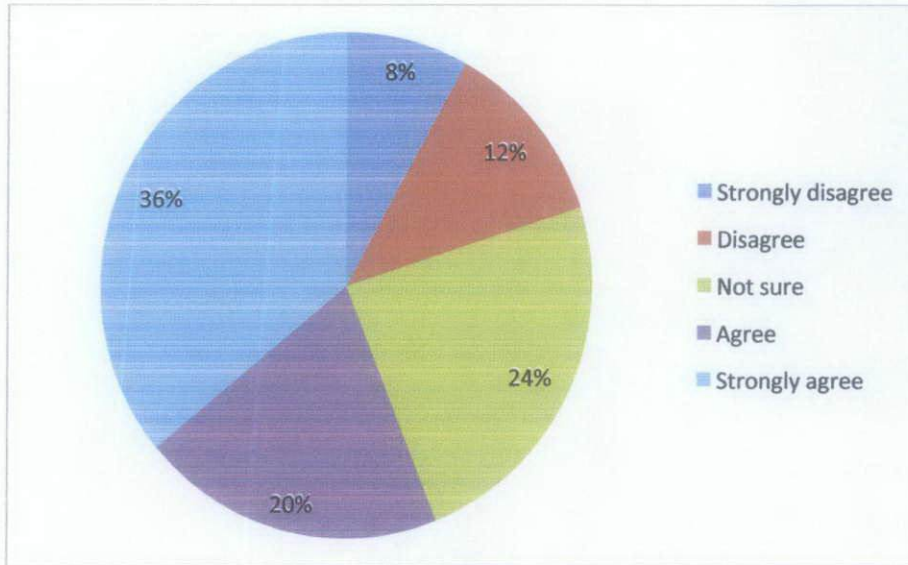


Figure 4.6: Question 4 Parent's Responses Pie Chart

Majority of the respondents give positive answer (56%), meanwhile 24% of the respondents choose not sure. A small percentage which recorded 20% of the respondents provides disagreement to this statement.

This indicates that most parents agree that their children have more interest when the learning process is using the technology available nowadays such as computer or smart phones. In this era, with the existence of modern technology, children also tend to be interested on using technology that is available.

4.4 Section 3 – Responses by Teachers

- a) What is the suitable age for the children to learn on the basic of reading Al-Quran?

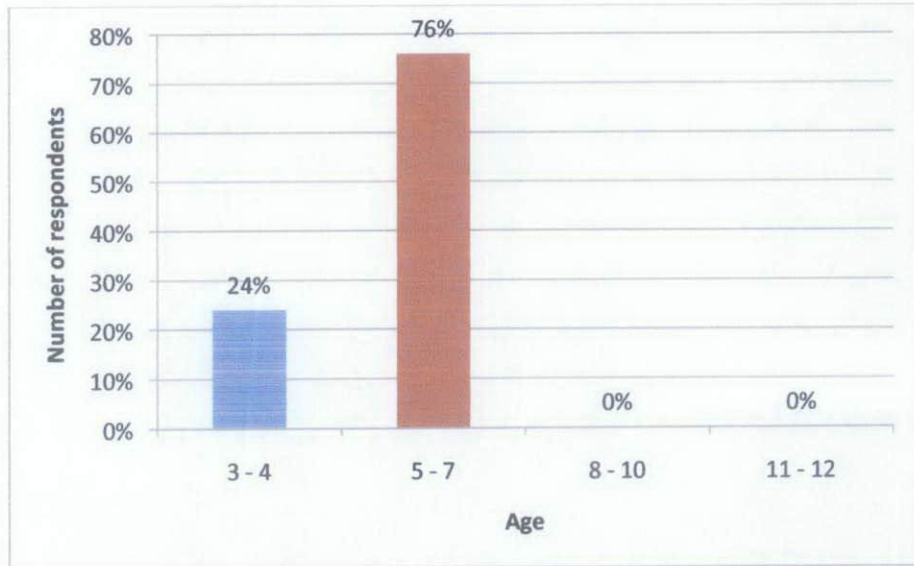


Figure 4.7: Question 1 Teacher's Responses Column Chart

For this statement, the respondents agree that the suitable age is at the early age of children. 76% of respondents agree that 5 to 7 years old is the most suitable age to learn the basic and other 24% agree on children aged 3 to 4 years old.

Children nowadays tend to catch faster on what they had been taught. By using the right way or method, the children will not face any problem to master the basic of reading Al-Quran at early age. It is also because the effort of the children's parents itself that want their children to get the knowledge at early age as possible as they know how valuable knowledge is.

- b) What method do you think is the most suitable to be used in process of teaching basic of reading Al-Quran?

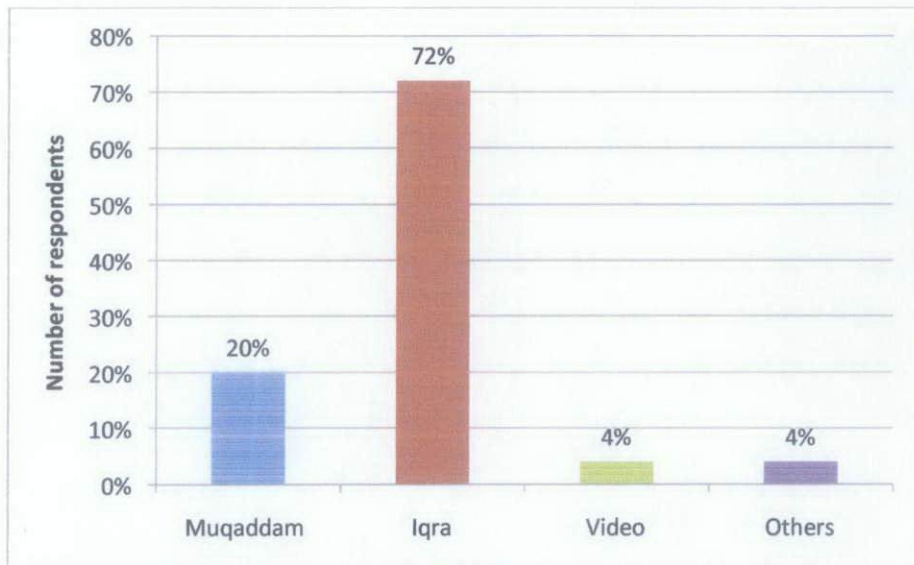


Figure 4.8: Question 2 Teacher's Responses Column Chart

72% of the respondents agree that Iqra is the most suitable to be used followed by the used of 'Muqqadam' which recorded a percentage of 20%. 4% of the respondents did also agree that video can be used in the learning process.

Iqra is the most widely used because of it does have many advantages such as easy, effective and many more when compared to other medium. Muqaddam is also a book that teaches the basic of reading but most of the children will learn IQRA first before using it.

c) Do you think the conventional way of using Iqra book is interesting enough?

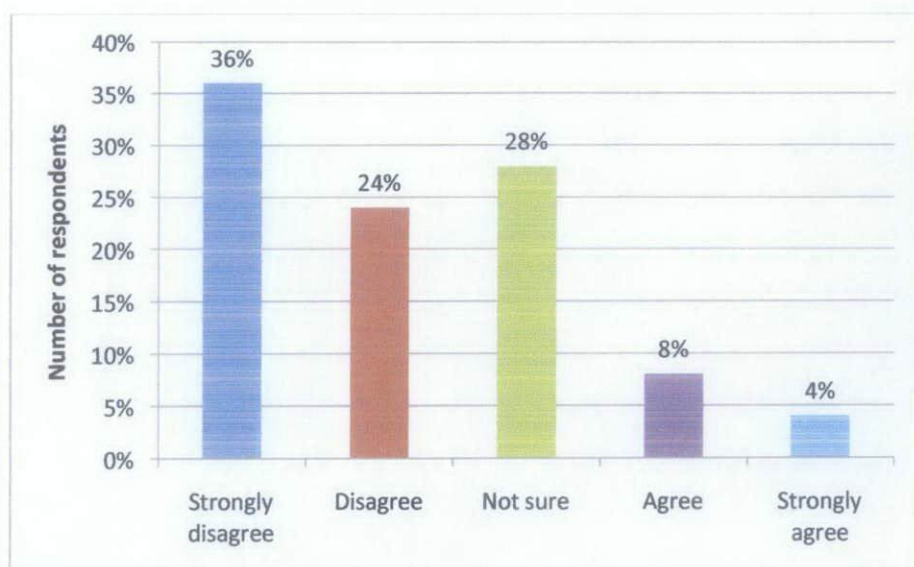


Figure 4.9: Question 3 Teacher's Responses Column Chart

A large number of respondents (60%) are in disagreement with this statement, compared with 12% who disagree. However, a significant portion of responses were not sure. (28%)

Many respondents disagreed with this statement and this may probably due to the characteristic of the book itself. The book does not having the interactivity factor and in the book it only consist of words only. But, it is the fault of the book itself. Teachers also need to play their part in making the learning process as interesting as possible.

d) Do you agree that learning from courseware / system can attract the children more than books?

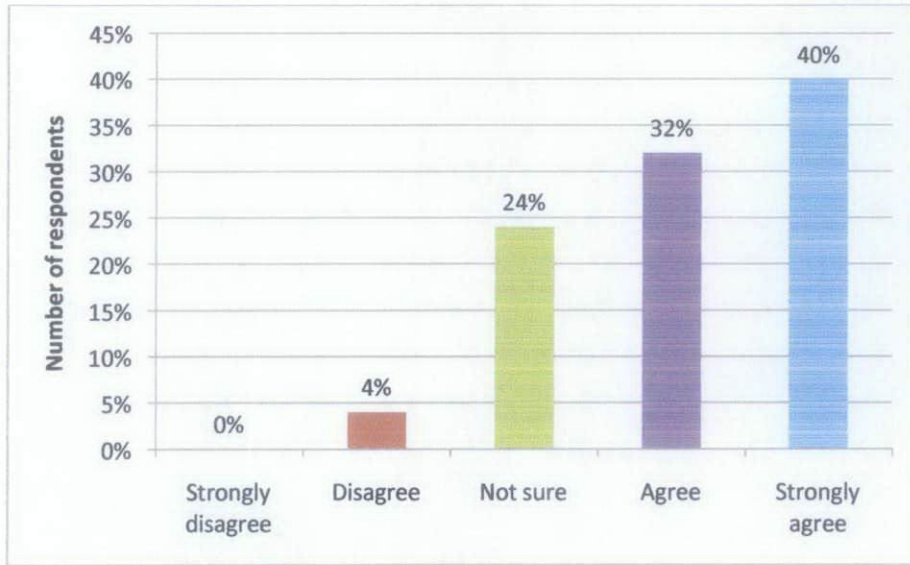


Figure 4.10: Question 4 Teacher's Responses Column Chart

A huge number of respondents agree with this statement which recorded a massive percentage of 72% followed by 24% provide their responses as not sure. 4% of disagreement is also recorded for this statement.

A high number of respondents reacted positively, which would indicate that the attractiveness components need to be implemented to the current method. It also shows that teachers are looking forward the idea of using courseware / system in this process of teaching.

e) Do you agree that Malay children have problem in understanding English?

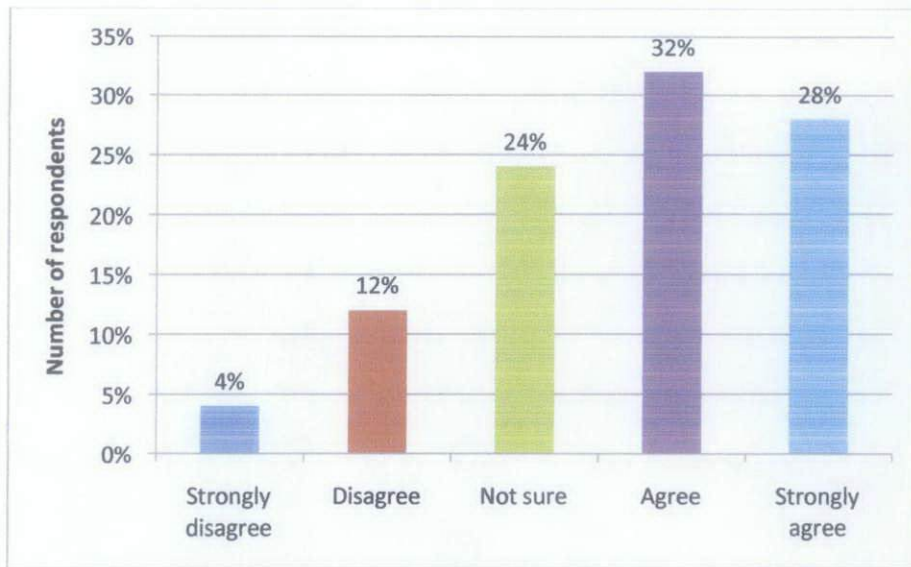


Figure 4.11: Question 5 Teacher's Responses Column Chart

60% of the respondents reacted positively to this statements while only 16% of the respondents disagreed. Though, there are also respondents that come out with the answer of not sure. (24%)

Respondent's positive responses show that the children need to improve their English. With the help of this courseware being available in English language, it will probably help the children to improve and enrich their understanding in English.

4.5 System Requirements

Based on the result of the questionnaire and research that had been done, the general requirements that need to be included in the courseware are stated as below:

- a) Easy of navigation.
- b) Layout of the courseware need to be consistent.
- c) Interface need to be attractive, bright and colourful.
- d) Question / tutorial need to be done frequently in the courseware to ensure that user is learning.
- e) Animation and other media should be suitable and appropriate for the user's learning environment.

4.6 Prototype



Figure 4.12: Homepage for IQRA Babysteps

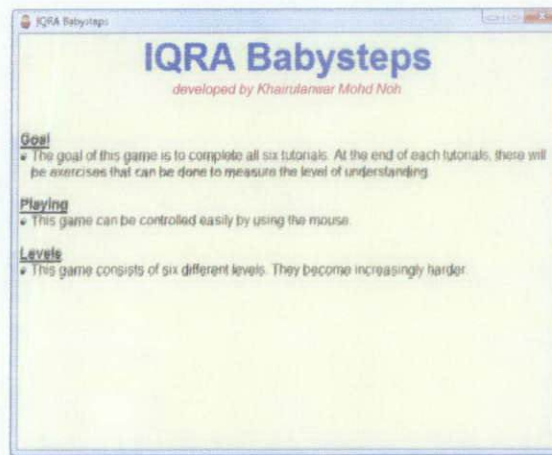


Figure 4.13: Information page for users

This is the main page of this courseware. The main page had been developed in a colourful and bright environment so that it can attract users. Attractive song is also being played in this main page so that it will create a more attractive environment.



Figure 4.14: Different level of difficulties available

Above are the pages that provide selections of level that can be made by the user based on their level of knowledge. There are three available levels that can be chosen which are beginner, intermediate and advance. All levels are differs based on the difficulty of each module.

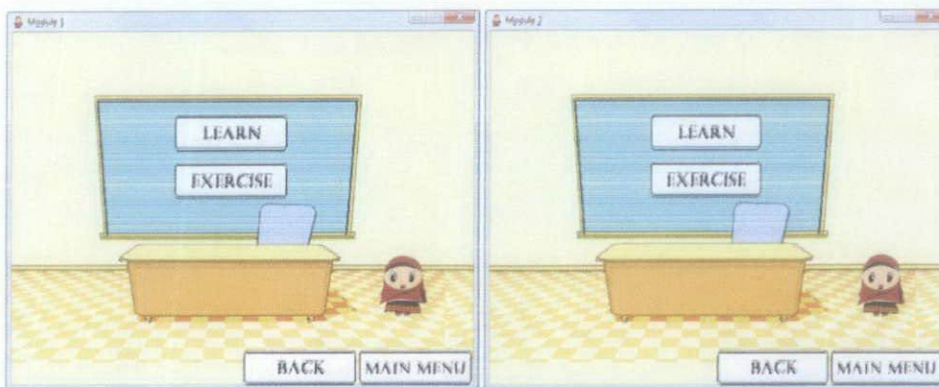


Figure 4.15: Activities that can be chosen

Shown above are the screenshots after users had chosen their preferred level of difficulty. After the level of difficulty had been chosen by the user, each module will provide two activities for the user which are learn and exercise activities.



Figure 4.16: The tutorials available to be learn for beginners

Shown above are the tutorials available for users to learn the basic of reading Al-Quran. These tutorials are provided for beginners as it had the lowest level of difficulty. In these tutorials, it will need the users to click in order to know how the word is being pronounced. This learning activity will need the users to click which will need users to involve in a more interactive way of learning.



Figure 4.17: The exercises available to be completed for beginners

Figure 4.17 are the screenshots of the exercises available after the user had completed their tutorials. These tutorials are vital as it will show the level of understanding of the user itself.

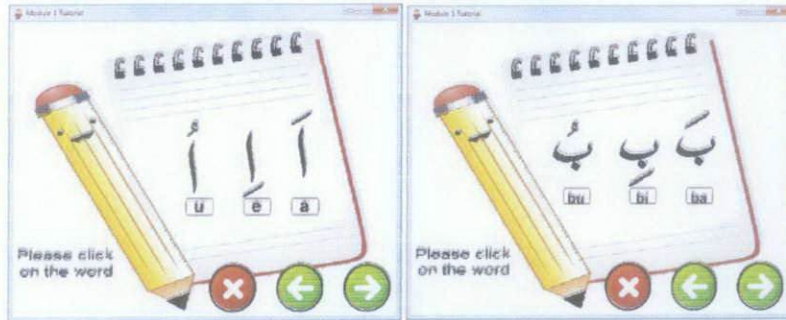


Figure 4.18: Tutorials in IQRA 1



Figure 4.19: Tutorials in IQRA 2

Shown above are the tutorials in IQRA 1 and 2 available for the users. Each of the modules will differ by their own level of difficulty. Both of these tutorials are provided for the users that had completed their beginner level tutorials. Each tutorial will become harder and harder in order to improve users level of knowledge.

4.7 Experimentation

After developing the system, a test that had been conducted which was called as user satisfaction test. This test will relate to the user's satisfaction towards elements in the systems itself such as system interfaces, systems problems and defects.

Elements	Rating	Remarks
Application installation	5	The installation of the courseware is easy.
Interfaces	4	The interfaces can be improved in future works.
Functionality	4	Other new functionalities could be added to the system in the future.
Time to run	5	The courseware does not take long time to run.
Choices of colour	4	The colour could be varied and more attractive in the future.
Icons used	4	There should be more icons with pictures used in future.

Table 4.1: Usability Testing

1 = Very dissatisfied

2 = Somewhat dissatisfied

3 = Neither satisfied nor dissatisfied

4 = Somewhat satisfied

5 = Very satisfied

Application Installation:

This element covers on the aspects of how easy was the courseware to be installed in any computer.

Interfaces:

These elements of interfaces cover User Interfaces (UI) aspects of the courseware such as the attractiveness of the system interfaces.

Functionality:

This aspect test on all of the functionalities provided in the courseware whether it meets the user satisfaction or not.

Time to run:

This aspect of testing focuses on the time taken for the application to run on any computer and how long does it takes to launch the courseware.

Choices of colour:

This is one of the aspect under User Interfaces (UI) element which it test whether the choices of colour for this courseware meets the user satisfactory level.

Icon used:

This element gathers the date from user whether the icon used (e.g. button, drop down, list, checkbox etc.) meet the satisfaction of user.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Studied had been done by most of people in the world in order to find out and prove the importance and effectiveness of implementing multimedia into learning process. From assessing the cognitive aspects of learning to determining the learning capability of student exposed to a technology-enabled learning environment, these studies had shown that multimedia learning method are quickly being approved and implemented into teaching and learning tools.

Research had shown that multimedia learning will be having a lot of advantages which each of these advantages need to be use effectively and efficiently, so that the entire user will be able to maximize the benefit of this multimedia learning. Nevertheless, the usage of multimedia learning should be used wisely as it will not provide its advantages if it being used the wrong way.

The existence of potential or further development and improvement will always be available as to create something that totally perfect is very difficult and sometimes it can become impossible to create a perfect product. It is hoped that, in the event that this project is allowed to take on a new life in future, more focus be extended to develop better animations in the courseware. With the improvement on the animation, it will be able to hook and maintain the interest of the student more.

The development of this Interactive IQRA Learning System will meet the objective which is to attract and maintain the interest of the user. Through meeting up with the objective, it is hoped that it will allow the users to improve their knowledge and understanding.

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APPENDIX 1 – Project Gantt chart

FYP 1

No.	Detail	Week												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Title Selection / Proposal													
2	Confirmation of Proposed Title			X										
3	Preparation of Extended Proposal													
4	Extended Proposal Submission						X							
5	Preparation for Proposal Defense													
6	Proposal Defense and Progress Evaluation									X				
7	Preparation of Interim Report													
8	Interim Report Submission											X		
9	Technical Report													
10	Final Submission													X

Legend:



Progress



Project Milestone

FYP 2

FYP 2		Sep'11		Oct'11			Nov'11				Dec'11				Jan'11			
ID	Task Name	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17
1	FINAL YEAR PROJECT																	
2	Visit to selected schools																	
3	Project Development																	
4	Progress Report 1																	
5	Project Development																	
6	Progress Report 2																	
7	FTV Seminar																	
8	Visit to selected schools																	
9	Project Development																	
10	Poster Exhibition																	
11	Project Implementation																	
12	Dissertation Submission (Soft Bound)																	
13	Oral Presentation																	
14	Dissertation Submission (Hard Bound)																	

Progress

Deadline / milestone