BORANG PENGESAHAN STATUS TESIS*

3D ANIMATION VIDEO AS A TOOL TO INCREASE 12 PRINCIPLES OF ANIMATION KNOWLEDGE

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3D ANIMATION VIDEO AS A TOOL TO INCREASE 12 PRINCIPLES OF ANIMATION KNOWLEDGE

NURNASRIQ BIN ROSIDI

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2013
DECLARATION

I hereby declare that this project report entitled

3D ANIMATION VIDEO AS A TOOL TO INCREASE 12 PRINCIPLES OF ANIMATION KNOWLEDGE

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

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(MR. MOHD ADILI BIN NORASIKIN)
DEDICATION

This final project is dedicated to my beloved parents, for their support, help me when I’m needed and always prayers and give me useful advices.

For my supervisor who guide and give me a lot of support,
Mr. Mohd Adili Bin Norasikin (UTEM)

For my evaluators, Mr. Mohamad Lutfi Bin Dolhalit
(UTEM)

And lastly to my entire beloved friend that always help me from the beginning until the end of my project.
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Lastly to all my friends for their helps and critics and also positive words that make me inspired to finish this PSM.

Thank you.
ABSTRACT

3D ANIMATION VIDEO AS A TOOLS TO INCREASE 12 PRINCIPLES OF ANIMATION KNOWLEDGE is the main project that will be produced in 3D animation for the Projek Sarjana Muda (PSM) in Bachelor of Computer Science (Interactive Media). This project is a requirement for students taking the subject BITU 3973 for PSM I and BITU 3983 for PSM II, each student must come out with their own product. By using the software of Autodesk Maya 2011, Adobe Photoshop CS5, Adobe Sound Booth CS5 and Adobe Premiere CS5 the project is developed. This project also focus to student who still do not know about 12 principles of animation. The objective of this 3D animation is to develop 3D animation short story to explain the 12 principles of animation. Besides that developer wants to evaluate acceptance of students by using 3D animation rather than static picture in delivering information. Next developer wants to improve the student knowledge on 12 principles of animation. In this project students from multimedia course are the target user that will use the 3D animation video for their knowledge and the animator who are the familiar with 3D animation. So that on that purposes this 3D animation project give developer valuable experience during from the beginning till the end.
ABSTRAK

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CHAPTER I

INTRODUCTION

This chapter will give an overview about the twelve principles of animation and this project will be developed by developer which is to ensure that the project will work properly for user especially to student with multimedia course. This chapter basically discusses the project background, problem statements, objectives, research question, project scope, project framework, project significance and summary.

1.1 Project Background

In 1981, Ollie Johnston and Frank Thomas already create their own book in the title of "The Illusion of Life by Disney". This book will tells about the basic twelve principles of animation so they have a main purpose of the principles in identifying was to produce of illusion of characters adhering to the basic laws of physics. They also want to create more abstract issues whether they could not find another reason about the basic principles of animation.

Knowledge of the principles of animation has been developed by generations of great animators using their experience and expertise. In this induction has already become a treasure that has influenced all the great work and be the answer to Walt Disney for realistic animation skills and entertainment that can capture the audience with the "illusion of life".
"3D animation video as a tools to increase 12 principles of animation knowledge for beginner animators." is the main project that will be produced in 3D animation. This project also focus to student who still do not know about 12 principles of animation. Some characters are shown to demonstrate the 12 principles of animation in a 3D short story.

This short story is about one boy Jep who sit alone at the park. Suddenly, appears a role ball that came toward him. By taking the ball as the subject many scenes that captured Jep actions with that ball. The highlighted idea in this story is to explain about 12 principles of animation in easier way. The duration of this 3D animation scene is about 1 minute. Comparison about 12 principles of animation between the static pictures and 3d animation video will be included to investigate the effects of the use of 3d animation video and static pictures are effective to students or not.

1.2 Problem Statements

3D animation film has developed by many productions since the market is growing larger. Current situation shows that 3D animation has high demands especially in film and broadcast field.

At University or College, in the learning process, lecturer already explained about 12 principles of animation concepts through pictures or presentation slides. 3D animation can also to be use in lecture to teach student about 12 principles of animation. Lecturer already prepare to teach them, unfortunately, some students still do not know about the 12 principles of animation.

Currently, students were not interested on the slides and using a picture. Some student like to study with a video animation. Student can compare to learn on picture or video that was more interested to them.
1.3 **Objective**

To ensure that the project will working properly, each project must have objectives to achieve the goals. The objectives must be stated clearly. The objectives of this project are:

- To develop 3D animation short story to explain the 12 principles of animation.
- To evaluate acceptance of students by using 3D animation rather than static picture in delivering information.
- To improve the student knowledge on 12 principles of animation.

1.4 **Research Questions**

For the research question, the project must be state the question. Below are the research questions:

- How to improve students knowledge on 12 Principles of animation?
- How to explain the 12 principles of animation more clearly to students?
- How to see the acceptance of the students learn to understand through static pictures or 3D animation video?
1.5 Project Scope

The scopes of this project are divided into three main subtopics: target user, 3D animation, and limitation of the project. The description of each area are as below:

1.5.1 Target User

This project is especially for the students who are interested in 3D animation. This project is to produce 3D animation that makes the student understand what kind of 12 Principles of Animation.

1.5.2 3D animation

Autodesk Maya 2011 is the main software used to develop 3D animation. This project uses 3D animation techniques in creating 3D animation to create the short story and to explain what the 12 Principles of Animation in the short story.

1.5.3 Limitation of the project

This project is to apply elements of 3D animation in creating 3D animation with the short story in 12 Principles of Animation. This animation will be presented for 3 minutes. This project will compare with static picture and 3D animation short story.
1.6 Project Framework

Pre-Production
- Analysis
- Story line
- Character Design
- Visual Direction
- Storyboarding
- Production Planning

Production
- 3D Modelling
- Materials and Texture Mapping
- Texture Painting
- Character Modelling Setup
- Environment
- Lighting
- Cameras
- Visual Effect
- Animation
- Rendering

Post-Production
- Audio
- Video Editing
- Final Render
- Implementation
- Evaluation
- Final Report

Figure 1.1: Project Framework
1.6.1 Pre-Production

Process involving the depiction of different measures and help to develop a 'roadmap' on which to base further production stage. In this process, pre-production to further develop its ideas and plans before the production process.

1.6.2 Production

Once the outcome from the pre-production documents is obtained, the production process will begin. In this process, the 3D characters and scenes are modelled using the 3D Autodesk Maya. This is where the production starts. It starts with modelling the characters and the environment. Then, once the characters and scenes are completed, the characters will then be animated followed by rendering.

1.6.3 Post-Production

The final stage in the process of creating animation and involves exporting or give out animation frame is post-production. Video editing software is use to edit animated pieces together. Audio effects including sound tracks also added during the final edit.

1.7 Project Significance

This project is important in helping student to increase their knowledge about 12 Principles of Animation. In the 3D animation short story this project will explain on what kind of the 12 Principles of Animation. For those who did not interested in the static picture can see the 3D animation short story that the student can compare where is the better comprehension which is static picture or 3D animation short story.
Summary

This project will be developed using 3D animation techniques based on the problem statements, objectives, research question, project scope and project framework and project significance are described. Revision about the 12 Principles of Animation must more detailed will make in this project to achieve the goal.

Next chapter will discuss some of the literature associated with 12 principles of animation to be used in the development of this project.
CHAPTER II

LITERATURE REVIEW

This chapter on literature summarizes, interprets, and evaluates existing literature or published material in order to establish current knowledge of a subject. The purpose for doing so is relates to ongoing research to develop that knowledge. The literature review may resolve a controversy, establish the need for additional research, and define a topic of inquiry.

2.1 Area of Study

This area of study is tells about the twelve principles of animation and will be explain to get more understanding about twelve principles of animation more clearly. Any topics regarding in this project is done by searching and comparing earlier project or academic paper to support the development of project.
2.1.1 The Twelve Principles of Animation

According to Chris Glick (2011), a group of top Disney animators came together and defined the twelve principles of animation. When applied properly would create amazing animation and an engaging experience to the audience. Frank Thomas and Ollie Johnston released a book titled 'The Illusion of Life: Disney Animation' in a year 1981 which detailed all twelve principles of animation. Since then, all the animators around the world have studied and applied the techniques. Although they were originally created for hand-drawn animation the twelve principles are applied directly to modern computer generated animation.

According to Lasseter (2010), to create the believable animation of traditional animation must provide a series of tricks from the animators and when animating on the computer this should remain more or less the same to the animation on the computers. However he concedes that the application of twelve principles of animation must change due to the difference in medium.

Kerlow (2009) argues the challenge is to now reinterpret and expand the original principles of animation and to add new principles that the new animation styles is going to start now today. Whether "tell some story directing the performance representing reality the craft of represented or created a reality in a believable way and edited a sequence of actions”, he has clustered them into categories around that.

Williams (2009) has extended the original principle by explaining a third approach which combines the best of straight ahead and pose to pose animation. This hybrid approach uses the structured approach of pose to pose animation by setting out the key positions for the character followed by the most important positions that illustrate the intended action. From this he then works in layers in a straight ahead manner filling in the drawings in between the ones he has already established.