



JOJAPS

eISSN 2504-8457



Journal Online Jaringan Pengajian Seni Bina (JOJAPS)

Teaching and Learning Methods Using Augmented Reality Technology : Interactive Learning Camping Education Using Augmented Reality

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Abstract:

The purpose of this study aims to identify the level of awareness and perception of Tourism Management students on the use of 'augmented reality' (AR) technology of teaching and learning. The first objective is to find and gather about camp information. The second is to design content in booklets and AR applications and the third is to create augmented reality as an interactive teaching and learning tool in the topic of camping. Studies on camping in augmented reality have not yet been extensive and not yet well known. The content of augmented reality consists of the history of the camp, the types of tents, the anatomy of the tents, camping equipment, places of interest, procedures and safety, the selection of suitable camping sites and the layout of the campsite. There are 2 methods used to produce teaching and learning tools, namely producing booklets and producing naming methods using uniteAR software. The results show that 90% of students strongly agree that the content of teaching and learning delivery in AR is very easy to understand. 52% of respondents strongly agreed and 48% agreed AR as an educational tool in the subject of camping interactively in the DTM3023 Recreational Tourism (Terrestrial) Course. 52% strongly agree and 45% agree to study the subject of camping in the Augmented Reality application. Most students today prefer technological education. Respondents consisted of students giving a very positive perception of the use of AR in education, especially for the DTM3023 Recreational Tourism (Terrestrial) Course. Augmented reality is seen as an innovative, simple, interesting and effective medium of future teaching and learning media as well as providing a fun experience for students and lecturers when using this method.

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Keywords: *augmented reality, camping, teaching and learning*

Introduction

Nowadays, 'Technology Trends in Travel & Tourism' shows that travel companies are using various technologies to engage with customers at every stage of their journey. For example, Trivago, Kayak, Booking.com, Agoda and so forth. These apps were created to support the tourism industry and to ease tourist to reach the tourism destination and facilities. Education is a very powerful instrument for social change and transformation and innovative teaching practice is the only way to enhance the quality of our education. The problem which society faces are essentially the problems of educational institutions which are required to be innovative as they teach new skills and develop new insights and approaches towards the solving of social problems which the nation faces. Students must be empowered to be able to withstand the global challenges of the 21st century. There are two method used in this process which are the traditional and the modern. The back-to-basics traditional education method, also known as conventional education, is still widely used in schools. The old-fashioned way of teaching was all about recitation, for example students would sit in silence, while one student after another would take it in turns to recite the lesson, until each one had been called upon. The teacher would listen to each student's recitation, and they were expected to study and memorize the assignments. At the end of the module a written test or oral examination would be conducted; this process was called an Assignment Study Recitation Test.

The way in which traditional methods were taught ensured that students were rewarded for their efforts, used class periods efficiently and exercised clear rules to manage students' behavior. They were based on established customs that had been used successfully in schools over many years. The teachers communicated the knowledge and enforced standards of behavior.

Meanwhile, the modern way of teaching is more activity based, using questioning, explaining, demonstration and collaboration techniques. One modern method is spaced learning, this is when students are encouraged to quickly switch through activities, for example; providing 10 minutes of knowledge on a subject with a PowerPoint presentation and then having 15 minutes of sport. The aim of spaced learning is to achieve better grades, and it works! It is claimed that this is a more effective than teaching students by traditional methods for four hours, thus helping the brain cells to create connections that they need to remember knowledge. It also helps people relax.

The traditional "chalk and talk" method of teaching that's persisted for hundreds of years is now acquiring inferior results when compared with the more modern and revolutionary teaching methods that are available for use in schools today. Greater student interaction is encouraged, the boundaries of authority are being broken down, and a focus on enjoyment over grades is emphasized." (Sonia Jackson, 2017). Therefore, the study focusses on teaching and learning methods using augmented reality technology. This study about Interactive learning camping education using augmented reality only focus for polytechnic students DTM3023 Recreational Tourism : Terrestrial.

Problem Statement

Teaching and learning is a complex process that requires a variety of activities if a learning process is to succeed. These processes require a combination of activities between teachers and students. Teaching will fail if only one party is involved. Successful teaching will result in a change in student behavior. This process of behavior change is known as learning (JPPG, 2006). According to Joyce (2000), the term teaching is actually related to learning because teaching actually means teaching student to learn. Failure to produce an effective teaching and learning process can lead to many problems in the school. Poor teaching and learning process can lead to many problems in the school. Meor (2003) found that students are less interested in learning because of their style that does not meet their learning style. While Abu Hassan's (2003) study found that teacher do not give students the opportunity to actively participate in the teaching and learning process. Teachers are less likely to give students the opportunity to develop critical and creative thinking in their subjects. Teachers follow the procedures contained in the textbook regardless of the student's circumstances. Tan (1991) study also found that teachers tend to adopt traditional teaching approaches and strategies. Ghafar (2003) suggested that a teacher should use a variety of teaching methods and techniques to prevent students from feeling overwhelmed and to make teaching effective.

Objectives

1. To find and collect information on camping content.
2. To design content in booklet and AR application
3. To create augmented reality as an interactive teaching and learning tools in camping topic.

Methodology

This methodology discussed about the method on how to produce our augmented reality product using uniteAR software. UniteAr software usage are to ease the step in producing our Augmented Reality (AR) product as it is one of the easiest software of augmented reality publisher. Furthermore, the I.C.E.A.R augmented reality brochure; booklet is a learning cards, information & direct references to student and lecturer as one of teaching and learning tools. By adding little barcode symbols which is when viewed through a scanner could provide more information about camping. Augmented Reality based mobile applications show the digital information over layered on real world objects. Figure 1.1 flowchart produce booklet for Augmented Reality (AR). First steps, collecting information about augmented reality, camping. Next, analyze all the data collected to choose the best information to be put in the booklet for Augmented Reality (AR).

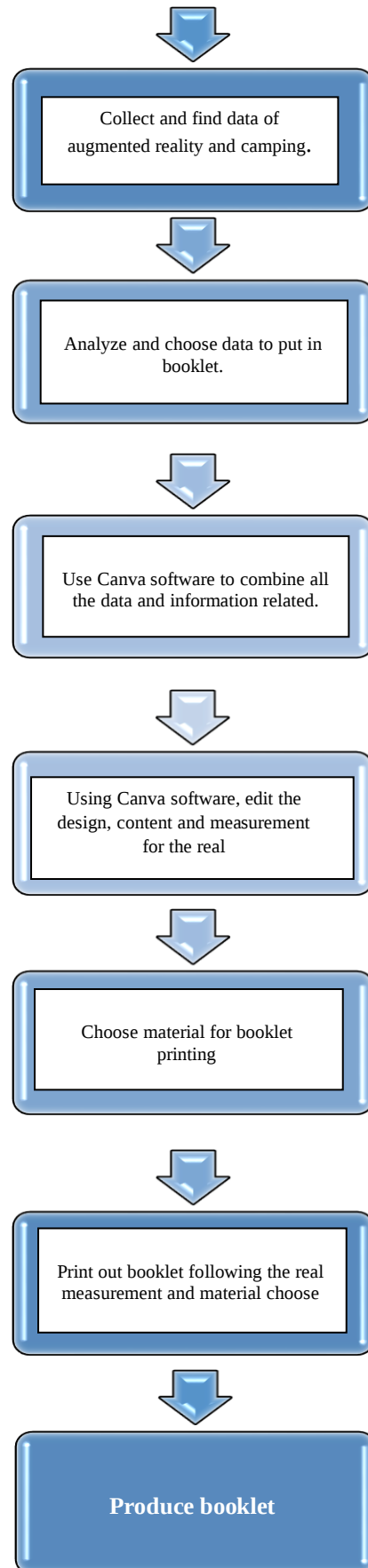


Figure 1.1: Flowchart produce booklet

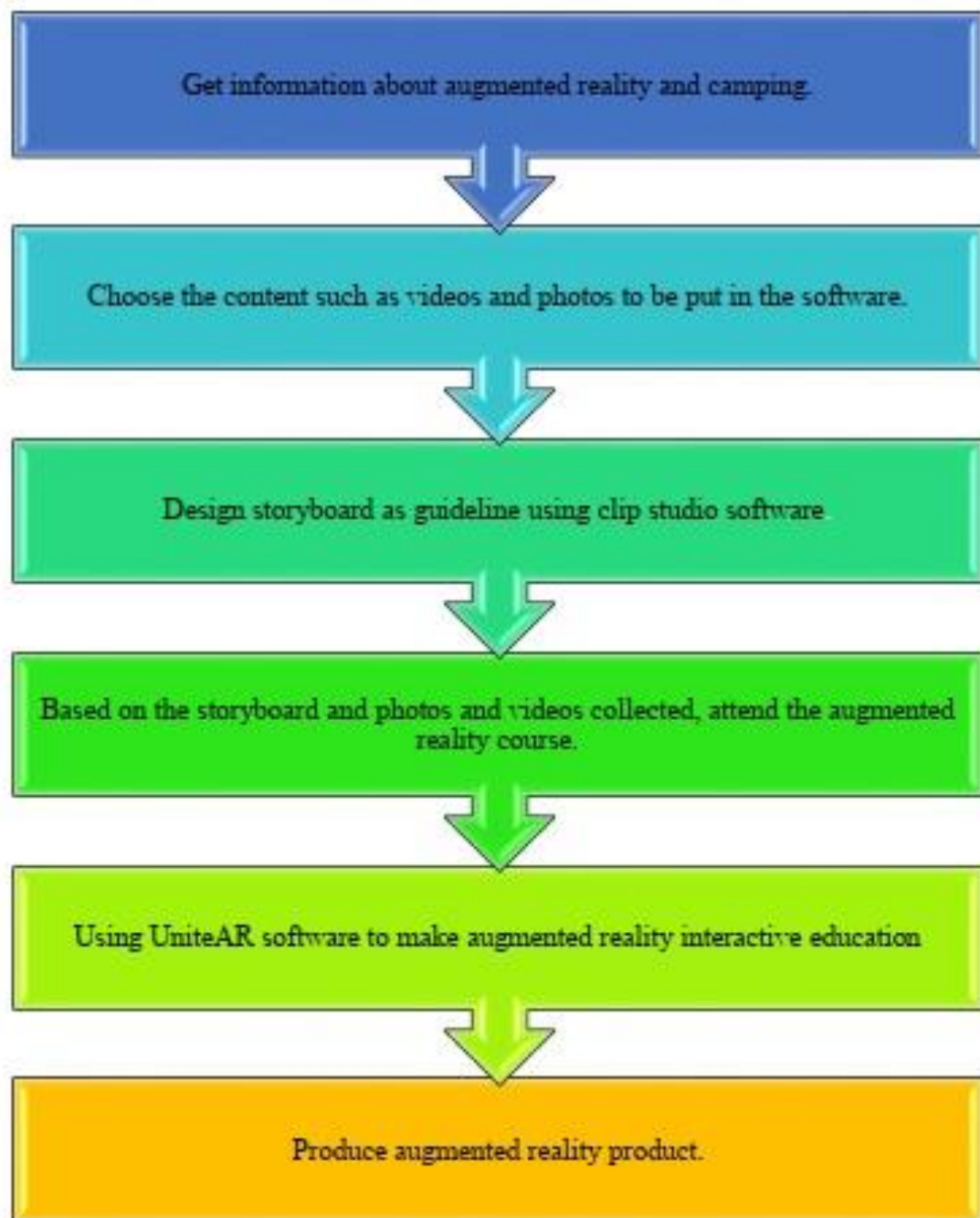


Figure 1.2 : Flowchart

Finding and Discussion

The results showed that design content in booklet and AR application were created.

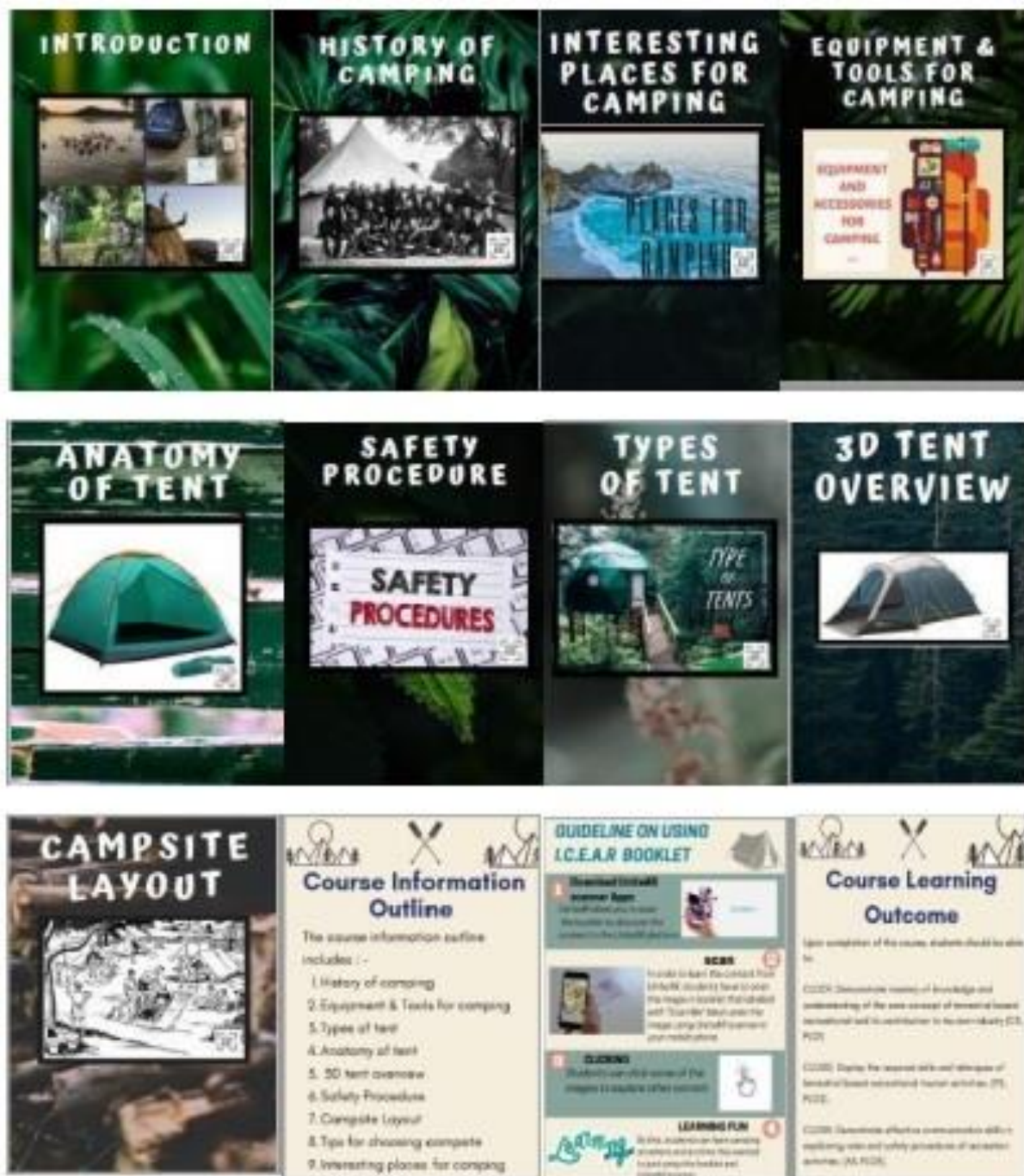


Figure 1.3 : Booklets were produced

The results showed that Augmented Reality application were created.



Figure 1.4: Augmented Reality Learning Camping were produced

The Statistical Package for the Social Sciences (SPSS) was used to analyse the collected data using various statistical test and methods. Next, a more detailed discussion of finding will be presented below:

Results Regarding Students Acceptance of Interactive Learning Camping Education Using Augmented Reality

The result showed a high acceptance rate 79% of the use of Interactive Learning Camping Education Using Augmented Reality. Furthermore, female showed the higher acceptance rates, as almost 62% of those who thought AR applications. Next, the result showed 84% a high student ages in range of 18-20 ages are acceptance of interactive learning. The result also showed 39% students are from the Semester 5 likes and acceptance the interactive learning camping.

Results Regarding Interactive Learning Camping Education Using Augmented Reality as Tools Method Teaching and Learning

The result showed a high percentage 59% the contents of Interactive Learning Camping Education Using Augmented Reality are suitable for students. Interactive Learning Camping Education Using Augmented Reality is a very helpful educations tools for camping course in DTM3023 Recreational Tourism (Terrestrial). Augmented Reality also can be applying all another subject to help a creativity lecturer using this method to apply for students. It also can help students to understand more.100% showed students agreed. Next the result showed 97% students would like to learn DTM3023 Recreational Tourism (Terrestrial) Course with augmented reality platform. Interactive Learning is an attractive learning tools as it combined most of the elements that students prefer the most. Such as, videos, animations, photos and also internet-based learning tools. Besides, by the booklet itself are very interactive and attractive as it is designed with vibrant and fresh colors, photos and combination of ideas.It is one of the portable educational tools as it is available anywhere and anytime for the users as long as they have internet data, booklet and also unitair scanner apps. This could ease the user to reach the access to the content. Contents is understandable and suitable for all range of ages, and educational level as the languages used are common and easy without any extra bombastic vocabulary used in it.

Summary and Conclusion

This study reviews augmented reality were produced and the main benefits of using augmented reality in teaching and learning. It also aims to examine user acceptance of augmented reality applications. Augmented Reality is great for lessons and teaching as it will make it easier for students to learn and understand faster. And have an interest in learning without using books, but only using UniteAR. Overall, the student will be interested in learning because they learn techniques that are different than normal. With this camping book, not only student but tourist who is interested in camping will also make it easier to find or persuade camping information using UniteAR. This project need student to create idea to using UniteAR and find information about it. Lastly, UniteAR will developing skills and knowledge among students.

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