INTERACTIVE LEARNING ENVIRONMENT FOR KIDS

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ABSTRACT

Multimedia play important roles in learning process. In traditional primary level learning process in Malaysia, multimedia is not fully implemented yet. So the teachers use traditional material to teach student and this affects the result of student. So, the new way to teach student may change the way of learning environment to become more interactive, collaborative and fun. Interactive learning environments give the new experience of students in classrooms by allowing them to explore information and to use what they discover to construct knowledge in their own words. Interactive Learning Environment using Multiple Mouse is a type of multimedia learning system that has been developed and aimed for the primary school children; those have a problem with their learning process and the collaborative in classroom

ABSTRAK

Multimedia memainkan peranan penting dalam proses pembelajaran. Dalam proses belajar tingkat dasar tradisional di Malaysia, multimedia tidak sepenuhnya dilaksanakan. Jadi guru menggunakan bahan tradisional untuk mengajar pelajar dan ini akan menjejaskan hasil pelajar. Jadi, cara baru untuk mengajar pelajar boleh mengubah cara persekitaran belajar menjadi lebih interaktif, kolaboratif dan menyenangkan. Persekitaran belajar interaktif memberikan pengalaman baru dari pelajar di kelas dengan membenarkan mereka untuk menggali informasi dan menggunakan apa yang mereka dapati untuk membina pengetahuan dalam kata-kata sendiri. Interaktif Persekitaran Belajar menggunakan tetikus gandaan merupakan jenis multimedia pembelajaran sistem yang telah dibangunkan dan ditujukan untuk anak- anak sekolah dasar , mereka punya masalah dengan proses belajar mereka dan gotong-royong dikelas.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Interactive learning is a kind of learning process which used multimedia as a platform to distribute the knowledge and information in an easy and interactive way. Nowadays, teachers usually use traditional method and material in their learning process. Traditional method includes some question and answer activities, written quiz using paper and use of whiteboard. Today, technologies and Information and Communication Technology (ICT) spread worldwide very fast and the use of computer in education have made it easier for users to access, deliver and store knowledge. Furthermore, the ability of ICT to deliver information quickly, correctly and attractively in the form of multimedia has also made learning more enjoyable. Many kind of learning method or material has been created by many developers. They compete each other in market to make and distributed the vey quality learning application.

The application developed called Interactive Learning Environment for Kids. This application based on Microsoft Multipoint technology. Microsoft Multi Point is a simple, powerful technology enabling multiple users to share a single PC using multiple mice [1]. By using this kind of software, this replaced from traditional method of learning process to a new method which is more interactive and fun. This application can be run only on the Microsoft Windows. Especially it suitable and attractive for kids in kinder garden and primary level. This helped shift the student from passive to active learner.

1.2 Problem Statement

Traditional education focuses on teaching, not learning. Not much effort has been made to effect a fundamental change to ensure effective learning. It seems like the instructors and the students are "comfortable" with the traditional classroom instruction. Children always listen, hear and do the activities in school that's the routine they must have faces every day.

The environment of traditional learning process is very common and many primary schools today still use it. When the learning process start, several children focus what their teacher teach and another do some others works. Imagine some of the challenges teachers face in classes with as many as 40 or more students; simply managing the classroom and making learning interesting are daunting tasks. In such large groups, students can become noisy and unruly, or they may even fall asleep.

In traditional learning way, the classroom use basic material like blackboard, whiteboard, chalk and marker. Teacher will asked children to write the answer in blackboard when the activities started. Every were written in blackboard, the student must do it in notebook. Instead, parents always bought the pencil color for their kids

every new school term start. That kind stationary is very important to kids in their learning process. Most every day have the activities with the pencil color. This is very wasteful and why do not we create software which is no need always bring pencil color along? Some activities they do not collaborate and manage teamwork. Every student gets one PC and do the activities and of course they will bored and not fun.

Some in rural areas, the school cannot afford to get one-student one-PC. In one classroom with 40 students only two or three PC. However, many schools simply can't afford more PCs. And, even with more machines, traditional PC set-ups do not allow for collaborative learning and teamwork.

In today's online era, the concept of a classroom extends beyond a walled room with desks and chairs and into the realm of cyber space. Computer screens are replacing the blackboard and keypads are replacing chalk and mice are replacing the movement of student in class. One of the solution to solve this kind of problem is by implement Multipoint technology in learning process. This will become more interactive and fun. A Microsoft Multipoint is a simple, powerful technology enabling multiple users to share a single PC using multiple mice and to learn technical skills in the process. Many developed countries were implement it.

Firstly, Jolencia Alberca Elementary School is a one of school which is located in Digos City, Davao; Philipines were implement multipoint technology in their learning process. Jolencia Alberca, which has a total student population of 290, had only two shared computers for the entire school. Because students often found the learning environment boring, their interest and motivation to learn suffered. Nor did this setting encourage collaboration among the children. Introduction of the Multi Point technology into the classroom helped address the problem of student engagement and participation [2].

Secondly, five schools in the Krasnodar sky region of Russia also implement this technology in their learning process. The teachers taught that by using Multi point, each student gets an opportunity to discover and create. They learn to interact in pairs to achieve a common goal. Ninety-nine percent of the students surveyed confirmed that their lessons were more interesting with the introduction of Multipoint Mouse. From a boring lecture and teacher-centered activity, the situation transformed instantly into a collaborative learner-focused activity [3].

Malaysia is not exempt in using Multi Point in learning environment. Selangor is one of the state in Malaysia were implement Multi Point in learning process. Aik Kuan Kindergarten which is located in Jenjarom. Using multiple computer mice that drive uniquely-designed on-screen Cursors. MultiPoint allows up to fifty students to simultaneously use and learn from educational software on a single computer. The technology helps to shift students from passive to active learning and the collaborative environment adds a whole new layer of value to the PC in the classroom [4].

The use of Multipoint in learning process is not widespread in Malaysia. I target at least every state have only 20 -30 kindergartens or primary schools implement this technology. Many benefit when using Multi Point in learning process. Besides, it can attract the children become active in class compare to the traditional learning method. In developed countries, they were implementing this technology in their education system.

This changed the style of environment learning process from traditional way to interactive way. Applications built on the Multipoint Mouse SDK can increase student learning comprehension through interactive methods. Multipoint Mouse applications can further a student's engagement, collaboration, interaction and overall cognitive and social skills within a classroom or lab environment. Student values like teamwork, patience, respect and collaboration also surfaced and was enhanced [1].

1.3 Aim and Objectives

The aim of this project is to develop an interactive learning environment in the classroom for primary school student (Standard One).

The objectives of this project are:

i. To develop and implement multipoint technology in learning environment using multiple mouse
ii. To develop the software for awakening student's interest in pursuing education
iii. To transform the learning process into a new way only using one PC and a mouse for each student for a whole class.

1.4 Scopes

The scopes of this project are:

i. This project is developing for student in primary school especially Standard One
ii. Initially this project will run on Microsoft Windows platform only.
iii. The main software to develop this project is Microsoft Multipoint SDK.
iv. This system will be used by multiple users to share a single PC using multiple mice.
v. The subject that implement in this system are Mathemathic, Science and Bahasa Melayu.
vi. Teacher or Instructor have the login privilege to access the question or create the quiz.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Learning is most efficient when it is interactive [5]. In learning process, the material that use is very important. The material that use can be either multimedia application, CD-ROM, web-based or anything. In Malaysia, multimedia technology is growing and widely use in education today. Multimedia is being used increasingly to provide computer-based instruction. Hence, there is no doubt that the production of multimedia courseware has become a popular trend.

Software developments have grown rapidly in recent years with the advancement of computer technology and emergence of multimedia technology, it can be said that approximately all the multimedia courseware available in Malaysia market is focusing on the major teaching subjects in curriculum.

There is, a need for computer and multimedia based teaching learning materials in education activities, which can help the environment of learning process become more interactive and fun.

Interactive Learning Environment by using multiple mice is a multimedia application system thatl used in learning process. The system was change from traditional learning method to the new interactive learning way. By create a new environment of learning process, the student performance will enhanced and helps keep the class attentive and interested in learning.

This application provides a user friendly multimedia interface that used by student. In classroom the environment were changed from using whiteboard to projector and marker pen to mouse and anything. Beside the teaching method also changed and was affected the student performance in class. The existing system that familiar with my system.

2.2 Basic principle

2.2.1 Multimedia

Multimedia play the important roles in learning process. Multimedia can be definition as media and content that uses a combination of different content forms. In traditional learning process, multimedia not fully implement yet. So the teachers use traditional material to teach student and this will affect the result of student. So, to make this way not happen, the new way to teach student is change the way of learning environment to become more interactive, collaborative and fun.

Interactive learning environments give the new experience of students in classrooms by allowing them to explore information and to use what they discover to construct knowledge in their own words [6].

2.2.2 Existing System

2.2.2.1 CITRA [7]

Citra is an interactive multimedia application that content moral values education using traditional Malay oral narratives. CITRA uses CD-ROM and the computer as an agent of dissemination [7].

It is a good tool that were creating for the teaching and learning of good moral values in an interactive learning environment. The main objective of this project is to create a multimedia tool that combines on-screen text, graphics, animation, audio and video in an enticing environment and thus enables the positive values and images of stories to be projected.

This system content four modules which is Storytelling World module, Enjoyable Reading World module, Word Enrichment Corner module, and Mind Test Land module.

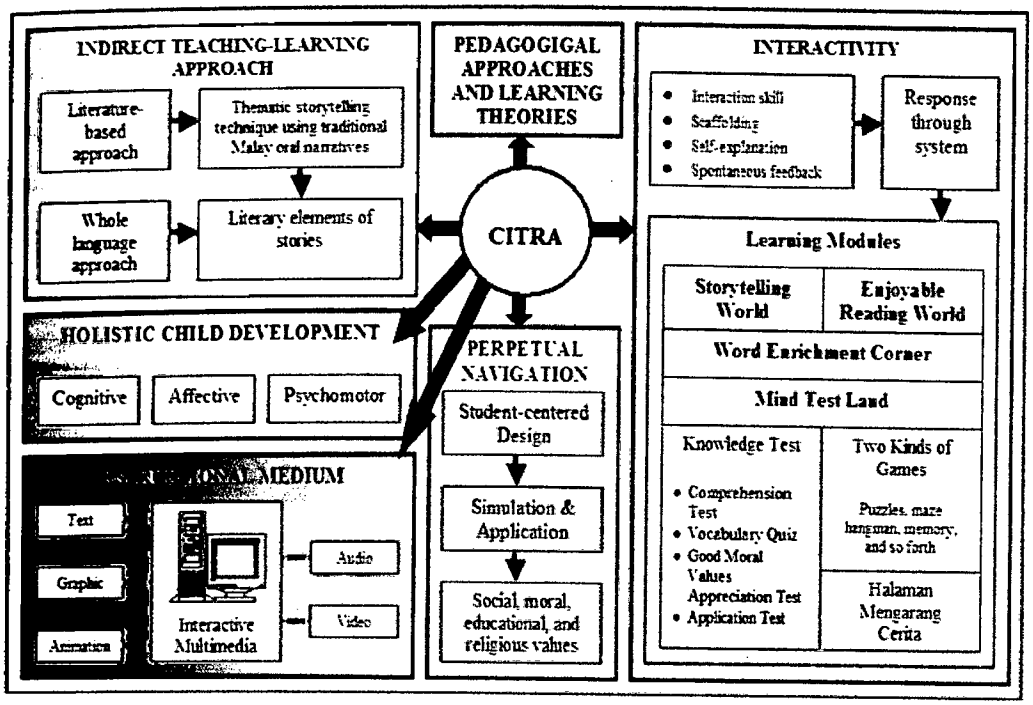

Figure 2.1: Show the Conceptual Framework of CITRA [7].

2.2.2.2 NEW EDUCATION BROADCAST SERVICES [6]

In Japan, Broadband Internet connections are becoming very common and popular, with the number of broadband subscribers exceeding 3.5million as of February 2002. School children are starting to access the Internet from their classrooms, and are using it to send information, exchange opinions and access search engines and video databases provided by broadcasting companies.

Broadcasting is characterized by its ability to send large quantities of data such as video and audio to large audiences simultaneously. NHK's broadcast network extends over the whole of Japan, and has delivered educational programs to schools nationwide for over 40 years.

This service supports learning by making the diverse information owned by a broadcast company accessible via the Internet along with regular broadcasts. It also enables a network- based forum for the exchange of opinions and provides announcements relating to program content, and therefore assists the learning process in various ways.

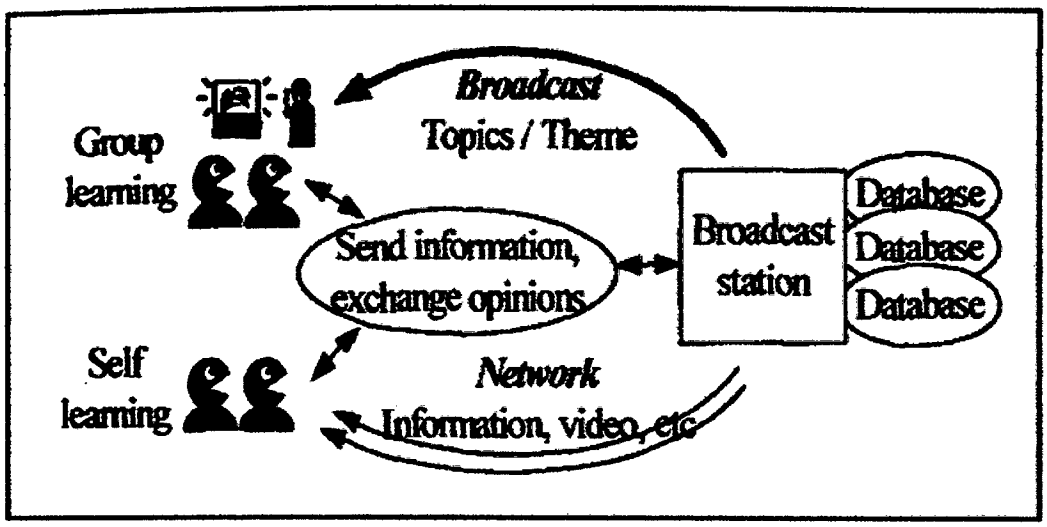

Figure 2.2: Show the concept of the new educational broadcast service [6].

In this system, information is provided in the form of an encyclopaedia. Students can retrieve and use information of interest to them from the large amount of information stored at the broadcasting station. This makes it possible to obtain diverse information related to the subject in question, and supports the studies of individual students by using network technology to complement the one-way nature of the broadcasting medium. In addition, the information retrieved by students can be combined with the results of their own activities and sent out to the community where opinions can be exchanged. As a result, this service provides an environment in which students are not only able to find out what they need to know, but can also learn how to use digital media such as the Internet [6].

2.2.2.3 INTEGRATING MULTIMEDIA-ENRICHED LEARNING OBJECTS [8, 9, 20]

Objects can serve many different activities, such as observing, carrying, creating and exchanging, which turns them into powerful learning mediators in our world. Object permanence and persistence are important cognitive concepts for children. While learning to differentiate between inside and outside, children use transitional objects, e.g. teddy bears or blankets [9]. Even these two simple examples underline the importance and the complexity of object-related learning.

Since its introduction in the mid-1990s, the term Learning Object (LO) has referred to all kinds of educational material, leading to a multitude of definitions and uses. Creating, aggregating and retrieving content is an essential part of computer-mediated learning, but learning processes are inextricably linked to the characteristics of the individual learners, the context and the chosen media. Thus, like any other object, a LO can be assimilated in many different ways, e.g. depending on its form, function and the derived meanings [8].

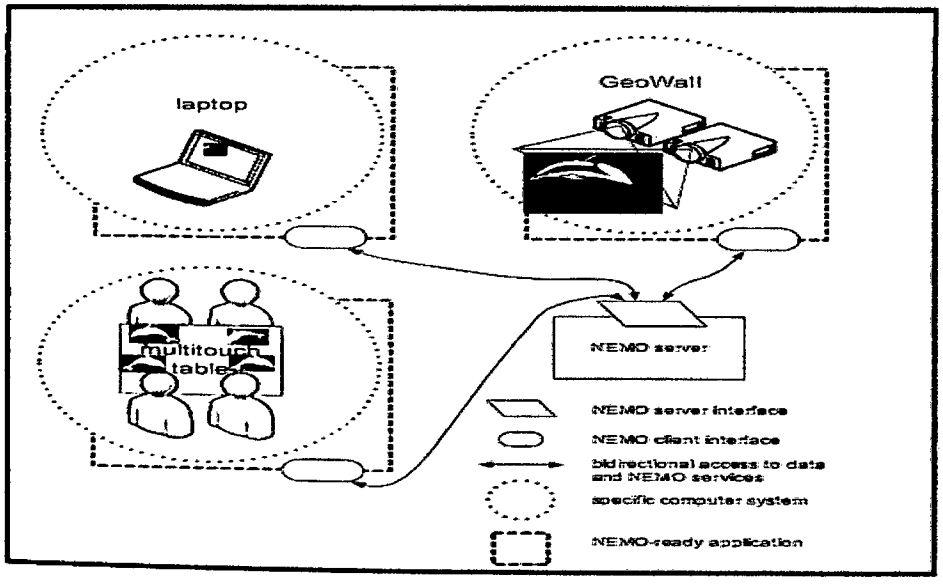

Figure 2.3: show how to access and use MELOs [8].

Figure 2.3 illustrates the use of a dolphin object on three different computer systems. The respective software applications make use of a unified interface to access services provided by the NEMO server. Since the interface is bidirectional, the server can also access data offered by the client application [20].

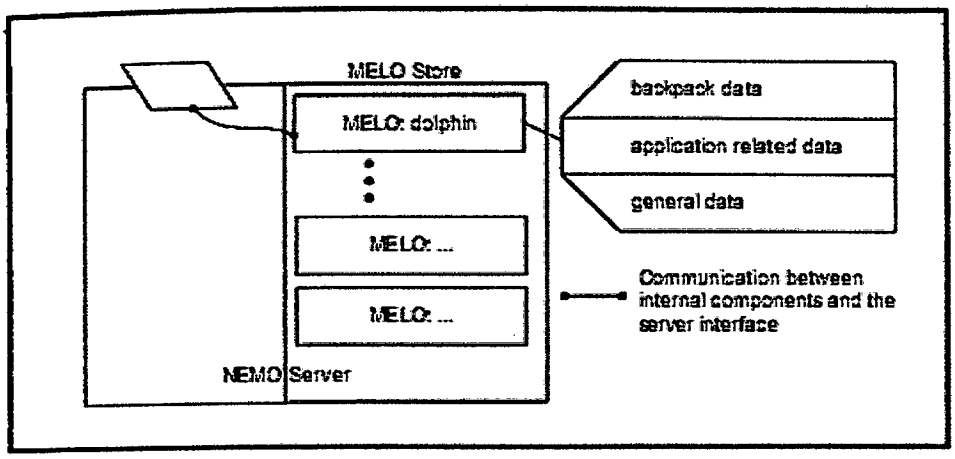

Figure 2.4: Show the Structure of NEMO Server [8].

2.2.2.3.1 A scenario for using MELOs

The exemplified scenario for project-oriented work on dolphins involves 4th graders, aged 9-11, at a local elementary school. The students have access to laptop computers, a multi touch table, a 3D presentation wall.

For each student a dolphin object is created in the system functioning as an exemplary MELO. Additionally, there is a dolphin object that belongs to the whole class and is used for presentations and usage instructions for the system. At the beginning of the learning unit, the teacher presents a virtual dolphin on the 3D projection screen. Basic facts about dolphins and related topics are discussed in the class. The dolphin can be rotated and its typical movements like breathing, jumping, or swimming can be animated.

Afterwards, the students use the NEMO system with a laptop computer connected to the Internet to research facts for their personal dolphin object: Where do dolphins live? What sounds do they make? After the personal MELOs have been enriched, they are pushed to the multi touch table and shown on a world map. The collected detailed information can be displayed on the map and sounds can be played. To test the transfer of dolphin-related knowledge, the teacher may link questions to the dolphin objects which the children can answer, e.g. with their mobile phones. In the end they can "store" their personal dolphin on their own mobile device (a kind of personal MELO wallet) to take it with them. Actually, they only store the access information and signature of their personal learning objects which resides on the server [8].

2.2.2.4 LEARNING SYSTEM BY USING FACE-MOUSE [10]

Distance learning is instructional delivery that does not require student and teacher to be physically located at the same site. Distance learning is also called a distance education, cyber classroom and online courses.