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Design and Build 3D Animation Soto Banjar Using Luther Sutopo's Method for Blender-Based Cultural Introduction

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***Abstract*— Soto Banjar is a signature culinary heritage of South Kalimantan with deep cultural significance in Banjar society. However, its introduction to the younger generation remains limited, particularly through modern digital media. This study aims to design and develop a Blender-based 3D animation using Luther Sutopo's multimedia development method as an innovative educational medium for introducing Soto Banjar culture. The development followed the stages of conceptualization, design, implementation, and evaluation. A relatable main character named Sophie was created to represent the target audience. Character assets were sourced from Mixamo and environmental assets from Sketchfab. Evaluation involving 35 respondents showed high effectiveness (mean score 4.50/5), indicating that the animation successfully delivers cultural values in an engaging and educational manner. This work offers a novel contribution by systematically applying Luther Sutopo's method to culinary cultural preservation through 3D animation.**

***Index Terms*— Soto Banjar; 3D Animation; Blender; Luther Sutopo; Educational Media; Local Culture**.

I. INTRODUCTION

Soto Banjar holds a special position in Banjar culture, serving not only as everyday food but also as an essential element in various traditional ceremonies such as batasmiah (akikah), bakawinan (wedding feast), and baaruhan (communal prayer gathering) [1],[2], [3]. This dish embodies deep cultural values, including togetherness, respect for ancestral traditions, and the preservation of local identity passed down through generations. Beyond its distinctive flavor derived from unique spices and coconut milk, Soto Banjar functions as a social and cultural symbol that strengthens community bonds during important life events [4]. Despite its rich cultural significance, the transmission of knowledge and appreciation for Soto Banjar among the younger generation is increasingly challenged by the rapid dominance of global digital content, which often overshadows local culinary heritage and reduces opportunities for meaningful cultural engagement [5].

Previous studies on cultural promotion have largely relied on 2D media, websites, brochures, and conventional videos. These approaches, while useful, tend to offer limited interactivity and immersion, making it difficult to capture the attention of digital-native youth who prefer dynamic and visually rich experiences. Although several 3D animation [6],[7],[8],[9],[10] projects have been developed for cultural preservation in Indonesia and other countries, most of them focus primarily on tangible heritage such as traditional architecture (e.g., Banjar traditional houses), folk dances, or handicrafts, with very limited attention given to intangible cultural elements, particularly culinary heritage [11],[12].

Furthermore, many existing works lack a systematic development framework, resulting in productions that are technically impressive but less effective in achieving educational and cultural transmission goals. The application of a structured multimedia [13] development method like Luther Sutopo's in the creation of 3D animation specifically for local culinary introduction remains significantly underexplored in the literature [14].

This study addresses that research gap by developing an immersive Blender-based 3D animation using Luther Sutopo's structured multimedia development method. The main contribution of this work lies in the integration of a relatable young female character named Sophie as an audience proxy, which allows younger viewers to emotionally connect with the story and content. This approach is combined with systematic development stages from conceptualization to evaluation to ensure both technical quality and educational effectiveness [15].

Cultural messages are conveyed through multiple layered strategies, including narrative integration that follows Sophie's journey of discovery, contextual visualization of traditional warung soto environments, family and ceremonial dining scenes, symbolic use of warm lighting and authentic textures, and emotional engagement through character expressions and

dialogues that evoke pride, nostalgia, and appreciation for Banjar culinary identity. By doing so, this research not only introduces Soto Banjar but also strengthens cultural awareness in a format that aligns with the preferences and consumption habits of today's younger generation [16].

II. METHODOLOGY

This research employed a Design and Development approach focused on creating educational digital media. Luther Sutopo's multimedia development method was adopted because of its clear and systematic framework, which consists of four main stages: Conceptualization, Design, Implementation, and Evaluation [17]. This method is particularly suitable for culture-based 3D animation [18] projects as it ensures a structured workflow from idea formulation to final evaluation [19],[20].

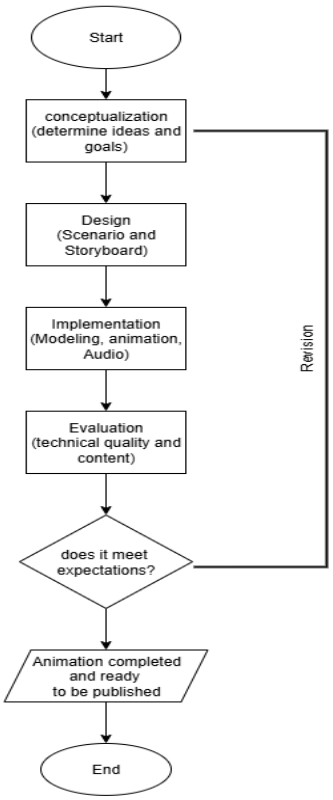

Fig 1. The Development Process of Soto Banjar 3D Animation Using Luther Sutopo's Method

A. Conceptualization

This stage involved literature review and observation to identify the cultural values, historical background, and social functions of Soto Banjar. The main goal was formulated: creating engaging 3D animation that introduces Soto Banjar to the younger generation.

B. Design

At the design stage, detailed planning was carried out to ensure the animation's narrative and visual elements were well-structured and aligned with the research objectives. This process included scriptwriting, storyboard development, character design, and scene sequencing. The script was crafted to deliver clear cultural messages while maintaining an engaging storyline. Storyboards were created to visualize each scene, including camera angles, transitions, timing, and dialogue. Character design focused on developing Sophie as a relatable young female character who represents the target audience — the younger generation. Sophie's appearance, personality, and behavior were intentionally designed to foster emotional connection and identification, making the cultural learning experience more immersive and personal for viewers.

C. Implementation Stage

The implementation stage was carried out using Blender 3.0 software. Ready-made character assets were imported from Mixamo and further modified, while environmental assets were obtained from Sketchfab. Various technical processes were executed according to the storyboard, including 3D modeling adjustments, texture painting, material shading using node systems, rigging, keyframe-based animation, camera movement, lighting setup, and audio synchronization. All processes were conducted iteratively to ensure smooth transitions and visual consistency.

D. Evaluation Stage

Evaluation was conducted using mixed methods. A total of 35 respondents (25 students and 10 lecturers) participated through purposive sampling. A 5-point Likert scale questionnaire was used to measure four aspects: Visual Quality, Narrative Clarity, Cultural Content Accuracy, and Educational Effectiveness. Semi-structured interviews were also conducted with 8 respondents. Quantitative data were analyzed descriptively, while qualitative data were analyzed thematically.

III. RESULTS AND DISCUSSION

The implementation of Luther Sutopo's multimedia development method in this study has successfully resulted in a complete Blender-based 3D animation that effectively introduces Soto Banjar as a valuable cultural heritage of South Kalimantan. Through systematic stages from conceptualization to evaluation, the final animation product, featuring the main character Sophie, demonstrates high technical quality and strong educational potential. This section presents the technical specifications of the produced animation, key highlights of the production process, detailed evaluation results from respondents, and a critical discussion on the effectiveness of the animation as a cultural introduction medium, including its strengths, limitations, and contributions compared to previous studies.

A. Technical Specifications of the Animation

The final 3D animation of Soto Banjar was successfully developed with the following technical specifications. The animation has a total duration of 4 minutes and 45 seconds, rendered in Full HD resolution (1920 × 1080 pixels) at 30 frames per second using the Eevee render engine in Blender. These specifications were chosen to balance visual quality and rendering efficiency, making the animation suitable for educational dissemination across various digital platforms.

TABLE I. TECHNICAL SPECIFICATIONS OF THE SOTO BANJAR 3D ANIMATION

Specification	Details
Duration	4 minutes 45 seconds
Resolution	1920 × 1080 (Full HD)
Frame Rate	30 fps
Renderer	Eevee
Output Format	MP4
Hardware	Intel Core i7, 16GB RAM, NVIDIA RTX series
Average Render Time	2–8 minutes per scene

B. Production Highlights

The production process closely followed the storyboard developed in the design stage. Key activities included character modeling and customization from Mixamo assets, texture painting, node-based material shading, rigging, keyframe animation, camera and lighting setup, as well as audio synchronization. These processes are illustrated in the following figures.

Fig 2. Sophie's Character Modeling Process Using a Blender

Sophie's character is then given additional colors and visual appearance adjustments using Texture Paint. This coloring is done to adjust expressions, clothes, or facial elements to make the characters appear more alive and in harmony with the local culture represented.

Fig 3. Application of Texture Paint on Sophie's Character

Once the basic texture is applied, the next stage is to arrange the material using the node system in Shader Editor. Using Principled BSDF, the character's skin, clothing, and hair are arranged to have realistic lighting and light reflection in the scene.

Fig 4. Sophie's Character Setup Using Shading Node

The rigging process is done by connecting bones (armature) to Sophie's character so that they can be moved in animation. Mixamo's innate bones are used, then modified in position in Pose Mode. This bone arrangement allows the character to perform with movements such as walking, sitting, and talking.

Fig 5. Rig Bone Display on Sophie's Character in Pose Mode

Sophie's character is animated by inserting a keyframe on the Blender Timeline. Movements such as stepping, turning their heads, pressing the phone, and talking are animated gradually. Movements are adjusted to the narrative dialogue and storyboard to support the storyline well.

Fig 6. Sophie Character Animation Timeline and Keyframe View in Blender

The camera is focused on Sophie's character throughout the scene. The viewing angle is adjusted so that Sophie's facial expressions and body gestures are clearly visible to the audience. Lighting is focused on the characters, both in natural light and warm light, to create an atmosphere that supports the narrative.

Fig 7. Camera Position and Lighting in the Warung Soto Scene

Narration audio and character dialogue are synchronized using the Video Sequence Editor. The character's lip movements are manually adjusted to fit the narrative. Sound effects such as footsteps, city sounds, and background music are added to enhance the quality of the delivery.

Fig 8. Audio and Narration Arrangement View in Video Blender Editor

Rendering is done using Eevee Renderer because it is lighter and faster. The final output is saved in MP4 format with a resolution of 1920x1080, with a frame rate of 30 fps. Each scene is rendered according to the storyboard that has been created.

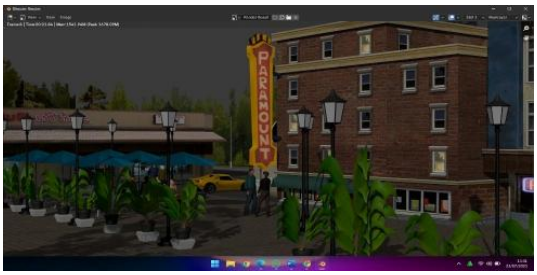

Fig 9. Scene Rendering Results Using the Eevee Engine

The final stage is done to put the scene together, add titles, and transition effects between scenes. If necessary, the final video is re-edited using an additional video editor app to ensure a balanced visual and audio result.

Fig 10. Final Rendered Animation Footage

This study demonstrates that the combination of Luther Sutopo's structured method and Blender 3D technology produces effective educational media for cultural introduction. Unlike previous studies that primarily utilized 2D animation or focused on tangible cultural heritage [11],[12], this work provides stronger character-driven storytelling and systematic development. The high evaluation scores (overall mean 4.50) confirm the animation's effectiveness in bridging traditional culture with the digital habits of the younger generation.

The success of this animation can be attributed to the integration of emotional design elements and narrative strategies [16], as well as the systematic workflow offered by Luther Sutopo's method [17]. These findings align with previous research on immersive technologies for cultural heritage preservation [15], which emphasize the importance of relatable characters and contextual visualization in enhancing audience engagement and cultural appreciation.

C. Evaluation Results

The animation received a very positive response from the respondents. As shown in Table 2, all aspects obtained high mean scores above 4.4

The highest score was obtained in the Cultural Content Accuracy aspect (4.57), indicating that the animation successfully presented the cultural values of Soto Banjar accurately. These results confirm that the use of a relatable character and immersive visualization effectively supports the delivery of cultural messages to the younger generation.

TABLE II. RESPONDENTS' EVALUATION RESULTS OF THE SOTO BANJAR 3D ANIMATION (N=35)

Aspect	Mean Score	Percentage	Interpretation
Visual Quality	4.51	90.2%	Very Good
Narrative Clarity	4.43	88.6%	Very Good
Cultural Content Accuracy	4.57	91.4%	Very Good
Educational Effectiveness	4.49	89.8%	Very Good
Overall	**4.50**	**90.0%**	**Very Good**

IV. CONCLUSION

This research has successfully developed a Blender-based 3D animation as an innovative educational medium for introducing Soto Banjar, one of South Kalimantan's most significant culinary heritages. By employing Luther Sutopo's structured multimedia development method, the project produced a high-quality animation that achieved strong acceptance from respondents, with an overall mean score of 4.50 out of 5. The animation effectively conveyed the cultural values of Soto Banjar through immersive visual storytelling, relatable character development, and contextual narrative that resonates with the younger generation.

The integration of a relatable main character (Sophie) combined with a systematic development process proved to be a highly successful strategy in bridging traditional cultural heritage with modern digital media. This approach not only enhanced viewer engagement but also strengthened the delivery of cultural messages regarding communal values, tradition, and local identity. Overall, the findings demonstrate that 3D animation can serve as a powerful and engaging tool for cultural preservation and education in the digital era.

For future work, several directions can be pursued to further enhance the impact of this research. The animation can be expanded into interactive formats such as Virtual Reality (VR) and Augmented Reality (AR) to provide a more immersive user experience. Additionally, the scope can be broadened to cover other traditional Banjar culinary heritage. Finally, larger-scale effectiveness studies using pre- and post-knowledge tests, along with longitudinal assessments, are recommended to measure the long-term impact of the animation on cultural awareness and appreciation among the younger generation.

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