CHAPTER 1

INTRODUCTION

1.1   Introduction

Nowadays, the world is too dependent on machines and technologies in daily life. The technology has affected society and its surroundings in a number of ways. Various forms of technologies have been created to enable people to do any task or work, such as The Information Technology. The use of modern information technology in education helps students to form a creative and productive approach, which is sure to give them a lot of benefits for their future profession or a process of self-education. The advantages of the technology also very helpful for teachers and students to maximize their efforts in teaching and learning.

There are many ways to improve the field of education. For example, interactive courseware system. By this system, teachers are no longer to be the only reference sources in teaching and learning. It is able to be used by teachers and learners for different learning activities which involve specific computer tools and facilities.

The brain is the most complex organ in human body consist of external and internal part. In every part of structure in human brain involves different activities. Generally, there are five sense organs that involve in brain activities which is sight,

smell, taste, touch, and hearing. There is so much information about the human brain that we can study. However, there are problems that have been discovered which is most of the people is still using traditional methods to seeking information, difficulties to explore the brain directly, human brain has too many part to remember and understand, and paper waste.

The motivation of this project is to implement the 3D interactive courseware as the resources in teaching and learning. The aim of this courseware is to give information about the human brain to public, especially for those who in the education field. The information given will relate to the human brain structure, the functions, and human senses. This project also will develop a human brain in the 3D model.

1.2 Problem Statement

Several problem has been discovered that lead to the creation of this educational courseware. One of the problem is most of people especially the students are still using the traditional method to seeking information about the human brain. Usually, they only use books and materials from the internet. Uninteresting lessons in schools also can lead the students to boredom.

Besides, the brain is the most complex organ in the human body. The brain is divided into two parts which is internal and external brain. In every part of it has a few more other components. Plus, each component has a different function and a different name. It is too many parts of the brain for students to remember and understand. Of course, there will be students who are not interested to learn because it is too much for them. Therefore, the interactive courseware using the 3D model can be used as an alternative to attract them to learn.

Furthermore, most of people are not able to explore the structure of the human brain and its functions in detail. It is very difficult for them to get a chance to see it directly because it is so limited and privacy, especially when they are not a members in medical fields. What they can do is just by looking through the pictures and videos.

Millions of tons of paper every day produced for daily use such as documentation in the office and at school. Many trees have been cut down to produce paper. Unfortunately, the papermaking process is not a clean one. According to the U.S. Toxic Release Inventory report published by the U.S. Environmental Protection Agency (EPA), pulp and paper mills are among the worst polluters to air, water and land of any industry in the country. The Worldwatch Institute offers similar statistics for the rest of the world. Each year millions of pounds of highly toxic chemicals such as toluene, methanol, chlorine dioxide, hydrochloric acid and formaldehyde are released into the air and water from papermaking plants around the world. Therefore, the interactive courseware system at least can help to minimize the waste of paper.

1.3   Objective

i.   To study and collecting information about the human brain.
ii.   To develop educational courseware that includes Object2VR technique.
iii.   To test functionality of this courseware.

1.4 Scope

i.   The target users for 3D interactive courseware is medical students, physiology students, teachers, and any user who seeking information about the human brain. The 3D models, video animation and quiz are included in this courseware. Through this courseware, the user should be able to learn and understand about the structure and how the human brain works.
ii.   This courseware is developed as a stand-alone application which is does not require any special software other than the operating system itself to work.
iii.   The text of information about human brain will be in full English. The English language is the most widely used languages in the world which will allow users from all over the world to get the information about the human brain.
iv.   The activities of human brain will cover on three senses organs; sight, smell, and hearing.