

3D Animation for Energy Reduction Campaign (Phase 1)

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Abstract

Recently, every country has been using technology for manufacturing and agricultural development, including creating various convenient facilities to satisfy human needs. Existing energy has very much been used, for example; electricity, oil, etc. and soon run out. The careless use of energy, lack of knowledge of energy, overusing energy can have devastating effects on ecosystems and human lives such as geography, climate, etc. In order for realizing the value of energy, using energy efficiently, encouraging and educating youth about proper energy uses, this research of 3D Animation for Energy Reduction Campaign is created and distributed to the youth. The animation is created in the form of video format and has animation process as follows: 1) Pre-production: problem defines, story board, turntable animation and backdrop design 2) Production: 3D model character, shading and texturing, light and shadow, rendering and editing and 3) Post-production: research validation by experts. The research of 3D Animation in the form of video format was one of the successful ways to promote uses of energy and energy reduction campaign and it was found that the youth understood and perceived what the animation was trying to tell them very well.

Keyword: Energy, Animation

1. Introduction

After industrial revolution, most countries have turned to industrial society. This includes developed countries such as USA, China, Russia, Japan and European countries and developing countries including Thailand. The impact of industrialization has caused the change in environment including geographic, climate, and society. On the other hand, it help creates modern technology and facilities. Some facilities need some sorts of energy as such as electricity, oil, etc. Therefore, energy is very important in human societies. As the demand for energy increase, some sorts of energy might be used up and run out in the future. To reduce the risk or to slowdown the future problems, efficient use of energy and energy reduction should be realized and perceived. [3]

The purpose of energy reduction campaign is to let people realize problems that might happen in the future if the over consuming keeps going. Many types of media have been used for campaign. However, the most attractive media at the present is animation. Animation was originated by the theory of persistence of vision. The persistence of vision is the phenomenon of the eye by which an afterimage is thought to persist for approximately one twenty-fifth of a second on the retina and believed to be explanation for motion perception. Animation creation methods include traditional animation (two-dimensional or hand-drawn animation or cut-out animation), stop motion animation of three-dimensional objects (clay animation), and digital computer animation (images are displayed in a rapid succession) [2]

Therefore, everyone must be responsible for energy reduction and should continuously promote campaign. The advantage of using animation as a media used in campaign is that it is the most appropriate media especially the 3D animation technique, which could illustrate and is very powerful in terms of perception.

(Phase 1: Story and Character design)

2. Production Process

2.1 Production Concept

The purpose of 3D animation is for energy reduction campaign. The story is about electricity reduction in a house. Lighting technique and character over acting movement [1] are being used by the researcher to create this 3D animation. The reason is that the movement of character will be cheerful and is interesting.

2.2 Story Concept

The concept of realization and attitude [4] is used to create story of the animation. The survey was conducted in order to find out a suitable and most attractive story to reflect the need of energy reduction these days. Samples were graduates and undergraduates of Sripatum University Chonburi Campus. It was found that most sample would like to promote electricity reduction campaign and the impact of not having electricity in the future.

2.3 Animation and Character Design

According to character design and 3D animation theory, a young working man is created by using Maya and Photoshop program. The technique of polygon modeling,

UV mapping, and color are also used together with skin surface creation (bump) so that the model is closed to the realistic character.

2.4 Character set up process

After collecting information, the process of checking software (Maya, After Effect, Photoshop) is then taken places as follows:

2.4.1 Test model movement using Maya program, then create joints and skeleton using invert Kinematic function to control and create smooth movement of skeleton.

2.4.2 Test emotion on the face of the model using blend shape method which could make realistically face express of the model.

2.4.3 Determine bind skin in order to be able to control the movement and the change of shapes and object surface. Smooth bind skin is used so as to make the movement more natural and realistic.

2.4.4 Test movement of the model

2.4.5 Create location and lighting according to the story

3. Result of the research (Phase 1)

3.1 Character

Energy saving concept, 3D animation theory, and survey results are used to design and create realistic character of the 3D animation as shown in figure 1-2.

3.2 Location

A condominium room is set as location of the 3D animation to reflect city atmosphere with limited space, as shown in figure 3-4.



Figure 1 The first character

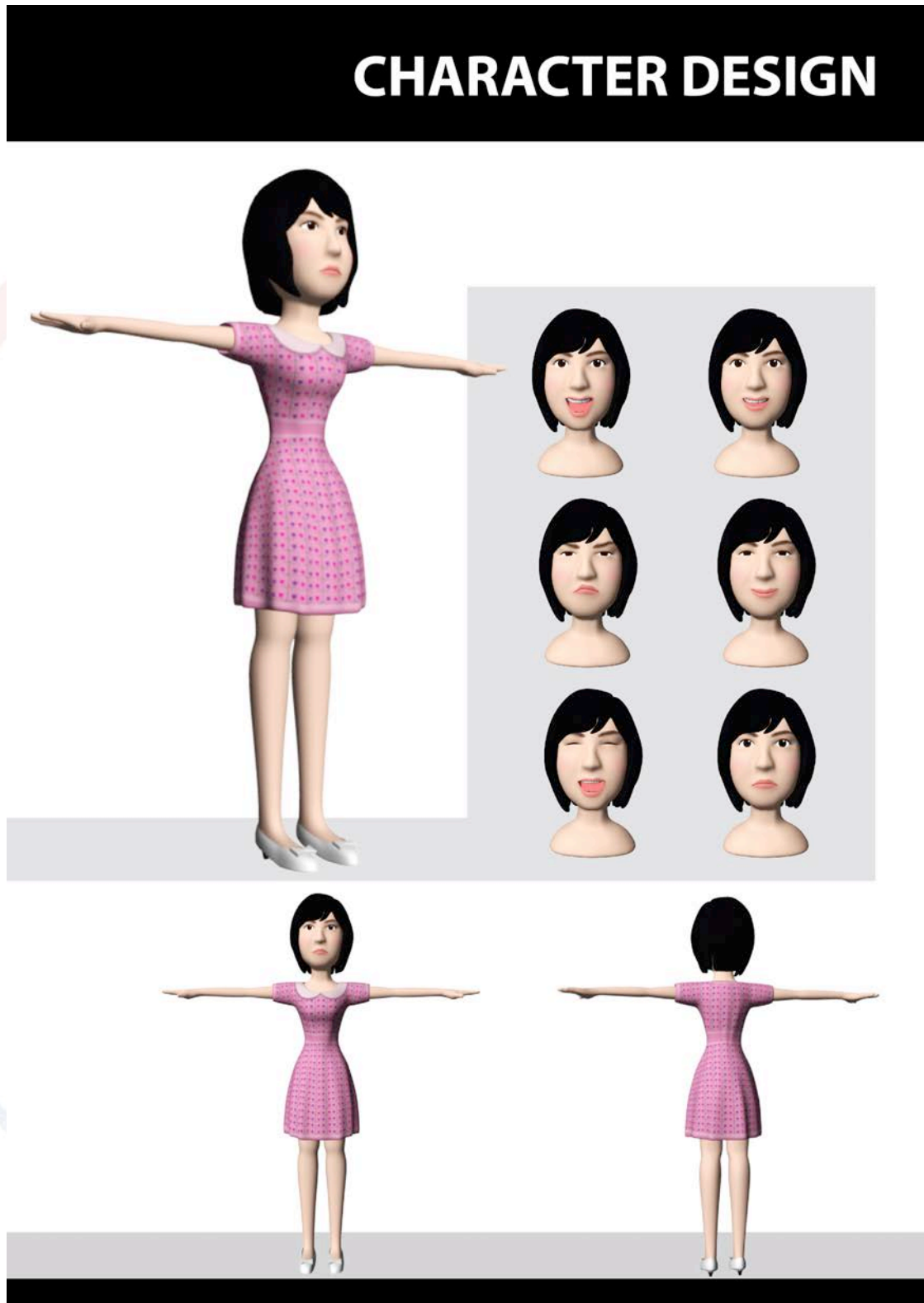


Figure 2 The second character



Figure 3 Location



Figure 4 Location

4. Conclusion (Phase 1)

In the phase 1 of creating 3D animation for energy reduction campaign, the concept of realization and attitude is used to create story of the animation, character, and location. The survey was conducted in order to find out a suitable and most attractive story to reflect the need of energy reduction these days.

The next phase of this research (Phase 2) includes (1) making movement for character and setting camera angle (2) image composition and image advance edition using After Effect Program (3) 3D animation rendering (4) edit image using advance technique in Premiere Pro Program and (5) 3D animation video rendering. Finally, the last phase (Phase 3) is to launch the finished animation and assess efficiency of the campaign.

Reference

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