3D HAND PRINTING TECHNOLOGY ANIMATION:

TOUCH

FONG JIAN HUI

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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SESI PENGAJIAN: 2015

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3D HAND PRINTING TECHNOLOGY ANIMATION:

TOUCH

FONG JIAN HUI

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2015

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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.

STUDENT : _____ Date: 04/09/15
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DEDICATION

This final year project is first dedicated to my beloved parents and my family members with their helps, supports and advices they had given to me during the entire development of this project.

For my beloved supervisor, Ms. Saira Hani Binti Musa,
who had give much guidances and patiences along the completion of this project.

Last but not least, to my beloved friends who had helped and supported me from the beginning of this project until the end.

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Special thanks for my friends who have helped me from the beginning of the project until the project has successfully completed.

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ABSTRACT

This 3D Animation project is mainly about the 3D Hand Printing Technology with is entitled "Touch". The target audiences of the project is the public testers and Interactive Media testers who is aged above 13. The main purpose of this project is to explore 3D printing technology for the disabled, to promote 3D printing technology through an animation and to evaluate the effectiveness of campaign develop through an animation. Audiences are able to gain knowledge on 3D printing technology while entertaining themselves in watching the 3D animation. This animation is about the boy who has restricted blood flow through his fingers, restricting them to grow since birth. His mother presented him a 3D prosthetic hand with the help of a doctor.

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ABSTRAK

Projek Animasi 3D adalah tentang Teknologi Percentakan Tangan 3D yang bertajuk *"Touch"*. Penonton sasaran projek ini ialah penguji umum yang berumur 13 tahun dank e atas serta pakar-pakar Media Interaktif. Tujuan utama projek ini adalah untuk meerokai teknologi pencentakan 3D untuk orang kurang upaya, untuk mempromosi teknologi pencetakan 3D melalui animasi dan untuk menilai keberkesanan kempen melalui animasi. Penonton dapat menanbah ilmu pengetahuan tentang teknologi pencetakan 3D sementara dapat menghiburkan diri dengan menonton animasi 3D. Cerita animasi ini adalah tentang seorang budak lelaki yang mempunyai aliran darah yang tersekat di jari tangan kirinya, malah menghalang jari-jarinya daripada mengembang sejak lahir. Ibunya telah menghadiahkan sebuah tangan prostetik dengan bantuan seorang doktor.

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LIST OF ABBREVIATIONS

3D	-	**Three - Dimensional**
UTeM	-	**Universiti Teknikal Malaysia Melaka**

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CHAPTER I

INTRODUCTION

1.1. **Introduction**

3D printing technology is a technology that uses a 3D printer to make 3-dimensional solid objects from digital files. The 3D object is created by using additive process which is achieved by laying down successive layers of the material until the whole object is completely created. Almost any solid objects can be created using 3D technology. According to Boren Z. D. in the Mail Online (August 2014), US army use 3D print technology to make meals, bombs, everything. Innes E. and Hodgekiss A. (2013) in Mail Online state that surgeon used pioneering 3D printing technology to make his patient a new face. Based on The Rakyat Post (January 20, 2015), Kuala Lumpur, Ainaa Amanda Shahzali, a disable girl received 2 mechanical hands that were built from 3D printing. 3D printing technology has been developed for over 30 years, but the society has yet to be quite familiar to this technology.

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1.2. **Problem statement(s)**

Problems that have been identified are:

- Many people do not know about the 3D printing technology.

  Based on the survey that was done by using Google Form, 19 testers from a total of 32 were unaware of this technology.

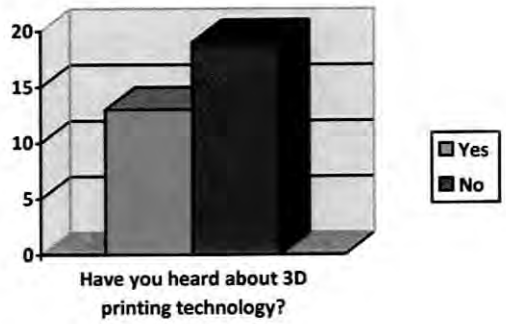

Figure 1.1.: Graph of 3D Printing Technology Pre-Survey Question 11

- Many people do not know that 3D printing technology may help the disabled.

  Based on the survey that was done by using Google Form, less than half of them knew that this technology can help people who is disabled.

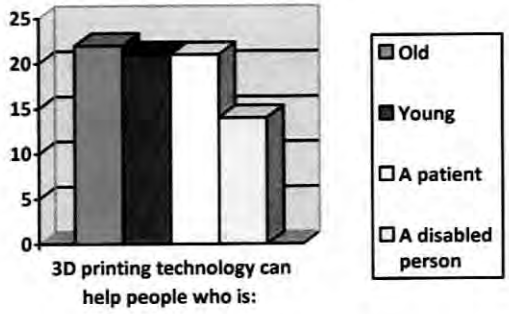

Figure 1.2.: Graph of 3D Printing Technology Pre-Survey Question 13

- There are less animation on the 3D printing technology.

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1.3. **Objective**

There are three objectives for this project, which are:

- To explore 3D printing technology for the disable
- To promote 3D printing technology through an animation
- To evaluate the effectiveness of campaign develop through an animation

1.4. **Scope**

The scope of this project can be divided into user scope and media scope.

User scope refers to the range of suitable viewers for this project. There is no limit for the range of suitable viewers. This animation project is suitable for any range of age of viewers.

Media scope refers to the details about the project. The animation length for this project is approximately 1 – 3 minutes. The animation format will be in Mp4 format

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1.5. **Project Significance**

From the animation produced, the society can have more knowledge on 3D printing technology that could help them and the disabled. Young generation can generate more ideas on improving the 3D printing technology in our country. This technology is considered a promising technology that it could bring good effects to the future.

1.6. **Expected Output**

From this project, the 3D printing technology will be introduced to everyone and they will be looking forward to have one of these kinds of products. This project may also give a chance for those in need of this technology especially the disables.

1.7. **Conclusion**

The 3D printing technology is a promising technology in future. Besides producing three dimensional solid objects which can even help the disables, it can also use to make foods and produce cells that can repair or rejuvenate the human cells. Although this technology has amazing functions, but the society has yet to know it. This animation project is produced so that everyone in general age is able to watch it.

The next chapter will discuss the literature review and project methodology.

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CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1. Introduction

3D printing technology animation is an animation that can help people to be aware of this technology, so that they could benefit from it. To produce this project product, many findings and researches are required to make sure that the project produces the correct and useful information. Literature review is done to discuss the information in published material such as academic research paper, articles and journals in the 3D printing technology area. It can be a summary of the information in the material, the source of the material, and some discussion on the information. Project methodology includes the whole development process of producing the product. It includes the pre-production, production, post-production and the documentation of the whole project.

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2.2. Domain

Most of the new technology development uses advertising in marketing their technologies. But advertising from television, newspaper and internet are mostly suitable for those who are above young adults, not for children. Oates, C., Blades, M. and Gunter, B. (2002), Children and television advertising: when do they understand persuasive intent?. Journal of Consumer Behaviour, state that "*Although children remember television advertisements, their purpose is not fully understood, even by many ten-year-olds*". For children, the knowledge they learned the most are mostly from story-telling. Based on Mou, T.Y. , Jeng, T.S. and Chen, C.H. (2013). From storyboard to story: Animation content development. Educational Research and Reviews, 8(13), 1032-1047, "*Animation is the combination of moving images. However, from story to script and from script to image, writing and concept transformation are critical to the final work.*". It is a sequence of static image that minimally differ from each other and produce a final video-like product. Animation can be long or short, depending on the information or story which it need to deliver. However, whether the animation is long or short, it still produces cartoon-like images that will increase the interest and thus improve the knowledge of children.

Domain of this project is 3D Hand Printing Technology 3D Animation. This project is a three minutes 3D animated story-telling.

According to Lipson, H., & Kurman, M. (2013). Fabricated: The new world of 3D printing, a 3D printer is a machine that can make almost anything. 3D printing technology is a technology that can print almost any solid 3D object in the world. Current research found that this technology also has the ability to help rejuvenate

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