

Preserving of Hornbill Bird through 3-Dimensional Animation Clips

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Abstract. Post-Covid-19 pandemic conditions, the use of digital technology in animation and multimedia can produce works that can be used as a solution to existing problems, especially in the conservation of the Indonesian Borneo hornbill. The design in the form of a film or animation clip aims to educate the importance of hornbill conservation. The method used in this study uses a qualitative descriptive method with data collection and data processing, in the technical implementation of the animation pipeline, namely the stages of pre-production, pre-production, and post-production. The results of this study have succeeded in using these stages and producing a video or animation clip entitled The Spirit of Ampong with three-dimensional techniques. It is hoped that the results of the design will have a positive impact on the conservation of the hornbill.

Keyword : animation, bird, hornbill, technology, 3d

1. Introduction

During the Covid-19 pandemic, people have changed their lifestyles and stepped into the pattern of the digital world in living a life adapting to technological developments [1, 2]. Now technology is not only used by teenagers who are in urban areas, but now almost all groups use technology such as smartphones. So that the digital world is starting to get crowded, and those who at first could not use technology such as computers or smartphones, now they are getting used to it [3]. This encourages someone to start communicating through the digital world, one of which is the use of animation, especially with technical three dimensions (3D). Three-dimensional animation is considered important in the digital world because, with the development of animation, human resources have increased [4].

Three-dimensional animation is very developed [5, 6], when talking about animation, now it is no longer limited to films but three-dimensional animation has been widely used as a medium for making advertisements, video clips, games, and digital art such as NFT, even now with the development of technology, animation Three dimensions can be realized with a 3D printer. Three-dimensional animation is now not only limited to entertainment but can be used as a medium of information or education [7]. This development opens up opportunities for human resources, but in three-dimensional animation, it is assessed that special expertise is needed in operating skills both in terms of mastery of capable hardware and software.

Currently, the animation is developing very fast, with the emergence of many animated films that are aired on National TV. Animation is a mechanism for applying dynamic motion effects to static objects that do not move in space and time so that the object seems to be moving very realistically.

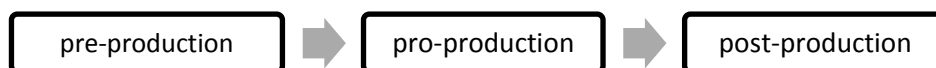
When talking about animation, people talk a lot about entertaining cartoons. Animation can be made into two formats, namely three-dimensional (3D) animation, we will move objects in space with the coordinates of the X, Y, and Z axes. There are many software tools for creating three-dimensional (3D) animation, ranging from paid or free software. one of which is Blender [8], Blender is software that is widely used, for personal, study, or commercial industries.

That's why researchers try to take advantage of this to participate in nature conservation efforts. The ivory hornbill is an icon of tropical forest conservation in Asia [9]. The high number of poaching makes these animals increasingly rare. The slow breeding rate, with one pup per year, makes the condition of sustainability in nature threatened. Usually, hunting is carried out for several reasons, ranging from taking ivory hornbills for jewelry purposes, hornbills for personal pets & without a permit, to other purposes that make the existence of hornbills increasingly threatened. The International Union for Conservation of Nature (IUCN) includes this bird in critically endangered status. when rescue is not immediately carried out, this beautiful bird may be just a memory [10].

The story of The Spirit Of Ampong originates from our concern for the preservation of hornbills, especially hornbills in Kalimantan. A qualitative method with descriptive techniques and film testing techniques will be carried out. The purpose of this research is the story of The Spirit Of Ampong as an effort to preserve the existence of hornbills in the wild. Three-dimensional (3D) animated video clips open one's eyes to the conflict between hornbill hunting in the wild. so that many people care about and participate in saving hornbills at this time.

2. Methods

The research method in this study was carried out through descriptive research. Processing data in the search for meaning influences the content of the research conducted [11]. At another stage, using the principle of creating creative artwork in social research work or what is called Art Based Research (ABR). Implementation techniques and data collection using Pipeline Animation [12, 13, 14] parameters which are designed for the implementation of making films or animation clips consisting of pre-production, pro-production, and post-production implementations. As an illustration in Figure 1 below:



Figur 1. Animation Pipeline Transformation Process

At this stage, the process of pre-production stages is described through data search, ideas, storylines, character studies, to storyboards. The second stage is pro-production through the implementation of pre-production at the pro-production stage, one of which is making character modeling, and character rigging, up to the character animation stage or the process of moving characters using three-dimensional software. In the final stage, namely the post-production stage, namely the clip or video editing process so as to produce a complete film up to the media publication process. The process of these stages is implemented in the research process carried out in designing a film or animation clip with the title The Fictional Story of The Spirit Of Ampong so that the form of development from words to visuals or images is in the form of animated video clips.

3. Results and Discussion

Fictional Story The animated film Spirit of Ampong is about the life of an innate hornbill creature known to the "Ampong" people. Ampong is a hermit who makes a magical pact with the hornbills. His figure is brave and kind, and also has magical powers. Ampong is friendly with Sipet and Annie from the human race. Their funny behavior turned around when they eradicated the poachers who were targeting

the hornbills for sale and purchase. Ampong who heard about the incident was angry and sent several hornbills to protect Annie while Ampong headed for the scene of the incident. so angry, there was a battle between Ampong and the hunters. Ampong won the battle, then Ampong taught them about the importance of the hornbill's life.

The story is designed to make a film or three-dimensional animated fiction story clip. In the process, the researcher carried out the stages of the process of making an animated film in accordance with the animation pipeline design process, the stages were carried out as follows:

3.1. Pre-Production

One of the pre-production stages in the animation film production process is the design of story ideas, scripts or scenarios, character designs, storyboards, and concept art to voice over. This stage is breaking down the story into a visual study of the story being designed. The following are the results of the dissection of the story contained in the scenario or storyline in the story design of The Sprit of Ampong which is anointed in table 1 below:

Tabel 1. Contoh Storyline The Spirit of Ampong

Page	Scene	Character	Properties, Settings, Background	Narration	Dialogue	Audio/Music
1	Prologue, shows a person making a pact with a hornbill. Showing the greatness of Ampong, exterminating the hunters. it shows Sipet and Annie as Ampong's friends in action with Ampong. It shows a sipet walking in the forest and sees Annie being surrounded by hunters and being asked about the whereabouts of hornbills in the forest	Ampong, Hunter, Sipet & Annie	In the forest	Once upon a time there was a man who made a magical pact with the hornbills. This human figure is known as Ampong, he dedicates himself to always faithfully guarding the hornbills that are still alive. In addition, Ampong is usually accompanied by his 2 friends, namely Sipet and Annie, the two of them are brothers and sisters of a firewood seeker in the forest who was rescued by Ampong, and now the two of them are always attached to and help Ampong in carrying out his duties. One day Sipet was walking in the forest, one day when he heard a loud voice and heard Annie's voice, he went to the sound.	-	Stressful backsound, Calm background, typical Kalimantan music, sounds in the forest
2	Annie, who was trying not to answer/tell the position of the hornbill to the hunter. Annie was pushed by hunters because they don't tell where the birds are hornbill. Sipet who panicked ran towards the place ampong.	Annie dan pemburu, Sipet	In the forest	-	Hunter: tell me where the hornbill is. Fast Annie : No! until whenever I don't want to tell the position of the birds to you! Hunter: Oh so, all right we'll make you talk	Stressful backsound

3	Ampong was silently standing in his house. Sipet came shouting the name of Ampong. Ampong was surprised and asked Sipet. Ampong ordered the hornbills that were around his house to help Annie	Ampong, Sipet	At the ampong house, near the ampong house	After listening to the sipet's explanation, Ampong immediately ordered the hornbills that were around his house to come and help Annie.	Sipet: AMPONG Ampong: what happened? Sipet : explained what he had just seen about Annie.	Calm backsound, typical Kalimantan music instruments, sounds in the forest
4	Ampong asked the hunter. Hunter explained. Shows annie, sipet, and ampong and the hornbills stunned on a cliff after defeating poachers	Ampong, annie, sipet, dan burung rangkong	In the forest	After the hunters lost, Ampong and Sipet immediately rescued and released Annie and the hornbills that were caught by the hunters. After that, Ampong promised to protect the forest and protect the population from hornbills.	Sipet: AMPONG Ampong: what happened? Sipet : explained what he had just seen about Annie.	Victory backsound, calm backsound, typical Kalimantan music instruments, sounds in the forest

The storyline designed above is a summary of the fictional story of the three-dimensional animated film *The Spirit of Ampong*. From this story, it can be explained that the characters used in this film consist of four characters, namely Ampong who is the main character, and Annie, Sipet, the hunters who are the other characters. The depiction of these figures is obtained from the collection of references to be used as material for the concept art process to be designed. Reference concept art can be seen in Figure 2 below:



Figure 2. Concept Art Reference

After these references, the researcher designed a concept art consisting of character studies, property studies, and background studies of the story, namely the fictional film *The Spirit of Ampong*. These references are formed from sketch designs to digital processes. The following is an example of a character study designed by the main character Ampong, which can be seen in Figure 3 below:

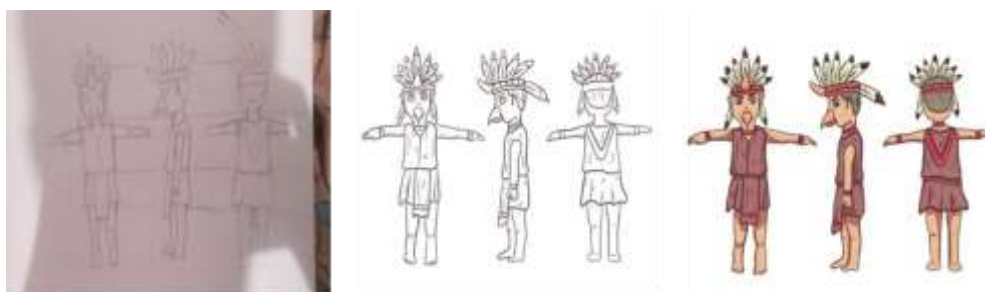


Figure 3. Character Design Figure of Ampong

After designing the character study of the Figure of Among design, the design was also carried out on other characters up to looking for references to property and background studies. After the design, the next step is the researcher does the storyboard design from the results of the story that has been designed. The following is an example of the storyboard design process described in Figure 4 below:



Figure 4. Example of storyboard design

3.2. Pro-Production

At the Pro-Production stage, the next process of making animated films is carried out, namely the process of Character Modeling, Props or Property Modeling, Rigging Process, Layout to Animation. The pro-production stage is carried out when the previous stage has been completed. The character modeling process is carried out when the character study process has been completed, then the researcher transforms from the visual to the modeling stage process using the Blender application which is a three-dimensional modeling software. As shown in Figure 5 below:



Figure 5. Example of character modeling figure of among

The design of character modeling besides the Among character, was also designed for other characters such as the sipet character, Annie character, and hunter 1 and hunter 2. The modeling has included color details, textures, and materials in all the modeling designs. In addition, the process of modeling design is also carried out on visual properties or assets and also the background used in the animated film to be designed. As shown in Figure 6 and Figure 7 below:



Figure 6. Example of modeling of property



Figure 7. Example of modeling of background

3.3. Post-Production

One of the post-production stages in the animation film production process is the process of rendering, compositing, sound, and editing up to the publishing stage. Rendering is used to produce a film or animation clip that has been designed. After the results of the animated film have been rendered, the next process is the editing stage using video editing software to combine video clips into a complete video, including sound effects, and back sound with acceleration or deceleration settings in the designed video. The following are the results of the animated film *The Spirit of Ampong* which has been designed in Figure 8 below:



Figure 8. Example of results of the animated film *The Spirit of Ampong*

From the results of the process of designing an animated film entitled *The Spirit of Ampong*, a process has been carried out on the design of the animation pipeline process so that the results of the film that has been designed are finished with results that are considered very good. Starting from the concept of designing ideas, determining stories, designing character studies, property studies, background studies, storylines, and storyboards, to the post-production process from the rendering stage to publishing. As described in the stages that have been carried out in table 2 below:

Table 2. Animation pipeline stages process

No	Pipeline Animation	Film <i>The Spirit of Ampong</i>	Result
1	Pre-Production	done	successfully
2	Pro-Production	done	successfully
3	Post-Production	done	successfully

4. Conclusion

The process of making the fictional story film *The Spirit of Ampong* was made as an effort to raise awareness among the public, especially young people, that it can be used as a solution for educational facilities on the importance of strengthening nature, especially in the conservation of hornbills through three-dimensional animated fiction films. The design of animated films is carried out using the process of designing animated films, namely the animation pipeline from the pre-production, production, to post-production stages and the stages of animated film production are considered successful. So that researchers will continue this research to measure the effectiveness and efficiency of the animated films that have been designed.

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