MEDICAL ADAPTIVE WEB BASED TUTORING: AUDIOLOGY

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ABSTRACT

Medical Adaptive Web Based Tutoring: Audiology was develop for medical student enjoying using computers for learning. The main purpose of this Adaptive Web Based Tutoring was developed to facilitate medical students learn more efficient in audiology syllabus. This system is developed using waterfall model approach ADDIE model. Besides that, this project using Adobe Dreamweaver to develop this web tutoring. The adaptation was based on student knowledge. There are three level quiz where students necessary to pass all the level. If student not to pass the level, they can try again. Futhermore, students can read notes slides and explore information about audiology. Students must register information before login into the system.

ABSTRAK

Adaptif Perubatan berasaskan web tunjuk ajar: Pendengaran adalah membangunkan untuk pelajar perubatan menikmati menggunakan komputer untuk pembelajaran. Tujuan utama Adaptif web tunjuk ajar ini telah dibangunkan untuk memudahkan pelajar perubatan belajar lebih cekap dalam sukatan pelajaran audiologi. Sistem ini dibangunkan dengan menggunakan pendekatan model ADDIE. Selain itu, projek ini menggunakan Adobe Dreamweaver untuk membangunkan tunjuk ajar web ini. Penyesuaian ini adalah berdasarkan pengetahuan pelajar. Terdapat tiga tahap kuiz di mana pelajar perlu untuk lulus semua peringkat. Jika pelajar tidak lulus peringkat, mereka boleh cuba lagi. Tambahan pula, pelajar boleh membaca nota slaid dan meneroka maklumat mengenai audiologi. Pelajar perlu mendaftar maklumat sebelum login ke dalam sistem.

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PART 1

INTRODUCTION

1.0 Introduction

The tutoring was implemented as a teaching-learning strategy to enhance learning and teaching at anywhere and anytime. Computer lessons are interactive and actively involve students in the learning process. Basically using a traditional teaching, the medical student have a limits of their study. As a solution Medical Adaptive Web Based Tutoring will improve student learner more effective and efficiency. The web based contains a comprehensive learning system including tutorial, simulation, and problem solving components. With this web based tutoring, the students can learn basic concepts about audiology syllabus.

Multimedia in education seems to be an intersting new way in the learning process. Nowadays technology of web-based application has many advantages to increase and improve our productivity of organization in the word. Reading book system is the old material study, that's mean the individual who gives a teaching at some person or the group lecture or some instruction where need to tutor. Doing that, the students can help themselves from that web based tutoring system, our guide them for get the point of study, such as student will become an independent leaner thus they not always need a tutor. Medical Adaptive Web Based Tutoring : Audiology this material usually will use with a computer, that's means, the entire course or any subject used a web based.

This project is creating Medical Adaptive Web Based Tutoring about audiology syllabus for medical students. Even though we have reduced national study of hearing showed that approximately 16% of the populations have a significant hearing loss, indicating that working in this field is an important area of the National Health Service (NHS).

The purpose of this software is for medical student that have problem to learning, some student they still use old material such as books, another research. So this software is easier the medical student to study. Besides that, using old material for study, student only can learn in one place with limited time such as at library. With this software, easier for them to studying and learning at anywhere and anytime they like.

Audiology is a rapidly developing field, and the need for audio logical services is clear. Healthcare science staffs specializing in audiology, work with patients of all ages as part of a multidisciplinary team of professionals. They identify and assess hearing and balance function and their associated disorders, recommending and providing appropriate therapeutic rehabilitation and management. Web based tutoring may be considered one of the best inventions. Nowadays, web based tutoring may be easily accessed by anyone, and this was made possible by professionals or experienced people who wanted to help enhance the skills of others.

1.1 Problem Statement

Medical student have problem learning, their just collect information from different sources (Barrows 1996: 6). The medical student just gets the information from libraries, journal articles, data base and different texbooks. Medical Adaptive Web Based Tutoring usage is effective among field dependence student, for medical students, they have difficulty in hadling the Medical Adaptive Web Based Tutoring. The best multimedia control strategy based medicine in developing Medical Adaptive Web Based Tutoring for subjects at the university level. Common for lecturers to teach content dynamic nature of education and the visual and lecture method in tradition.

This tutoring system is more effective compare to the traditional tutoring. In traditionaltutoring, there are five roles undertaken, including class discussions, role-playing, case studies,question and answer sessions and assessment. All the activities is done manually and it maytakes a long times to finish everything. While, by using online web based tutoring, student is ableto do all those things in several time where they can have quiz and exercise online besides itprovide them with more interactive representations.

1.1.2 Background of study

This study are based from a few problems faced by the medical student that is how medical student improvement their learning of study about audiology, and consist tutorial, slide notes, quiz, question, problem solving and integrated learning system. Teaching and learning is always changing and development in line with the current demands in the national and global levels. Tutors are expected to assist medical student in learning Medical Adaptive Web Based Tutoring covered the syllabus of audiology.

1.1.3 Objective of study

There are several objective notified to achieve to build this Medical Adaptive Web Based Tutoring. These are:-

i) To develop objective web based tutoring system.

ii) To implement Adaptive technology in the web based tutoring.

iii) To test the Medical Adaptive Web Based Tutoring for medical students.

1.2 Review of previous work and relationship to current project

To develop the new system, the previous product or existing system is need with do a research, references, case study or other findings on that product. It is because to do a comparison in term hardware and software that has been used and also the presentation of existing system. So from that, makes the improvement for new system.

The system Medical Adaptive Web Based Tutoring is interactive learning for student experience. This system has an Adaptive system with a language interface. The important of this system is having a teaching material, problem solving, and notes. That will make a student have a experience learning using the multimedia technology, can explore the new self-explanation and they can feel comfortable with the multimedia learning environment.

Using the Medical Adaptive Web Based Tutoring, the medical student will more independent and more self-confident to having they courses, because that, the student not only depend on lecturer or teacher to learn their courses especially at audiology syllabus.

1.2 Current system and limitation

Nowadays, most of the web-based are not provide Adaptive Emotional Solving for internet user. Therefore, nobody knows when user experiencing emotional distress. In addition, users are not very comfortable with the website they visit which has many instructions to be followed and websites look very messy then it will make the internet users feel bored and depressed.

Besides that, is very hard to find the best way to solve the expression from the user. This is because different person have different way to solve the problem. Sometime, the solution that recommended to the internet users is not satisfactory and unable to solve the problem of user emotion. In fact, makes users feel resentful and they will be more emotionally disturbed than before. Lastly, that most of the Adaptive Emotional Solving have limitation because it's does not provide many solutions for emotional problems and only a few emotions are choose to be solved.

1.4 Terminology

Adaptive learning

Adaptive learning is an educational method which uses computers as interactive teaching devices. Computers adapt the presentation of educational material according to students' learning needs, as indicated by their responses to questions and tasks.

Knowledge level

The knowledge level rationalizes the agent's behavior, while the symbol level mechanizes the agent's behavior.

Effectiveness

Effectiveness is the capability of producting desired result. When something is deemed efective, it means it has an intended or expected outcome, or produces a deep, vivid impression.

1.5 Method of approach

ADDIE is an acronym for Analysis, Design, Development, Implementation, and Evaluation. This model guides user through the process of creating effective educational courses and materials for audience. While there are variations of this model in the industry, the concepts are the same. As a professional, this model is more than just an acronym.This ADDIE model consists of certain phase that is :

1. Analysis
2. Design
3. Development
4. Implementation
5. Evaluation

FIGURE 1.1 : ADDIE Model

1.6 Indication of scope and limitation of study

Scope of study

In this project web based tutoring, the target user is for a medical students. The software used are adobe dreamweaver . Furthermore, in the web based contain PHP is mainly focused on server-side scripting. The web based tutoring is very simple to used and many benefit how aware of the problems related to Audiology and solve the cause of the problem.

1.7 Outline of material

This project contains 3 parts only. Part 1 gives an overview of the study and includes introduction, problem statement, objectives, method of approach, and scope of study and outline of material. Part 2.1 until 2.3, reviews the previous research that was conducted in this area. This includes reviewing books and articles related this the subject of Medical Adaptive Web Based Tutoring and user requirement. The relevant books and reports from those researches will be and discussed in detail. Part 2.4, more at techniques used in perfoming this research and discusses the process flow of this study. 2.5 all about discusssion anlysis material such as hardware and software used in this project. 2.6 discuss about testing plan and result. Part 3 gives conclusion to conclude the all report.

PART 2

REPORT BODY

2.1 Introduction

This part will describe about literature review where it's related all of application. Have two phases in this chapter, for the first phases it will review about the system for the second phases, will provide the review, method and equipment. For the reference source should be taken from any information be related about audiology and that important material such as sources from notes, paper, book, articles and journals.

2.1.1 Introduction Adaptive Web based

Web-based application systems, as well as other complex hypermedia systems with a large variety of users, suffer from an inability to satisfy heterogeneous needs. A Web course presents the same static explanation of a concept to students with widely differing knowledge of the subject. A Web bookstore offers the same selection of bestsellers to customers with different reading preferences. A Web museum offers the same "guided tour" and the same narration to visitors with very different goals and interests. A remedy for the negative effects of the traditional "one-size-fits-all" approach is to enhance a system's ability to adapt its own behaviour to the goals, tasks, interests, and other features of individual users. Starting in the 1990s, many research teams began to investigate ways of modelling features of the users of hypermedia systems. This has led to a number of interesting adaptation techniques and Adaptive systems.

The goal of the tutorial is to present a comprehensive introduction into Adaptive Web-based systems for "Web-oriented" audience. It will cover the following issues: a brief review of Adaptive Web-based systems, a detailed description of several

efficient but easy-to-implement adaptation techniques, and a brief review of several experimental studies of Web-based Adaptive systems. Futhermore, the tutorial will be useful for researchers in the area of advanced Web-based systems as well as for practitioners who can benefit from making their Web-based systems Adaptive.

Web based tutoring may be considered one of the best inventions. Nowadays, web based tutoring may be easily accessed by anyone, and this was made possible by professionals or experienced people who wanted to help enhance the skills of others.

2.1.2 User requirement

This project is for medical student having they learn about audiology syllabus, Medical Adaptive Web Based Tutoring system using web based design on knowledge of medical student. There has a limited set term of question and their solution, to get detail user requirement the designer should have a question and answer with a user (medical student) to help them towards the correct solution. From that questioner, we can know what user really want for using this system, the tutoring of audiology teaches students learning by presenting a visual slide as a problem scenario and to classify the diseases such as audiology syllabus.

Doing a user requirement, developer needs to spend time with the user when they are using the current system. For this process has a multiple meetings that I have with a user, that client will be a medical student. In this meeting I have to get a user understand what Medical Adaptive Web Based Tutoring really do and what they want or need. After all user requirement have collected, I do some sketch of system like fake interface of web page and user what come up with.

A requirement document is the document or specification to do that system, in this document have all what a user want and really need, such as easy to they understand how to use that system follow their level at basic level, intermediate level or advance level. In the document have the current system, user characteristics, assumption of interface, any constrains, dependencies, functional requirement and non-functional requirement.

2.2 Flow Chart / Story board

In this process, will interpret all about how this project done. Besides that have a flow chart process or software process and storyboard for Medical Adaptive Web Based Tutoring using Dreamweaver for medical student Audiology syllabus. The first phase will show all the flow process and detail for doing this application.

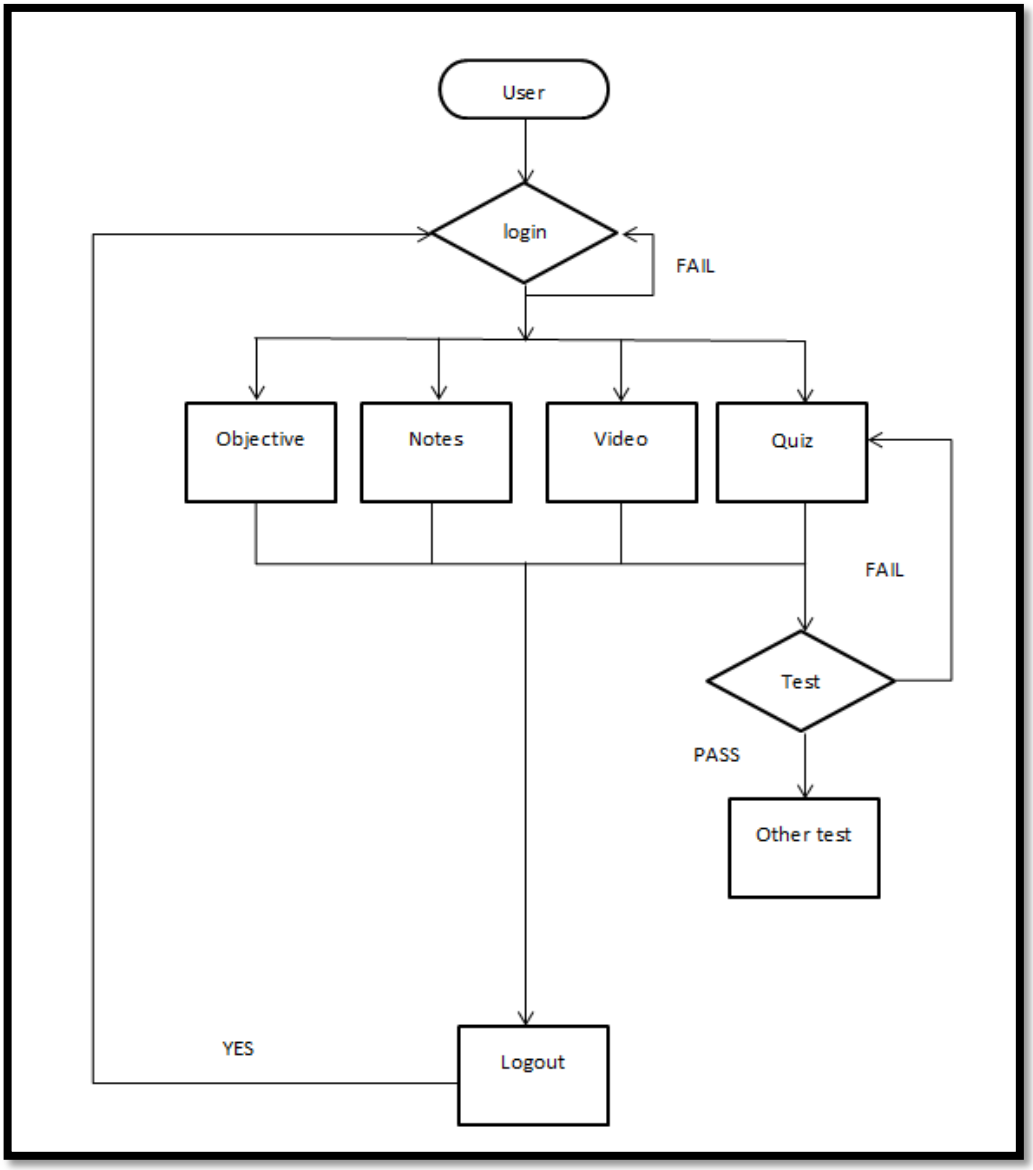

FIGURE 2.1 : Flow chart for overall project

2.2.1 Methodology

The methodology selection is ADDIE model phase, this process will start with the plannnig phase, analysis phase, design phase, development phase, implementation, and evaluation phase.

ADDIE model phase

This model consists of certain phase which are :

1. Analysis
2. Design
3. Development
4. Implementation
5. Evaluation

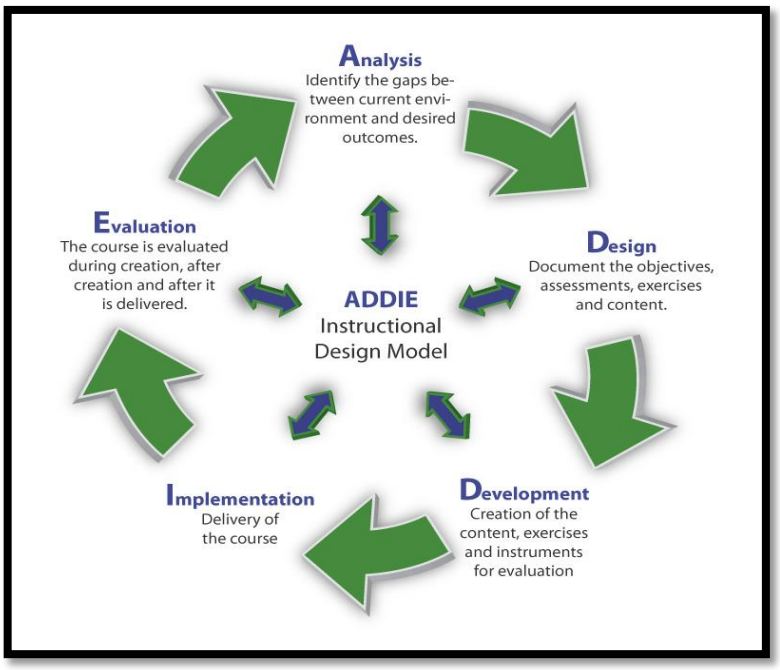

FIGURE 2.2 : ADDIE Model

1. **Analysis Phase**

In this phase, the interview had been answer by student at International Islamic University Malaysia (IIUM), campus Kuantan, Pahang, according the student at that university, this student used manually learning technique process. These courses also not used any web based tutoring in their teaching. Their use the textbook, notes only material for learning. It's still not enough in systematic learning.

2. **Design Phase**

The design is about flow of the web based tutoring. What interface, how that sketch interface. The sketch is content that will put at the web based tutoring. According the flow above is about how the user interact with the web based. First page in this web based have log in and user need to go at home page. After user register, all information will be save to log in. In this web based tutoring home page have six parts that is 'Main Menu', 'Objective', 'Notes', 'Quiz', 'Video', 'Logout'.

3. **Development Phase**

The web based will be developing use the software and hardware that was analysis. This web based will be develop refer to story board that had been sketch. The development phase also where instructional designers and developer create in the design phase. In design phase, the system will do based on user requirement (what user really want).

These activities will be done in this phase to the application by the shape of the note issues related to the design graphical user interfaces that navigation a syllabus and access. Design is the most important component to get user attraction, but it must to consider all perception including:

1. Size and font used
2. Color of text, interface, and background
3. Type of multimedia representation used

4. Implementation Phase

When the application was designed, the process of coding a system is in this implementation phase. This process required to encoded a coding to make sure the system will works properly. This phase will convert the physical system specification into working and what are using and document the work that has been done.

5. Evaluation Phase

During this phase will measurement of how well the performance solution achieved the objective to develop this web based tutoring.

2.2.2 Story board of project

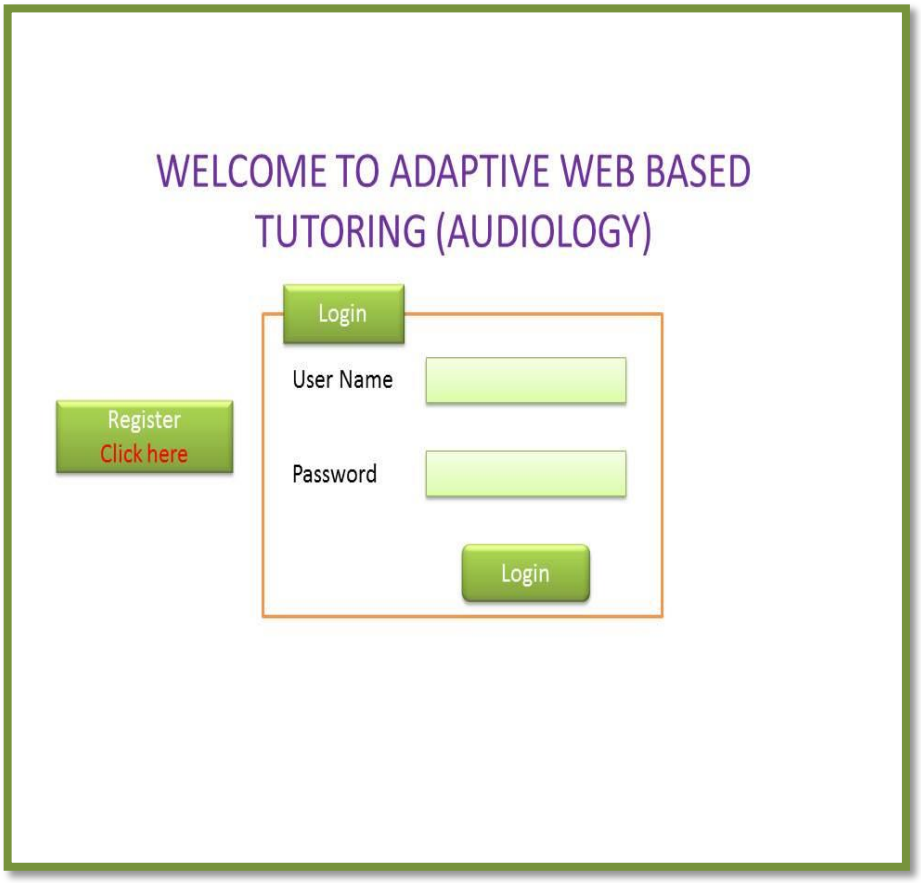

FIGURE 2.3 : Login page