The Creation of 2D Animated Short Film: Sakai

Pitchaporn Soonthornnon

Department of Animation, Jain University, Bangalore, India

Corresponding author pitchapornn@yahoo.com

Abstract

Sakai is the last remaining indigenous tribes in the south of Thailand, who lives together in small groups scattered in Bala-Hala forest that is a large rainforest with many rare plants and wildlife, occupies a large area at the boundary of Thailand to Malaysia. In Southern Thailand, the Sakai lives in the forest mountains of the Bantad mountain range in the provinces of Phatthalung, Trang and Satun. The area in the region is a tropical rain forest, which is fertile environment with lush vegetation, large trees, vines, herbal plants and abundant wildlife such as monkeys, langurs, flying lemurs, gibbons and wild boars. The biodiversity of the region is currently in danger from illegal logging and land encroachment from humans. Sakai is not wild, they have their own culture from their ancestors. But the difference is their social status and obtaining social welfare have not been attained yet. But they do not claim any rights but also satisfied of their status: a simple way of life in the forest, food from the wild forest and hunting. But what Sakai want more than anything else is the consciousness of the people and life in the city and stop the destruction of forests, to enable Sakai remain with the wild forest. At present, there is a few of the Sakai who lives at this village, the rest of the group has moved to other areas. The main reason that they have to evacuate, lack of food supply, death of someone in the tribe, the biodiversity of the region is currently in danger from illegal logging and land encroachment from humans. These developments are decreasing the amount of forest coverage and reducing food resources disrupting the natural food chain of the region and unrest in the area while the government sector lacks of continues support for them.

The essence of this creative artwork is also to understand why after a series of attempts by the Thai government to educate, develop and civilize the Sakai, they still are very much adamant to change and prefer maintaining their long standing culture and primitive way of life. The Sakai have a way of life unique to them only and are strongly attached to their culture that even the advancement of science, technology and innovation cannot deter their ways. This creative art work therefore seeks to provide a better understanding on the tradition and cultural adherence of the Sakai which has brought about social stratification and disintegration in the Southern parts of Thailand.

So, the purpose of this creative artwork is to promote the conservation and cultural identities of Sakai that will be presented through 2D animation (short film), to the audience understand their survival and to support them without disturbing their lives. This creative work is followed the production pipeline of a typical animated short that can be divided into three stages;

1. In Preproduction, the phase of further developing ideas and planning prior to the process of production including Visual Design: Character Design, BG Design, Storyboard and Animatic.

2. In Production, the actual work can start, based on the guidelines established during Preproduction. Some major parts are layout, modeling, texturing, lighting, rigging and animation with the techniques of creating 2D animation including Separating elements and line work.

3. Postproduction is the third and final step in animation film creation, it refers to the tasks that must be completed or executed after the filming or shooting ends. Some major parts are production are compositing with the multi-level techniques, sound editing and video editing.

Keywords: creative artwork, the creation process, 2D animation, animation pipeline

■■ Introduction

Animation is also known as 'motion graphics', animation is the process of displaying still images in a rapid sequence to create the illusion of movement. There are two main types of computer animation that can be used to make both two dimensional (2D) and three dimensional (3D) animation. Klazema (2014) has described the meaning of 2D animation is a type of animation created in a two dimensional context instead of a three dimensional context. Many modern animation studios (such as DreamWorks and Pixar). Animation is, at a very basic level, nothing more than a series of pictures, called frames, quickly played along a timeline or reel. The 2D animated short filmmaking, to work on something that was more specific than just animation in general and Smith (2013) has mentioned about the 2D animation, is a method of animating using singular frames that work together to form motion. It has evolved over the decades and now has become a primarily digital based method of animation. The main purpose of this creative artwork that I had in mind, is to promote the conservation of the Sakai tribe in The South of Thailand. I started doing some research and got the reference of Sakai and the location where they live and some reference about animation, camera movement and audience. Adam Smith also mentioned about the target audience that animation works well for its target audience. This is mostly because the creativity will grab the attention of younger people and the vibrant colors will suggest that the TV has excellent quality. Then, started planning how I would like to organize the filmmaking. I had collected all the information that wanted to include in this storytelling, I started to plan and develop my own animation.

The creation process of 2D animated film is divided into two parts. The first one is a little introduction of the general concept of animation. The second part focuses more on its developing the animation pipeline (Pre-production, Production and Post-production). Dunlop (2014) has mentioned about the production pipeline, is the glue that holds together the work of each artist involved in a production. A pipeline is much the same as an assembly line, in which each worker performs their task before handing off their completed work to the next. The main difference between creating art and creating factory goods is that the creative process incorporates review cycles through which the final product can be refined.

As the mention of Renee Dunlop previously, the main sources of animation I used to develop this creative artwork have been different online sites and lots of videos from the internet. I also did some findings from some educated Sakai people on their life style to enable me establish facts and focusing about its developing the animation pipeline. After I got so many information about Sakai, the concept has done with 'The most valuable thing is different for each person, incomparable' that is used to develop in the next story development step.

Nowadays, most animation movies are created using computer graphics, computer-generated animation is very useful when it comes to create crowd scenes and special effects. I used different softwares for each steps, including Adobe Photoshop in Preproduction, Adobe Flash Professional in Production, Adobe After Effects, Adobe Premiere Pro and Adobe Audition in Postproduction, with techniques of 2D animated short filmmaking.

■■ Workflow

The production pipeline of typical animated short can be divided into three stages. Pre-production, storyboards are shot and edited with rough dialogue and timing into a story reel. Unrefined as it is, this is the first time the story is told with visuals. Any problems with the story are easily seen and can be remedied at this juncture in the process before time and money are invested to produce art for the movie. (Hernandez & Ghertner, 2012, p. 186)

Pre-production, the first process in the animation pipeline, and also one of the most important, is pre-production. It begins with the main concepts which are initially turned into a full story, and then, once the story has been finalized, other things such as the script, shot sequence and camera angles are worked

on. Some major components of Preproduction are Storyboarding, Model Sheets of Character or props and Animatic (Gulati, 2010).

Production, as the production moves to the next step in the Layout Department, the story and film begin to grow. The next step in the workflow process is to give the rough layout and character positions from the storyboards to the animators so the acting can be created on the stage. And planning to create the camera movements and positioning. The scene is now ready to be painted and goes to checking, on to final check. This is the final check before the scene is shot in color. Using the information from scene planning, camera shoots the rough artwork as directed. After the scenes have been shot, they move on to the editor, who cuts them into sequence.

Post-production, the editorial process operates through the entire production. Starting at the development stage, will cut together the storyboard panels to create a rough timing for the entire picture. Then, as the dialogue is recorded. Once the film is cut together it is time for sound mixing, sound effects, if necessary (Hernandez & Ghertner, 2012, pp. 188-194).

Basement should be strong enough to build a building, it is also essential to set thing up in the beginning than to struggle at the end. To start an animation short film that related to animation pipeline, first the pre-production stage should to strong enough, the creative artwork the work title is 'SAKAI', that name is from the name of local tribe in the South of Thailand. I got all the preproduction materials from 2D sketches, character design, animatic and all the necessary things required for a production stage to start with.

■■ **The production pipeline**

1. Pre-production

The concept of this creative artwork comes from the idea of creating media for the conservation of the Sakai tribe in the South of Thailand. Therefore, the concept is simple to suit all audiences, to understand the most valuable thing is different for each person, incomparable. I also have added unique Thai pattern for each character, to make it interesting and different

from any other works.

Concept: The most valuable thing is different for each person, incomparable.

Story Development: The story begins with the beauty of Bala-Hala forest and Sakai Village. Then, there are invaders come to destroy the forest where is exactly the same as the house of the Sakai. The climax of the story show the different valuable things of Sakai and the invaders. Finally, the conclusion of the story tell about deforestation and the collaboration between Sakai and the invaders in forest conservation together.

As the story development previously, the story is covered for the purpose of promoting Sakai's village and habitat conservation and it can be work in next step.

1.1 Character Design

The primary goal of character design is the process to connect the audience to the character. In this process, the characters and environment are created through sketches from the reference in research. Later on, I used these sketches as guidelines to create characters in the computer with Adobe Photoshop and created the final character in vector graphic format with Adobe Flash.

Main Character: Sakai and the head of the invaders

Supporting Character: a hornbill and a coucal

Model Sheet of Character:

Color guide:
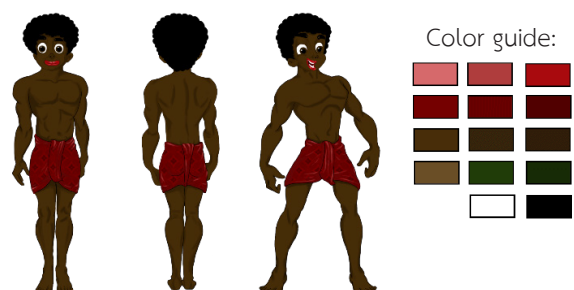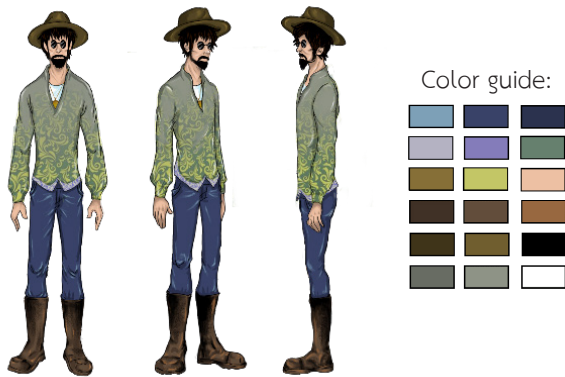
Model sheets depict characters in their front view, side view, behind. One of the biggest

benefits of a model sheet is the fact that it greatly speeds up the creating process, especially character and prop. Great model sheets will eliminate any guessing on all of character sides.

1.2 Storyboard

The storyboard is one of the first aspects to be completed. The storyboard, a series of pictures with captions that describes the outline of the story, helps in the placement of cameras and the timing of animation later on in the production process. The storyboarding process begins with an initial rough draft. Then, it is useful to animating process (Willett, Lee, & Castaneda, 2010).

From that example of storyboard of this creative artwork previously, it can be helped to finalise the development and the storyline and is an essential stage of the animation process. It is a visual reminder of the plan. Storyboards can be especially useful to see overall of story and the refinement of ideas.

1.3 Animatic

During editing, the whole film comes together. In the steps up to the final editing process, once the storyboard is complete, brought into an editing program and cut together with the correct timing and pace of the film. These are then edited together with the voice recordings and some sound effects to create an animatic and those working on the film a rough idea of how it will look. While I finish animating different shots, create a rough video of the shots. These are inserted into the animatic where the

storyboard drawings were. Finally, as the shots are rendered, the final frames are put into the animatic. Through this process, the rough animatic transforms into the final film (Willet et al., 2010).

1.4 Style

Generally prefer bold, primary colors and high contrasts in graphic layouts. The background illustrations and Characters are generally very colorful in such layouts, which create an immersive and exploratory experience for all audiences (Naranjo-Bock, 2011).

The format of creative artwork is 2D animation short film with Adobe Flash. The purpose of this media is used to promote the conservation of the Sakai tribe. By focusing on all audiences, the style and color style should be simple, how color can significantly influence an audience. Color can elicit a

strong emotional response and convey mood and atmosphere bright color for an extrovert dark color for the bad guy that can help the audience identify who the characters are and how they feel about each other, to the clean and vector graphics of illustrations.

1.4.1 Adding unique pattern of Thailand

'Lai Thai', the Uniqueness of Thai Art, The uniqueness of Lai Thai is on the smooth flow of the line and the delicate pattern design. Lai Thai can be found in the fields of painting, sculpture, architecture as well as other forms of art such as the patterns of Thai fabric, furniture, ornament and various carvings. This creative artwork is added unique pattern of Thailand in character and props design that can make the unique of this creative artwork (Monteil, 2017).

1.5 Background Design

The background design was inspired by a real place and existing, such as the Sakai villages, the Sakai live in the easily hand-made made from palm and banana leaves for structuring and are covered with banana leaves. The shape looks like a hut without room space or a pillar. And some backgrounds that come from my imagination, to show how the beauty and abundance of Bala-Hala forest is. Designing BG should be as much fun as animating and there is less restriction since BG does not have to animate.

Once I have rendered a key BG color style my characters and place them in the shot, this is easy to do in Flash and will give me a good idea of how well they fit into their environment.

BGs are designed from the actual place in Bala-Hala forest.

2. Production

Once I have my characters, my scene and cameras set up, I can start animating based on our storyboard. Like in traditional animation that the animator must draw each individual frame, in computer animation I only set the main key frames and in-betweens, between them.

Keep it simple, I do not make the work more difficult by designing characters that are going to be complex to animate and move around, I will probably end up having to draw characters in many different positions and angles as well as be able to animate them from pose to pose.

2.1 Character Animation

This story that takes place in Bala-Hala forest, where is well known that is a forest with many rare plants and wildlife, especially birds. At the beginning the Sakai village is introduced with the main characters with flying birds.

In normal flight the wing strokes are not straight up and down. The direction of beat is slightly backwards on the upstroke and slightly forwards on the downstroke. This is the opposite of what might be expected for forward flight, but the forward impetus is actually given by the tilt of the wing surfaces. This forward and backward wing beat is particularly noticeable when the bird is hovering (the body may be

almost vertical and the wing beat almost horizontal) and also when the bird is rising or coming in to land.

During a flying cycle, the upstroke and the downstroke take about the same time, although

with larger birds at least, the downstroke is slower. The length of the repeat depends on the size of the bird. On the whole a large bird moves more slowly than a small one (Whitaker & Halas, 2002).

1-9 is a repeat flying cycle. The body dips slightly in the air on 1 and rises slightly on 6 as the wings press downwards. The wingtip feathers radiate from the wrist and trail backwards in the direction they are coming from to give flexibility. These feathers separate on the upstroke 7 and 8 to allow the air to pass between them.

Run Cycle

I am only going to animate one complete cycle and then loop the animation on playback. The character will be walking on the spot, sliding its feel backwards along the ground and then picking them up to cross over and bring them forward.

Frame 1: Hit

Frame 4: Pass Pose

Frame 8: Hit   Frame 11: Pass Pose
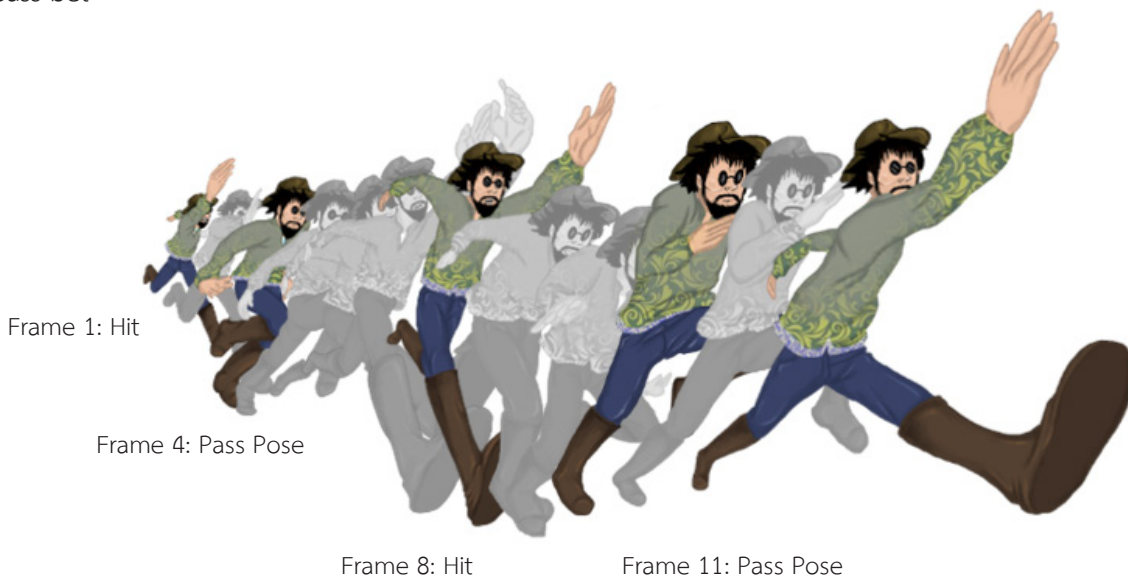
Walk cycles can be broken up into 4 key frames, namely Contact (or known as Hit, Recoil, Passing and High-point. Frames that are drawn between these key poses or known as in-betweens.

2.2 Techniques

2.2.1 Separating elements

It is often best to design character so that there are able to be broken down into separate elements. This is a technique can save much drawing time.
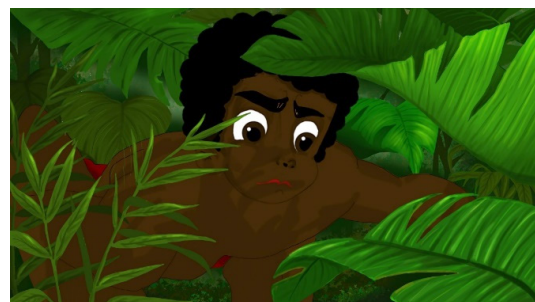
For Example, Separating mouths allows to animate the character's dialogue and separating the legs allows to animate walk or run cycles

without redrawing the whole character in every frame in exactly the same way. And I have kept BG fairly simple, I have divide it up into some separate elements (overlays and underlays) to give it some depth through the pan (Peaty & Kirkpatrick, 2002, pp. 56-58).

I have kept BG fairly simple, I have divide it up into some separate elements (overlays and underlays) to give it some depth through the pan.

2.2.2 Line Work

Line is an integral part of the overall visual style, the line work to a large extent, defined the look of these shows (character)
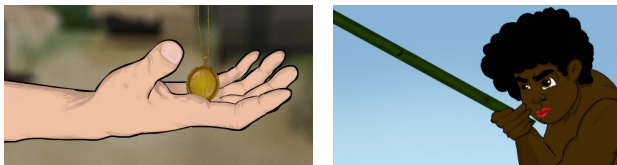

Line work as a significant design element, I have the outside line rendered a lot heavier than the interior line work. It also makes a much stronger visual statement and is a more significant element in the overall look and art direction. This type of thick and thin line work has always been popular in animation.

The importance of line work in Flash, one of the most pleasing aspects of the flash program is the way it handles line work, how it can optimize and straighten the line to give a very toony look (Peaty & Kirkpatrick, 2002, pp. 50-52).

2.2.3 The Trace Bitmap Function

There are several ways in which bitmap images (e.g. JPG, PNG or GIF formats) can be converted into a vector Trace Bitmap, method of optimizing line is the straight line option. This is more effective when I want to optimize images that are made up of straight vector lines.

Drawn with Brush tool on Photoshop, look very rough and crude, but after I optimize it with Adobe Flash (Trace Bitmap Function), it takes on a whole new look and good result.
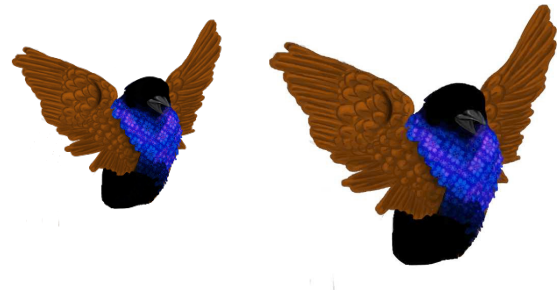

2.2.4 Tweens

Motion Tween is very common way to create movement with Flash, this method can help minimize file size, particularly over frame by frame animation.

In Motion Tweening, define properties such as position, size, rotation, also tween color effects and filters.

A shape tween is used when a color needs to slowly transition to another or when a shape turns into another shape. Shape tweening can also create some interesting effects when a drawing is turned into a shape, text, or another drawing.

In Shape Tweening, can change the shape or draw another shape at another point in time.

A classic tween is used when making objects fade in and out; or move across a scene. Classic tweens are also used to change the size of an object (Animation learning guide forflash: Motion tweens, 2011).
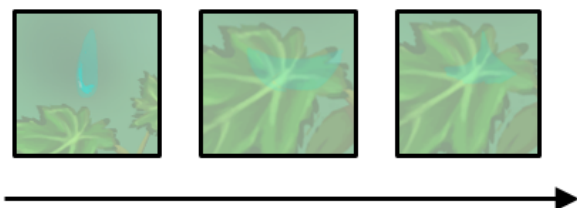
Shape tweens: change the shape of water drops
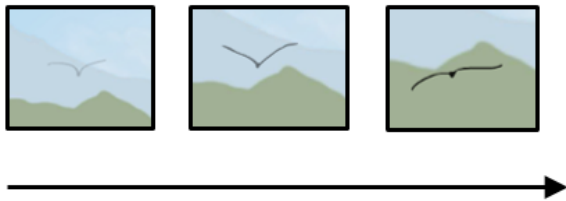
Motion tweens: change the position and the alpha
transparency

2.2.5. A Virtual Camera

In Flash, the use of camera in
filmmaking is crucial, this is the audience's window
on events and our perspective. In flash, there is no
physical camera, virtual camera, which will remain fixed
as I move our drawings around it to give the illusion of
movement. When I zoom in with flash I need to make
subjects bigger, rather than moving the camera closer.
When I appear to pan across, I am actually moving the
BG rather than camera (Peaty & Kirkpatrick, 2002, p. 73).

From the Close Up shot example,
these shots can be used to stress the importance of a
particular character at a particular moment in a film or
place her or him as central to the narrative by singling
out the character in Close Up (CU) at the beginning of
the film. It can signify the star exclusively.

Medium shot (MS) example, this
shot frames a character from the waist, hips or knees
up (or down). The camera is sufficiently distanced
from the body for the character to be seen in relation
to her or his surroundings. Typically, characters will
occupy half to two-thirds of the frame. This shot is very
commonly used in indoor sequences allowing for a
visual signification of relationships between characters.

Long shot (LS) example, these
shot shows subject or characters are at some distance
from the camera; they are seen in full within their
surrounding environment.

3. Post-production

In Post-production, for the process of
combining visual elements from separate sources into
single images. All scenes are arranged in compositing
software with Adobe After Effects, adding Sound Effects
with Adobe Audition and Final editing with Adobe
(Clarke, 2002, pp.152)

3.1 Composition

The physical and emotional compo-
sitional aspects of the story and the placement of
characters within the setting. Having an understanding
of the composition and shapes used to fill the graphic
space, the relationships between them, and the world
that I create for them to live in, will strengthen the
story point (Hernandez & Ghertner, 2012, p. 96).

I created separating components with
Adobe Flash, then import them into Adobe After Effect
to make the initial composition, such as shadow for
each character in the scene that can make the scene
look better.

For this scene, I added the shadow of
two characters by using effects with Adobe After Effect
that helped make the scene look better.

Shadow, and reflection create dimension
in a composition, and it can also be used as a tool

to direct the eye to a certain point on the stage. As a design element, a shadow establishes volume, creating more than actually exists in a composition. It also helps to set up the mood and meaning.

3.2 Multi-level

An animation camera move can imitate a real camera move in many different ways, but the three most common are Multilevel, Multi Plane, or Virtual Reality (CG). With regards to the CG camera I will use the same thought processes as the 2D multi-level and multi-plane moves, only the multilevel camera move has the camera static and the levels move parallel to it. The final look has depth to it because of the levels of art sliding across one another. The multi -plane camera move is a compound move, meaning that every artwork element and the camera can move in any direction.

The multi-level move shows a bird flying over clouds and countryside so the bird is static to the camera animating. The clouds are moving faster than the background because of the space or depth between them and the bird. To give a sense of the bird moving faster the clouds can be moved faster. As the bird dives down to land, the cloud level and the bird levels will switch positions to the next scene (Ghertner, 2010, p. 142).
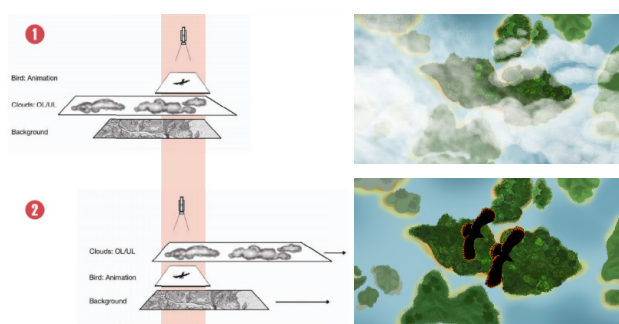
3.3 Additional Sound Effects

In this creative artwork, there is not dialog part, only sound effects and background sound are added during post-production with Adobe Audition. The sound effect is a major part of the magic of film. The story becomes real when the sound is added.

In this process, I have done research about musical instruments and local song in southern of Thailand. The research found that the culturally significant music and performances in this region can be divided into 2 socio-religious groups delineated by the Buddhist and Muslim faiths.

The research found that most Thai-Muslim performances contain strong cultural influences from Malaysia and Indonesia. Primarily, the music or songs are performed as an accompaniment to a theatrical or folk performance. These performances are a central part of the Thai-Muslim lifestyle (Sumrongthong, 2008, pp. 99-113).

3.4 Final Editing

A creative and technical part of the post-production process of filmmaking, is called as final editing that is derived from the traditional process of working with film, but increasingly involves the use of digital technology. This process, I work with the raw footage, selecting shots and combining them into sequences to create a finished motion picture with Adobe Premiere Pro.

3.4.1 Apply Transitions

A transition moves a scene from one shot to the next. Generally, to use a simple cut to move from shot to shot, but in some cases, that might want to transition between shots by phasing out one and phasing in another. Premiere Pro provides many transitions that you can apply to the sequence. A transition can be a subtle crossfade or a stylized effect, such as a page turn or spinning pinwheel. While usually place a transition on a cut line between shots, you can also apply a transition to only the beginning or end of a scene (Monahan, 2011).

3.5 Final Output Export

The first thing to think about when exporting a film is to think about where the film will be delivered and how it will be viewed, uploaded to Youtube or other media.

In this process, can select desired settings or presets for the video before sending it to Media Encoder for exporting with Adobe Premiere Pro, select a preset that matches our sequence and my desired

output. My sequence is 720p with a frame rate of 24. So, I selected the "HD 720p 24″ preset.

■■ Conclusion

The imperfections of 2D animation are a reminder that humans are not perfect. That is the reason why we should be drawn to it. 2D animation allows us to build up on those skills while making great animation and drawing each frame that makes us think deeply about how to make the expression work. As well as how my characters will act.

The 2D Animated Short Filmmaking: Sakai is an example of creative artwork that will contribute to the conservation of the Sakai tribe in Thailand. It really useful for those who are interested in animated filmmaking and want to know how the process of 2D animated short film is. There are many techniques required to create 2D animation including in Production; Separating elements, line work, tweening, virtual camera and in Postproduction; composition, color correction, Multi-level and these techniques can be used to create 2D works, to get great results.

■■ References

Animation learning guide forflash: Motion tweens [Web log post]. (2011, August 15). Retrieved from http://www.adobe.com/devnet/flash/learning_guide/animation/part05.html

Clarke, C. G. (2002). *Professional cinematography.* Los Angeles, CA: A S C Holding Corp.

Dunlop, R. (2014). *Production pipeline fundamentals for filmand games.* Burlington, MA: Focal Press.

Ghertner, E. (2010). *Layout and composition for animation.* Burlington, MA: Focal Press.

Gulati, P. (2010, June, 9). Step-by-Step: How to make ananimated movie [Web log post]. Retrieved from https://cgi.tutsplus.com/articles/step-by-step-how-tomake-an-animated-movie--cg-3257

Hernandez, E. A., & Ghertner, Ed. (2012, September 1). *Layout and composition for animation* (pp. 96-194). Retrieved from https://tandfbis.s3.amazonaws.com/fp-usermedia/uploadedFiles/Layoutandcomposition foranimationch3.pdf

Klazema, A. (2014, March 3). 2D animation: A comprehensiveguide to the fundamentals [Web log post]. Retrieved from https://blog.udemy.com/2d-animation-2

Monahan, K. (2011, August 25). Applying transitions [Web log post]. Retrieved from http://blogs.adobe.com/kevinmonahan/2011/08/25/using-effects-as-transitions/

Monteil, E. (2017, August 25). Introduction to Lai Thai (Traditional Thai Art) [Web log post]. Retrieved from https://medium.com/@eric.monteil/introduction-to-lai-thai-traditional-thai-art-4fcc2f68879b

Naranjo-Bock, C. (2011, October 3). Effective use of color andgraphics in applications for children [Web log post]. Retrieved from http://www.uxmatters.com/mt/archives/2011/10/effective-use-of-color-and-graphics-in-applicationsfor-children-part-i-toddlers-and-preschoolers.php

Peaty, K., & Kirkpatrick, G. (2002). *Flash cartoon animation.* Berkeley, CA: Apress.

Smith, A. (2013, September). 2D animation [Web log post]. Retrieved from https://prezi.com/-oopm2w6orgt/2d-animation

Sumrongthong, B. (2008). The blending of Thai-Muslim musical performances in Southern Thailand. *MANUSYA: Journal of Humanities, Special Issue(16),* 99-113. Retrieved from https://scholar.google.com/citations?view_op=view_citation&hl=en&user=89ogo2 AAAAAJ&citation_for_view=89ogo2AAAAAJ:Zph67 rFs4hoC

Whitaker, H., & Halas, J. (2002). *Timing for animation.* Oxford, U.K.: Focal Press.

Willett, N., Lee, I., & Castaneda, O. (2010, March 29). Animationproduction pipeline [Web log post]. Retrieved from http://www.cs.princeton.edu/~noraw/animationProductionPipeline.html