SOLAR SYSTEM (EARTH) : AUGMENTED REALITY (AR) LEARNING MEDIA

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SYSTEM SOLAR (EARTH) : AUGMENTED REALITY (AR) LEARNING MEDIA

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This report is submitted in partial fullfillment of requirements for the Bachelor of Computer Science (Media Interactive)

FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI
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2016

DECLARATION

I hereby declare that this project report entitled

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is written by me and is my own effort and that no part has been plagiarized without citations.

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I hereby declare that I have read this project report and found

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DEDICATION

This final project is dedicated to my beloved paerents for their endless support and help when I need it, always pray the best for me and give lots of useful advices in process of develop this project.

To my supervisor who has guided, give me a lot of supports and always be patient with mie while making this progress for this project, En. Ibrahim bin Ahmad (UteM).

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Thank you.

ABSTRACT

The solar system is a system that involves seven planets of the galaxy. This chapter of science subject is taught since primary school. Education nowadays is starting to shift toward education involving technology. Thus, this project generated through a combination of education and augmented reality technology. Augmented reality is a new technology involving 3D models. Through this technology approach, children's interest in a subject that will increase because it has become commonplace nature, children love to explore something baru.Projek involves the use of a book and a cell phone. There are several chapters that touch and that the focus of the chapter is a section of the earth. This project was developed using Autodesk Maya, Unity, and Vuforia. By developing this application, studies have found that children are more productive and better understand what they learn. In addition, children can enjoy A Fun in their learning sessions. However, these applications still require improvements such as the use of audio.

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ABSTRAK

Sistem solar merupakan sebuah sistem galaksi yang melibatkan 7 planet. Bab sains ini diajarkan semenjak alam sekolah rendah lagi. Pendidikan Malaysia pada masa kini sudah mula beralih ke arah pendidikan yang melibatkan teknologi. Justeru, projek ini dihasilkan melalui gabungan pendidikan dan teknologi augmented reality. Augmented reality merupakan salah satu teknologi baru yang melibatkan model 3D . Melalui pendekatan teknologi ini, minat kanak-kanak pada sesuatu subjek itu akan bertambah kerana sudah menjadi lumrah alam, kanak suka meneroka sesuatu yang baru.Projek ini melibatkan penggunaan buku dan telefon bimbit. Terdapat beberapa bab yang disentuh dan bab yang menjadi tumpuan adalah keratan bumi. Projek ini dibangunkan dengan menggunakan Maya Autodesk, Unity, dan Vuforia. Dengan membangunkan aplikasi ini, kajian mendapati bahawa kanak-kanak lebih produktif dan lebih memahami apa yang mereka pelajari. Di samping itu, kanak-kanak dapat menikmati keseronakan dalam sesi pembelajaran mereka. Walau bagaimanapun, aplikasi ini masih memerlukan penambahbaikan seperti penggunaan audio.

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CHAPTER 1

INTRODUCTION

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1.1 Introduction

These days, innovation has turned into an indispensable piece of individuals every day life. Individuals are living in a general public which is called "mechanically humanized" society. Everything in our life, individuals need innovation to do what they need. We can say that living without innovation resemble living without air in this specialized universe of today. We can see all phase of age need technology to experience their very own life. The a great many people as per phase of age that truly require innovation for their life is adolescent. Today we can not discover even single youthful child without utilizing the accessible innovation to them. Innovation made us need it and we can not envision an existence without utilizing technology as a part of it. Thus, technology assume a noteworthy part in our live.

The world has changed stage. We are currently in the realm of data innovation. Nobody can deny that reality. Cell telephones have turned into a need in today. PCs are as of now claimed by the greater part of the houses. This effect and suggestions to all

gatherings, including kids. Kids are currently more progressed than youngsters before. Different contraptions have been investigated and they know how to utilize it. This is on account of they have been naturally introduced to a world that is encountering a blast of innovation today.

Research the world over shows innovation can help youthful children for their learning procedure. A report arranged by the National Institute of Multimedida Education in Japan demonstrate that expanding the introduction of understudies through innovation idea have a huge and positive effect about understudy execution in arithmetic, science and social training.

The utilizing of innovation ought to be merged and consolidated with a typical learning environment and use as an alternative to help youthful children learn. Innovation ought to be utilized as an approach to help the current instructive instead of supplant it. Along these lines PC must be consolidate in the act of early adolescence physical, practical and theory. Meaning theory here is to meet the objectives and reasons for use.

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What is Augmented Reality? Expanded the truth is an innovation that permits a perspective of this present reality physical increased reality with the picture produced virtual 3D, there is a Virtual Reality framework in which this present reality that unions the virtual environment and scientists from the US and Japan has taken a main position in this innovation since the 1990s.

‘Solar System (Earth) : Augmented Reality (AR) Learning Media’ is an application that created to assist elementary school understudy with learning around one of the planet in our framework sun based, Earth. These days, understudies find out about Earth utilizing reading material which is contain by pictures and content.

The thought was executing a few sight and sound components into the reading material or learning book. Thusly can enhance the fascination amid conveying the data to the understudy about the Earth. Enlarged Reality applications was chosen with a specific end goal to convey the sight and sound components on this learning book.

1.2 Problem Statement(s)

Learning in the classroom nowadays is based on textbooks. The textbook is a book that based on the contents of text and image only as their medium of information. Some students easy to understand the information that come out from the text and image but most students hard to understand and memorize that. There are many subjects that require reading and understanding. Among the subjects is Science in chapter of universe.From the analysis at the existing learning media, there are several problems have been detected. The problems that been faced when using text book/learning book is textbook give a lot of text information about Earth and student only memorize the information without understand the real information of the contain that they learn. In addition**,** Image from the text book/learning book is quite boring to be understand. Nowadays, student like to see something that can be animate. Lastly, text book/learning book only provides two dimensional (2D) image and words and did not provides any interactivity that will make students want to learn about the subject.

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1.3 Objective(s)

In order to ensure the project work properly, the objective of the project must stated clearly. The objectives of this project are :

a) To design an application that can deliver the information and interactivity to student by adding virtual environment.

b) To study whether augmented reality application can be used in learning process to improve the effectiveness on delivering information for students.

c) To test the implementation of augmented reality in text book/ learning book is better that the existing text book/learning book.

1.4 Scope

a) Target User

The target user for this application is the primary school student to make they understand one of the chapters in Science subject.

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b) Contents / Modules

An Earth is selected and created by using 3D compositing software. Then a learning book will be created and the image at the book will be the target for the augmented reality application. A modeled 3D Earth will appear at the tablet's screen when the application the target image. This application is a stand alone application that runs using android.

1.5 Project Significance

This application will help the primary school student to understand more about the earth and the part of it. Additional interactions through this application will improve the attractive of the existing text book/learning book. So, the attraction from the student about this subject can be improved when using this application. As the results, the application will make teacher to teach their students about the earth.

1.6 Conclusion

At the conclusion, this application gives more attractive information to student. This chapter explains about the project overview, problem statements, objectives, scope, project significance and project significance for 'Solar System (Earth) : Augmented Reality (AR) Learning Media'. This chapter states the overall understanding of this project. The next chapter will discuss the Literature Review and Project Methodology for this application.

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CHAPTER 2

LITERATURE REVIEW AND PROJECT METHODOLOGY

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2.1 Introduction

This section will depict about the writing survey and venture technique. The assets were collected from manual, printed source and web source. All the data about this application idea will be concentrated on. The data has helped in grow new and better application meets with every one of the necessities.

Data on the writing audit is gathered for this application task is gathered from examination paper and sites on the web. This application will be burdens, advantages and other criteria have beem distinguished in light of this section survey.

In this part, the area of the task is distinguished. There will be correlation of existing framework that will be helped out through studies on references, looks into, and different discoveries that can be identified with this anticipate. In conclusion, venture methodology and the task necessity that chose for creating will be examined.

2.2 Domain

Current media learnings offerings fo understudy are exhausting and old. Along these lines, they absence of collaboration between the understudies and the learning media, for example, a book. What's more, to build up the intelligent media discovering that will be completely communicate with the clients, the area of the venture will be spotlight on media discovering that will utilize Augmented Reality (AR) as its execution.

Through AR framework, clients will see the picture in media learning as the continuous environment that will be expanded with 3D representation. To make a legitimate adjust between continuous environment and illustrations.

UTeM
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2.3 Existing System

Augmented Reality is an innovation that consolidates virtual items in two measurements and three measurements or in a genuine situation and anticipating a three-dimensional virtual articles progressively. Increased Reality can be connected to every one of the faculties, including hearing, touch, and smell.

Ronald T. Azuma (1997) characterizes as a mix of increased reality objects in virtual reality and genuine environment, run intelligently continuously, and there antarbenda mix in three measurements, specifically incorporated virtual items in this present reality. Blending the genuine and virtual articles is conceivable with the fitting innovation, intelligence is made conceivable through the gadget particular information gadgets, and a decent mix requires a successful following.

Taking into account research, augmented reality application in instruction industry as of now be created and utilized by a few training book organization, and association.

Three specimens of the application that utilizing increased reality has been chosen and looked at about the components.

i. FETCH! Lunch Rush

Figure 2.1: FETCH! Lunch Rush

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Fetch! Lunch Rush is the augmented reality application that had been create by WGBH Educational Productions. This application just can be utilized by Iphone, Ipod Touch and ipad as it were.

This application is a fun interpretation of essential expansion and subtraction drills. It can been played by four players, who will alternate at the same assignment. They will take care of math issues rapidly. What's more, the principle character for this application is companions of Ruff Ruffman from PBS

show Fetch. Amusement play can be quick when the number are close by or fiercely dynamic.

Figure 2.2: FETCH! Lunch Rush Image Target

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As player go through the levels, the math question will get to be harder. Players need to retain to work toward two digit subtraction issues. Player will elevated to new levels after the take care of the issues rapidly and precisely enough. This diversion is exceptionally helpful for basic math hone.