

Universiti Teknologi MARA

**Educational Augmented Reality
Astronomy Mobile Application**

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ABSTRACT

Augmented Reality is known as AR is an interactive real-world environment that the element can be elevated by computer-generated or mobile perceptual information and knowledge, sometimes using multiple sensory modalities such as haptic, visual, somatosensory, olfactory and auditory. AR also is a technology that give user an experience to interact and explore the world of knowledge through manipulation of the virtual objects in real world and one of the variation of the Virtual Reality or VR. It can create a great potential to the user when develop and create the augmented reality. Usually traditional teaching method is implemented in most school and university in Malaysia. Almost every teachers and students had to get used by this teaching method. For the first problem, there is lack of creativity offered in this traditional teaching. By using AR, we can achieve and identify the requirements for a constructivist-based educational Augmented Reality mobile app. Another problem for traditional teaching is by using only text books and slide presentations in classes will make student easily bored during classes and disengaged outside of classes. So, the educational AR application was designed and developed to overcome this problem. Last but not least conventional teaching method that carried out today is less interactive and the learning process inside the classes is less active learning. Through AR mobile application that was developed for education, the effectiveness of the app can be tested either by students or teachers. This AR mobile application can enhance learning effectively with the elements of commitment, fun and active learning. Also by using this AR mobile application, the potential to increase their ability, practical skills and conceptual understanding is strong through active learning.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Innovation has turned out to be inserted in training and the outcomes demonstrates a positive effect on learning and instructing. According to Shapley et al. (2011), lessons that are supported with technology will lead to more ingenious forms of teaching and learning. This is because the use of technology involves true issues, current enlightening assets, reproductions of ideas, and correspondence with experts in the field. In addition, learning using technology is believed to complement the traditional forms of teaching and learning (Yasak et al., 2010).

1.1 Background of the Project

Astronomy literally means – “law of the stars” in Greek. Astronomy deals with studying and understanding of all the celestial bodies and the material universe beyond the earth’s atmosphere. It is concerned with the study of the universe, from the Sun and its family of planets, satellites, nebulae, asteroids, meteors, and comets, to the hundreds of billions of other stars that make up our galaxy, to the hundreds of billions of other galaxies in the universe. Astronomers explore the universe using interplanetary space crafts, orbiting observatories and ground-based telescopes.

Augmented reality is a view of physical, real-world environment that the element is “augmented” by the computer and it contain sensorial input such as sound, graphics, haptics, video, or any GPS data. Augmented reality use the real world environment and put the news information on the top of it. Augmented reality come from virtual reality that is created by “Father of Virtual Reality”, Morton Heilig. He created Sensorama Stimulator which is called an “experience theater” on August 28, 1962. Then the “Father of Graphics”, Ivan Sutherland invented the first augmented reality head-mounted display system.