Adaptation of Riau Province Folklore to a 3D Animation with Unwrapping Materials and Folley Effect Method

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***Abstract*—Folklore is a story that originates from the community and develop in the community in the past which is characteristic of each nation. In the Rokan Hilir area there is temple that is said to be a legacy of the Green Princess and can be used as historical evidence that this story really exists. The story of Putri Hijau is a story that develop in Pekaitan, Rokan Hilir, Riau. But now, to find out how the story of the Green Princess is very difficult because there is no visual media, even written literature is also difficult to find, and it is feared that this story will be forgotten over time. Even today not all people know this story. Therefore, visual media in the form of 3D animation was made so that people can find out about this story and have visual media that can be used to preserve the folklore in their area. This 3D animation was created using the method of unwrapping materials and foley effects. The results obtained after making this 3D animated film are using the unwrapping method resulting in a more detail, neat texture, so it fits into an object that is the focus of the camera. And by using the Foley effect method, a more detailed and natural sound is produced. In addition, this fil is also made using a blender application and follows the stages in making animation.**

Keywords—Folklore, 3D Animation, Unwrapping Materials, Foley Effect

I. INTRODUCTION

Animation is a process for moving an object. In this case, the animation creation process can be done using various technologies, including CGI (Computer generated Image), Motion picture, 3D animation editor software, special effects, and 3D models [1]. In addition in making animated films, of course, storytelling and foley effects are needed. Storytelling is a way to convey a story to an audience, either in the form of words, images, photos, or sounds. Meanwhile, foley effect is a process of making audio to make the sounds in a film more detailed. To be able to produce animated films with a clear appearance and detailed sound, the unwrapping materials and foley effect methods are applied. Where the materials unwrapping technique that functions to regulate the coordinate mapping of an object so that it can place or map 3D textures precisely according to the design that has been designed so that 3D object will have a texture that is almost like original when compared to texturing without applying coordinate mapping. The textured results might look sloppy and the foley effect is an audio creation to make the sounds more detailed.

The story of Green Princess is a folk tale that originated from Tanah Putih, Rokan Hilir and has begun to be forgotten for now and one way to introduce it is to make a visual form so that it can be seen by people from various circles. Therefore, the authors propose to make a 3D animated film that tells the story of Green Princess which can display objects with a clear appearance and a more detailed sound. This is so that the audience can enjoy good quality films. In addition, this animated film was created using the Blender application. Based on the proposed proposal, it is hope that the surrounding community can find out about the story of Green Princess in the Tanah Putih area, Rokan Hilir, which beginning to be forgotten and there is no difference in the delivery of one person another.

II. 3D ANIMASTION DEVELOPMENT TECHNIQUES

A. Unwrappping Materials

Unwrapping materials is a modifier that functions to manage coordinate mapping an object [2]. Coordinate mapping is required for object that have mapped material (Textured material). The unwrapping modifier allows controlling how the map is applied to the selected sub objects [3]. When a model is created using polygons for the 3D model, UV coordinate can be generated for each point in the mesh. One way of 3D modeler is to define a triangular mesh at the seams, this automatically placing the triangles on a flat page. If the mesh is a UV sphere, for example, the modeler might turn it into a rectangular projection. Once he model is opened, the draftsman can paint triangles or textured squares on each individual face, using the open mesh as a template. When the images are created, each triangle will map to the exact texture of the unwrapping pattern choosing the use of unwrapping

materials can help achieve a more realistic three-dimensional model result target [4].

B. Foley Effect

Foley effect is a process of making audio to make the sounds in a film more detailed, foley effect which is one of the sound elements in the film has a fairly vital role as a medium for delivering non-verbal information in an auditive manner. This information will then form the audiences auditive perception which has an impact on the audience on the meaning of a scene or film as a whole [4]. Examples of the sound of feet, doors, cloth scraping, or hitting. The first person to apply this method in a film is Jack Donovan Foley (1891 – 1967). Foley sound is usually recorded in a studio called the foley stage. A foley artist watches the film to synchronize while recording the required sound. For example in making the sound of footsteps. Foley sound effect is the most responsible and realistic sound effect for applying pressure in a film.

Foley is the art of manipulating sound in everyday life into a film, video, game so that the film or video looks more natural. Foley itself is a very important element in the postproduction process in terms of audio in a film, game and video. Without foley, a film will feel empty and empty. The artist who did the dialogue in the film seemed to be doing dialogue in a vacuum without foley. With the existence of foley, the film becomes more alive because consciously or not the audience wants detailed sound from the rubbing of clothes, furniture, and so on. In addition, foley can also add a more impression to a reaction, for example in an action film where there is a hit scene or in a comedy film that has sounds that appear to be jokes. Foley is usually also used to replace unwanted noises in a film, for example the sound of a motorized vehicle that enters during shooting. The parts of work in foley are:

- Foley artist : The person who works as a foley artist has a duty to mimic the behaviour of the player from the film that you want in foley,
- Foley Operators : to record foley performed by foley artist, this foley crew is also in charge of mixing sounds that have been obtained during foley.
- Foley Stages : the room where foley artists perform foley.
- Foley Operator Room : a place for foley operators to record foley activities performed by foley artists.

III. METHODOLOGY

A. Modelling

The character and property modelling in this study comes from the book by Sudarno [5]. Here are some character models created using texture unwrapping materials.

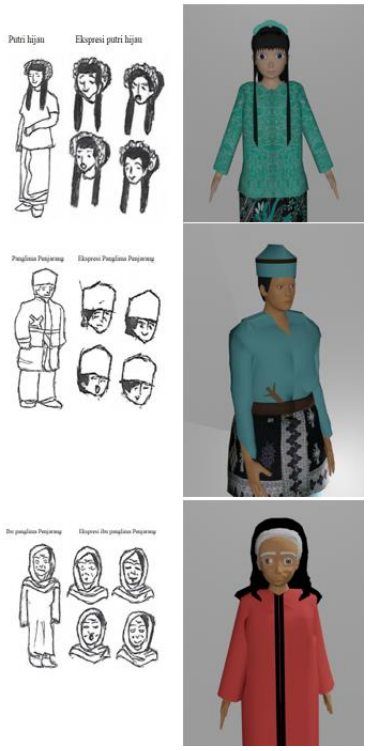

Fig. 1. The Sketch and Concept Art

B. Texturing

After presenting the previous 3D results, we will discuss the texturing process by unwrapping materials. The texturing will be done on the cylinder object because it is a difficult object to attach a texture mapping UV. If texturing is not done by technique whatever it will be obtained the following texturing.

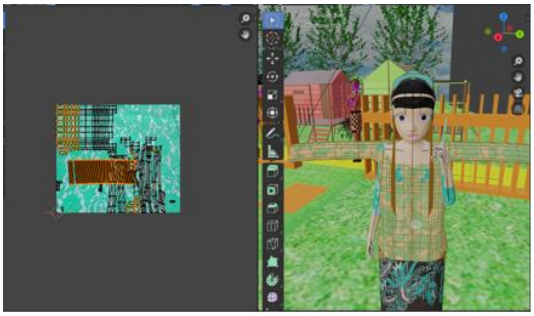

Fig. 2. The results of texturing without using technique

If you pay close attention, texturing without using any technique will cause the texturing to be messy and look untidy. The following will discuss the texturing process using unwrapping materials.

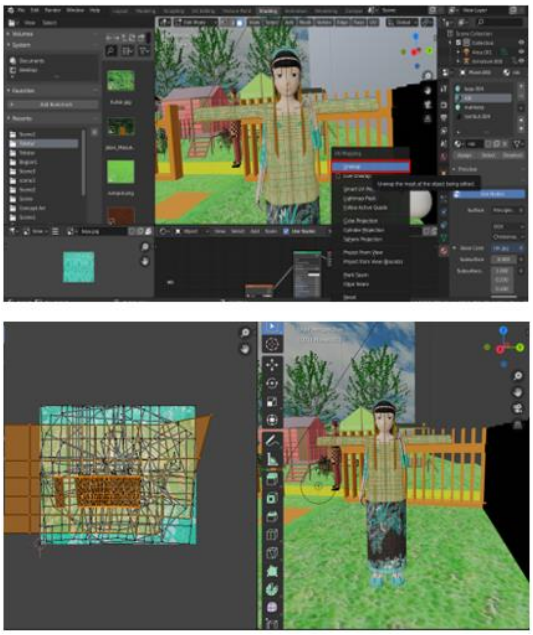

Fig. 3. Mapping process with unwrapping materials

Texturing done without using any technique will look messy and irregular in texture. While the texturing done by using unwrapping materials looks tidier and more organized, the object of the image that you want to text is also more detailed and clearer.

Fig. 4. The results are textured using unwrapping materials

IV. Analysis Of Evaluation Results

After the film product has been made, the film will be validated. And the validation process was carried out by the Riau Malay Customary Institution. The validation process is carried out providing a checklist document containing statement relating to the content and validity of the story which will be answered with yes or no answers. Following are the results of the checklist document related to film validation.

From this test, the results obtained were 100% yes which means this film already has the truth or validity of the story, content that is worth seeing, and a plot that is easy to understand. Furthermore, to test the unwrapping materials method, it was done by comparing 2 objects made with different methods, namely the unwrapping materials and UV Mapping methods. After the two objects were made, several people were asked to make comparisons of the results of these two methods so that the writer would draw conclusion.

And for the foley effect the test will be carried out by displaying videos made without foley effects and animated films that have applied the foley effect technique later. Respondents for conducting this test were student majoring in information technology, especially the informatics engineering study program who understands about making animate film with techniques. This is done so that the process of comparing the 2 methods is carried out by people who know how the process of comparing the textures of the UV Mapping and Unwrapping materials methods so that respondents have a reason why they choose this method so that later they can give their opinion about these two methods. The following is a chart related to the unwrapping materials test.

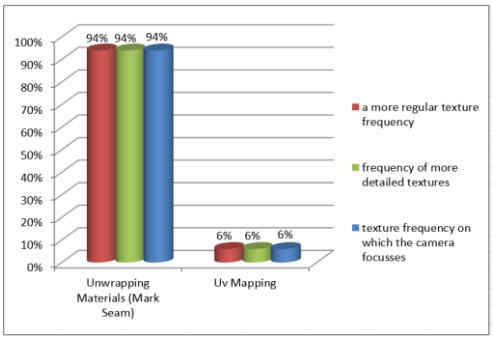

Fig. 5. Respondents for a more regular textures

Based on fig 4, the value is 94% where the unwrapping materials method produces a more regular, detailed texture, and is suitable for the texturing that is the focus of the camera. Meanwhile, UV mapping produces a value of 6%. From the tests that have been described, it is concluded that the unwrapping materials method is suitable for texturing with more regular, detailed variables and becomes the focus of the camera. In addition to the above explanation, next is a graph of the results of respondents' opinions on the unwrapping materials and UV mapping method.

Statement :

P1 : Unwrapping materials technique is better than UV Mapping technique

P2 : UV mapping is generally good for objects that are not the focus of the camera, but if the object is the focus of the camera, you should use Unwrapping materials because of the detail of the textures.

P3 : UV Mapping technique is better than unwrapping materials

P4 : UV Mapping shows texture images to be more detailed than unwrapping materials

P5 : Unwrapping materials look tidier than UV Mapping

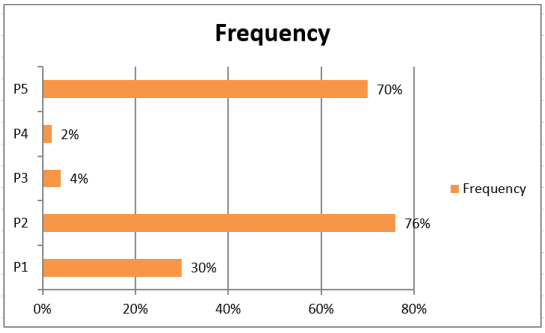

Fig. 6. Validator on UV Mapping and Unwrapping Materials Method

Based on the test chart above regarding the respondents opinion about the UV mapping and unwrapping materials method, it can be seen that there are 70% of respondents who choose that "Unwrapping materials look neat when compared to UV Mapping" this statement is called P5, then 2% of respondents chose that Texturing with UV mapping shows texture images to be more detailed than Unwrapping materials "This statement is called P4, there are 4% of respondents who think that" UV Mapping technique is better than Unwrapping materials "This statement is called P3, 76% of respondents stated that" Texturing with UV mapping in general, it is good to use for objects that are not the focus of the camera, but if the object is the focus of the camera, you should use Unwrapping materials because of the detail of the textures. better than UV Mapping "this statement is called P1. From the five statements above, the highest 3 percentages were obtained, namely 76% for P2, 70% for P5, and 30% for P1. From the results obtained, it can be concluded that the UV mapping method is suitable for objects that are not the focus of the camera or just ordinary texturing, while unwrapping materials are suitable for the texturing of objects that are the focus of the camera because they are tidier and better.

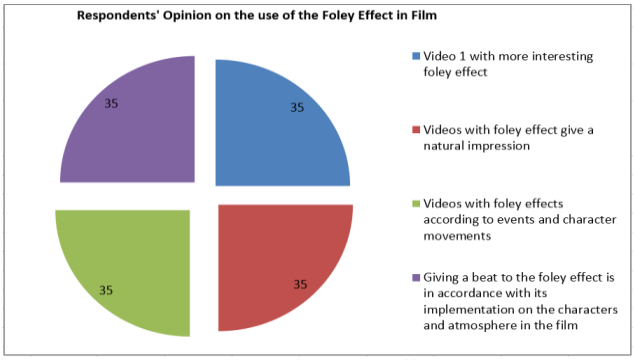

Fig. 7. Responden Opinion to use of the Foley Effect in Film

The graphic above is the answer from 35 respondents, where all 35 respondents chose that the video with the foley effect is more attractive, can give a natural impression, according to events, events, and character movements, and the beats are in accordance with the implementation of the characters and atmosphere in the film. Because of the 35 respondents all of them support the use of the foley effect method, it can be concluded that 100% of the use of the method with the foley effect is better than without the foley effect.

V. Conclussion and Future Works

From this research, we can conclude that the texturing with unwrapping materials got 94% results related to texture, detail, and objects that fit into the focus of the camera compared to the uv mapping value of 6%. In addition, unwrapping materials gets 70% results where the texture of the object is neater than UV mapping, and for the details of the UV mapping method it gets 2% results, which means that this value is lower when compared to the details in the unwrapping materials method, besides that there is 76% result that the object by using the texture method unwrapping materials suitable for objects that are the focus of the camera. And there is a value of 30% that texturing with UV mapping is better than unwrapping. So it can be seen that the unwrapping materials method is more detailed, neat, and this object is suitable to be the focus of the camera. Meanwhile, texturing with UV mapping is suitable for objects that do not pay attention to detail or are not the focus of the camera.

The use of the foley effect method gets 100% results which can be proven by the answers of respondents from 35 people all of whom supports the use of the foley effect method which makes the film more attractive because it can give a natural impression according to events, events and character movements, and the beats are in accordance with the implementation of the characters and atmosphere in the film.

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