

Implementation of 3D Animation Video-Based Learning Media in the Introduction of Silat Martial Arts in the Brotherhood of Setia Hati Terate (PSHT)

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ABSTRACT

Persaudaraan Setia Hati Terate (PSHT) is one of the organizations that has an important role in the development and preservation of martial arts in Indonesia. Saifullah An-Nahdliyah Islamic Boarding School is one of the educational institutions that organizes the teaching of martial arts of the Persaudaraan Setia Hati Terate (PSHT). However, in the learning process applied to the introduction of martial arts Silat Persaudaraan Setia Hati Terate at Saifullah An-Nahdliyah Islamic Boarding School, there are still problems that can affect the effectiveness of Silat martial arts learning for students, namely the unavailability of learning media that supports other than direct training at Saifullah An-Nahdliyah Islamic Boarding School. This study aims to implement 3D animation video-based learning media in the introduction of martial arts of the Setia Hati Terate Brotherhood at Saifullah An-Nahdliyah Islamic Boarding School. The data collection techniques used to obtain the research data needed in this study are observation techniques, interviews, documentation, and literature studies. 3D animation video for learning media introduction to martial arts Pencak Silat Persaudaraan Setia Hati Terate at Saifullah An-Nahdliyah Islamic Boarding School is made using Blender application. The concept of 3D animation video made in this research is to present the introduction of martial arts by making moving characters, which can be accessed offline.

Keywords: Implementation, Learning Media, 3D Animation Video, PSHT, Saifullah An-Nahdliyah Islamic Boarding School

1. INTRODUCTION

The development of information technology, especially in terms of 3D animation videos, has had a significant impact in various fields, including learning. 3D animation technology enables the creation of attractive, realistic and interactive visualizations, which can be used as an effective learning tool. In recent years, the use of 3D animated videos in educational contexts has increased rapidly, as they can help increase students' attraction, interest and understanding of various abstract or complex concepts.

Persaudaraan Setia Hati Terate (PSHT) is one of the organizations that has an important role in the development and preservation of Silat martial arts in Indonesia. PSHT was founded in the early 20th century with the aim of teaching and maintaining the cultural heritage of Silat martial arts. The organization has grown rapidly and become one of the most recognized and respected institutions in the practice and research of Silat martial arts in Indonesia (Dirhamsyah 2020).

Saifullah An-Nahdliyah Islamic Boarding School is one of the educational institutions that organizes the teaching of martial arts silat Persaudaraan Setia Hati Terate (PSHT). However, in the learning process that is applied for the introduction of martial arts Silat Persaudaraan Setia Hati Terate at Saifullah An-Nahdliyah Islamic Boarding School, there are still problems that can affect the effectiveness of Silat martial arts learning for students, namely the unavailability of supporting learning media other than direct training at Saifullah An-Nahdliyah Islamic Boarding School.

As a solution to overcome the problems that occur in the Silat martial arts learning process at Saifullah An-Nahdliyah Islamic Boarding School, in this research the author will offer 3D animation video-based learning media. 3D animation video-based learning media can produce a more interesting, visual, and interactive learning experience for students, making it easier to understand and master the concepts and techniques of Silat martial arts. 3D animation video for learning media in the introduction of martial arts of Persaudaraan Setia Hati Terate (PSHT) at Saifullah An-

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Nahdliyah Islamic Boarding School was made using the Blender application.

2. LITERATURE REVIEW

In the research conducted by (Kandouw, Kaparang, and Mewengkang 2022), Android-based learning media applications were applied to SMK N 1 Tondano for the subject "2D and 3D Animation". The results of this study concluded that the application of Android-based learning media applications can make the teaching and learning process more interesting and efficient, and help students understand the material presented by the teacher.

In a study conducted by (Baskara and Cahyaka 2023), 3D animation learning media using SketchUp was applied to structural elements of residential buildings at SMK Negeri 1 Kediri. The results of this study concluded that with the application of 3D animation learning media, there was a significant difference in student learning outcomes between the experimental class (XI-TKP 1) and the control class (XI-TKP 2). The experimental class using 3D animation media obtained an average score of 86.8, while the control class obtained an average score of 78.4. The 3D animation learning media was considered very feasible by validators and received very good responses from students, indicating that this media is effective in improving students' understanding of the material presented.

In a study conducted by (Daniati 2020), reference videos were used as a solution for learning 3D animation in the midst of the COVID-19 pandemic at SMK Negeri 3 Kasihan Bantul. The results of this study concluded that the application of reference videos as learning media helps students create animation movements that are more realistic and close to the motion of real objects. In addition, students are able to absorb learning materials well even without direct face-to-face learning with teachers, so that 3D animation learning can remain effective and efficient during the pandemic.

In the research conducted by (Ergantara and Sari 2023), the development of 3D animation video learning media based on Z-Cut and CapCut applications is applied to fourth grade IPAS learning at SDN 1 Wajakkidul Boyolangu Tulungagung. The results of this study concluded that the 3D animated video learning media developed had a good level of feasibility and applicability. The validation results show that this media obtained a percentage of 87.5% from media experts, 80% from material experts, and 92.5% from linguists. In addition, student responses to this learning media were also very good, with 80% in the Very Good category and 20% in the Good category. Based on these results, 3D animation videos based on Z-Cut and CapCut applications are considered effective in helping students understand photosynthesis material.

In research conducted by (Pratama and Putri 2020), regarding the application of 3D animation in learning media to recognize vocal letters for children aged 2-4 years at KB Syiarul Islam Tegal shows that the learning media developed has a high level of feasibility. Using a waterfall development model that involves pre-production, production, and post-production stages, the validation results show this media obtained an average of 81% on the first trial and 86.5% on the second trial after revision, which categorizes this media as very feasible. The 3D animation proved to be effective in attracting children's interest and making it easier for them to recognize vowels, overcoming boredom caused by the conventional methods previously used. The results of this study support the use of 3D animation as an interesting and effective learning tool for early childhood.

In research conducted by (Ferry 2020), Improving Student Biology Learning Outcomes Through the Application of Three-Dimensional Animation Video Media (3D). In this study, the application of three-dimensional (3D) animated video media proved to make a significant contribution in improving students' biology learning outcomes. By using this animation media, teachers can activate various learning styles of students, ranging from visual, auditorial, to kinesthetic, thus facilitating students to absorb information more effectively.

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3. METHOD

Research Stages

The stages of research that the author uses in this study can be seen in the figure below:

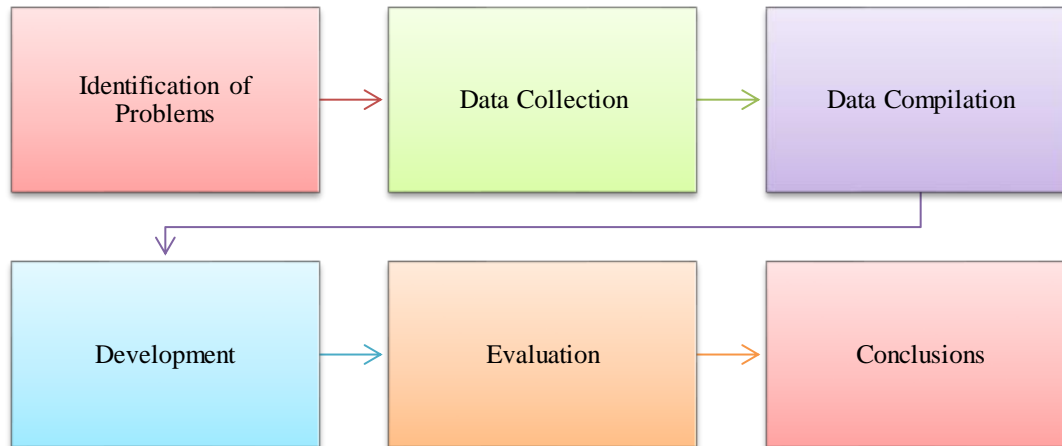


Fig 1. Research Stages

Figure 1 above is the stages of research conducted by the author in making 3D animation video-based learning media for the introduction of martial arts in the Persaudaraan Setia Hati Terate (PSHT) held at Saifullah An-Nahdliyah Islamic Boarding School. In the first stage the author identifies the topic of the problem to be solved. In the second stage the author collects the necessary research data related to the teaching material about the introduction of martial arts in the Brotherhood of Setia Hati Terate (PSHT) through the process of observation, interviews, documentation and literature study. In the third stage, the author analyzes and selects data that will be used in 3D animation video-based learning media that will be made in this study. In the fourth stage the author makes 3D animated video-based learning media using the Blender application. In the fifth stage the author evaluates the results of making 3D animated video-based learning media that has been completed. In the last stage the author draws conclusions from the final results of this research.

Learning Media

Learning media is a tool that facilitates the teaching and learning process and its role is to clarify the meaning of the information conveyed so that learning objectives can be achieved better and perfectly (Ergantara and Sari 2023). In addition, learning media is also a means to improve teaching and learning activities. Given the large variety of media, teachers must choose carefully in order to use them appropriately (Kustandi 2020).

3D Animation Video

3D animation video is a media that contains a collection of images that are managed in such a way as to create or produce movements equipped with audio so that it has a real or live impression and has and stores learning messages in it, when compared to other media, 3D animation video media has a high potential in delivering messages as well as its ability to attract interest and attention by students (Ferry 2020). Video animation media has been proven to have the ability to improve student learning outcomes in both cognitive and effective aspects (Furoidah 2020).

Persaudaraan Setia Hai Terate

Persaudaraan Setia Hati Terate (PSHT) or known as SH Terate is a silat “college” fraternity that aims to educate and form virtuous human beings, know right from wrong, be devoted to God Almighty, teach loyalty to one's own heart and prioritize brotherhood among citizens (members) and in the form of an organization that is a clump / stream of the Brotherhood of Setia Hati (PSH). SH Terate is one of the 10 martial arts colleges that helped establish the Indonesian Pencak Silat Association (IPSI) at the pencak silat congress on May 28, 1948 in Surakarta. SH Terate branches are spread across 200 cities/regencies in Indonesia and overseas commissariats in Malaysia, the Netherlands,

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Russia, Timor Leste, Hong Kong, South Korea, Japan, Belgium and France, with a membership (called citizens) reaching 8 million people (Dirhamsyah 2020).

Blender

Blender is one of the applications used to develop 3D animation learning videos. By using blender software we can create 3D animations and modify models, textures, light and complete post-processing in one application, Blender is a 3D animation modeling software that has game engine features, Blender was originally developed by the Dutch animation company NeoGeo as an internal animation program, Blender grew and developed with NeoGeo's projects”(Sakdiah 2022).

Multimedia Development Life Cycle (MDLC) Method

The Multimedia Development Life Cycle (MDLC) method is an appropriate method in designing and developing a media application that is a combination of images, sound, video, animation and other media (Bata 2024). The MDLC method has six stages as shown in the figure below (Fauzan Febriansyah and Sumaryana 2021):

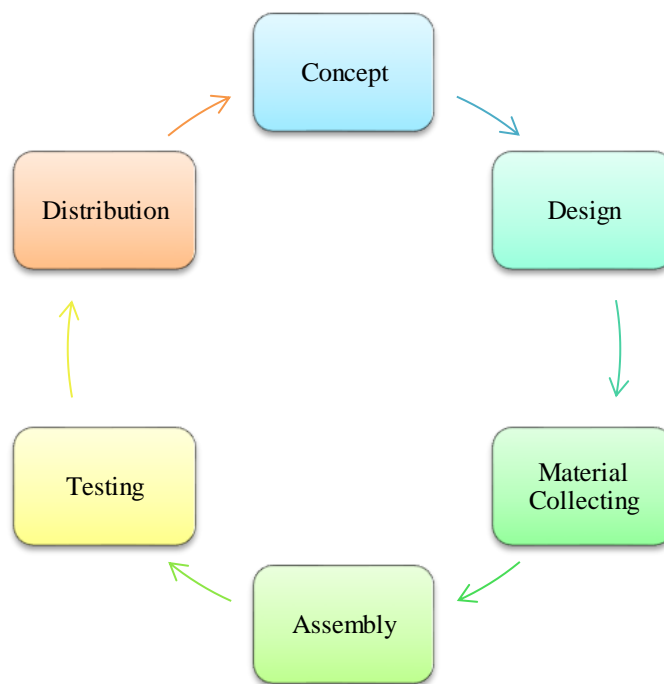


Fig 2. Multimedia Development Life Cycle (MDLC) Methods

Figure 2 above are the stages carried out by the author in making learning media based on 3D animation videos in the introduction of martial arts in the Persaudaraan Setia Hati Terate (PSHT). In the first stage, the author determines the purpose of making 3D animated video-based learning media and its main users. In the second stage the author designs the characters that will be used in 3D animated video-based learning media and determines the duration. In the third stage, the author collects materials that will be included in the 3D animated video-based learning media, namely text, 3D objects, and audio. Text materials and 3D objects are made directly by the author using CorelDRAW, while audio is collected from repositories on the internet. In the fourth stage, the author makes 3D animated video-based learning media by combining all text materials, 3D objects, and audio using Blender application. In the fifth stage, the author tests the 3D animated video-based learning media that has been produced.

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4. RESULT

The results of this research are in the form of 3D animated video-based learning media for the introduction of martial arts in the Brotherhood of Setia Hati Terate (PSHT) held at Saifullah An-Nahdliyah Islamic Boarding School. The 3D animated video-based learning media produced in this research is equipped with an explanation of silat martial arts movements using a combination of text, animation of silat martial arts movements, and music audio. The duration of the resulting 3D animation video is 49 seconds.

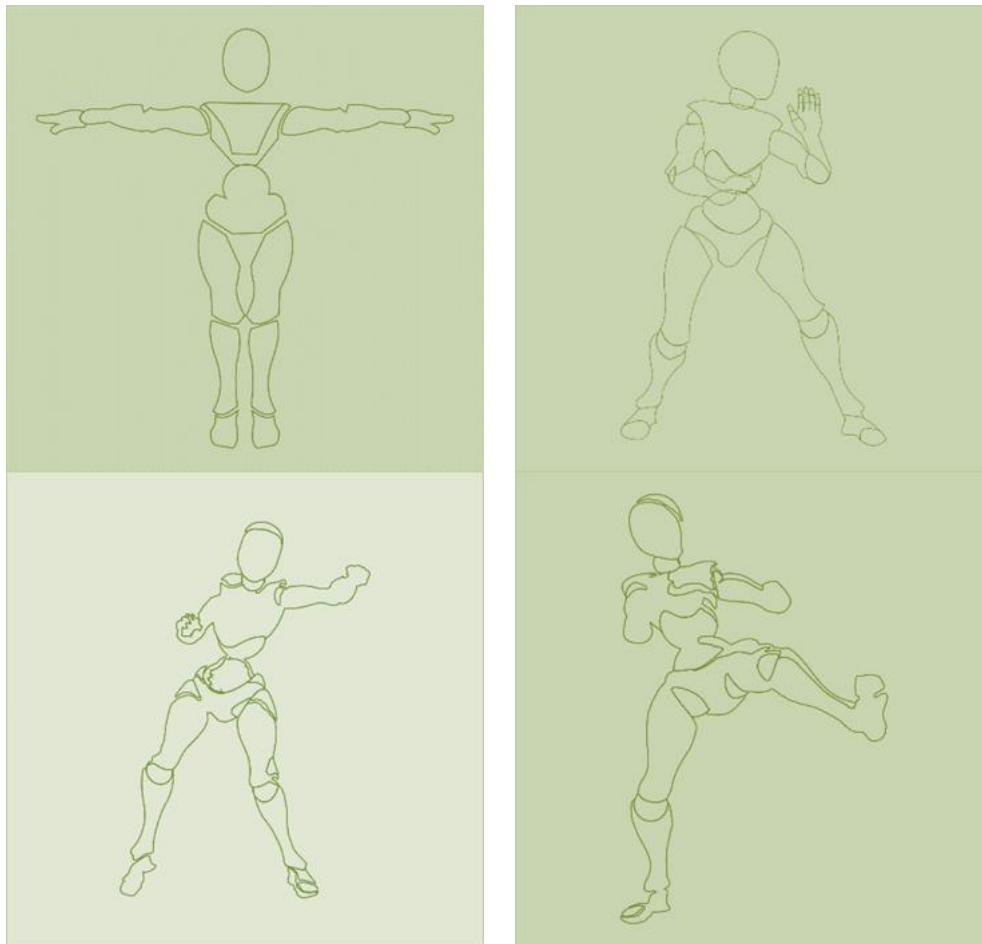


Fig 3. Rancangan Karakter Menggunakan Aplikasi CorelDRAW

Figure 3 above is the result of the character design made by the author using the CorelDRAW application. The character designs that have been made are then converted into 3D animation videos using the Blender application. So that the character design has interesting movements to practice some movements in martial arts in the Setia Hati Terate Brotherhood (PSHT).

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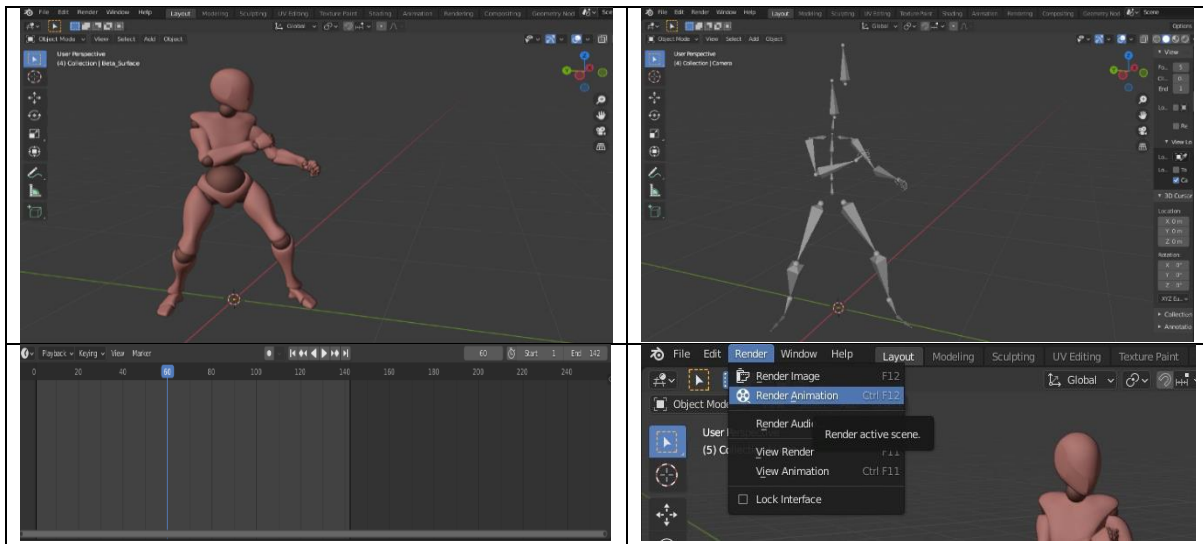


Fig 4. Rancangan Karakter

Figure 4 above is a view of the process of creating 3D characters, making bones on characters, setting keyframing, and rendering animation using the Blender application.



Fig 5. Gerakan Tangkisan Luar Dalam

Figure 5 above shows the inside-out movement of the Persaudaraan Setia Hati Terate (PSHT) which is practiced using 3D animation video-based learning media that has been created using the Blender application. The inside-out parry movement in the Persaudaraan Setia Hati Terate (PSHT) is an important part of training the ability to defend and protect oneself. If they learn and master the right outer parry techniques, a martial arts practitioner can deal with their opponent's attacks more effectively and increase their personal safety.

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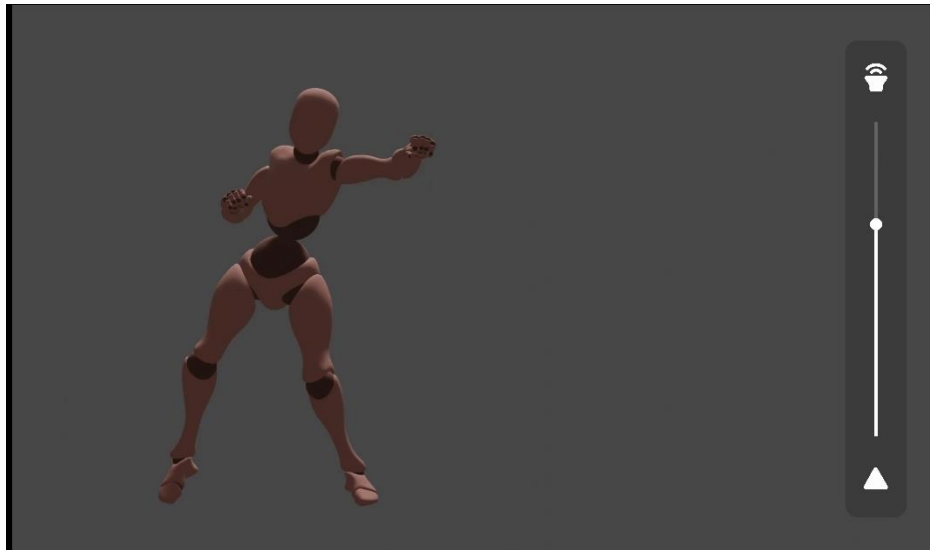
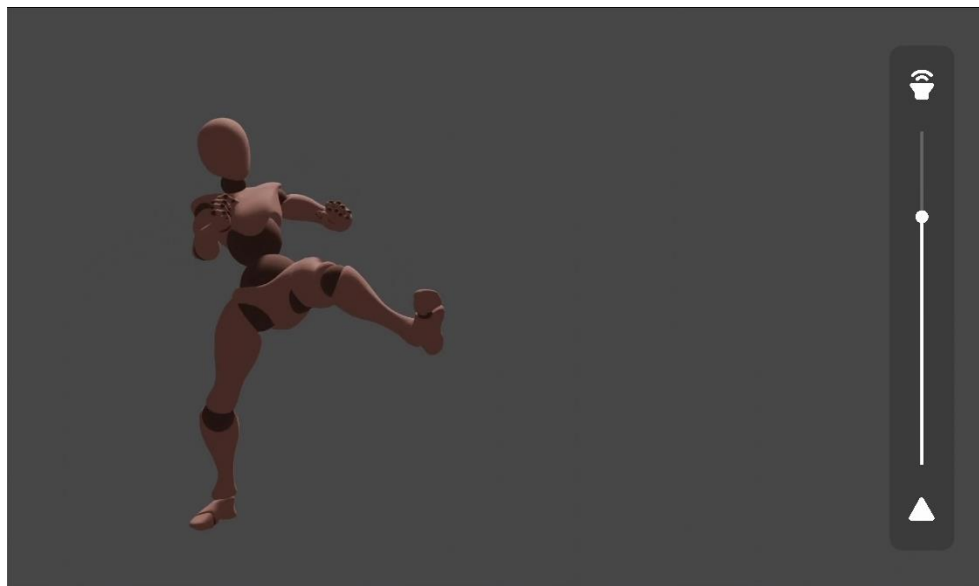


Fig 6. Gerakan Tangkis Pukul

Figure 6 above shows the tangkis pukul movement in the Persaudaraan Setia Hati Terate (PSHT) which is practiced using 3D animation video-based learning media that has been created using the Blender application. The tangkis pukul movement is a combined technique between the movement of the tangkis (blockade) and the punch in martial arts. In the context of martial arts such as Silat, the tangkis pukul movement is used as a response to an opponent's attack. This technique combines the ability to block or parry an opponent's attack with immediately following with a counterattack or punch.



Gambar 7. Gerakan Tendangan a

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Figure 7 above shows the kick a movement in the Brotherhood of Setia Hati Terate (PSHT) which is practiced using 3D animation video-based learning media that has been created using the Blender application. The a-kick is one of the kicking techniques commonly used in combat. This kick is usually done by lifting the leg with an upright posture, then the kick is launched using certain parts of the foot according to the techniques taught in Silat, Kick A in Silat has strong and fast characteristics, and can be used to attack opponents effectively.

5. DISCUSSIONS

This research produces a 3D animation video-based learning media for the introduction of martial arts of Persaudaraan Setia Hati Terate (PSHT) organized at Saifullah An-Nahdliyah Islamic Boarding School. The 3D animation video-based learning media produced in this study is equipped with an explanation of martial arts movements using a combination of text, animation of martial arts movements, and musical audio. The duration of the 3D animation video produced is 49 seconds. The silat martial arts movements contained in the 3D animated video-based learning media produced in this study are the inside-out parry movement, the hitting parry movement, and the tandangan a movement. The 3D animated video-based learning media produced in this study can be downloaded and watched through the following link:

(<https://drive.google.com/file/d/1MsAT6khcM0a6ENhMYpqylyNBHmReLukO/view>)

6. CONCLUSION

This research presents a comprehensive analysis of the implementation of 3D animation video-based learning media in the introduction of the martial art of Silat Persaudaraan Setia Hati Terate at Saifullah An-Nahdliyah Islamic Boarding School. By using 3D animation technology, the learning successfully increases efficiency, effectiveness, and student engagement in learning Silat martial arts. This study provides an in-depth understanding of the benefits and potential of applying 3D animated videos in the context of teaching Silat martial arts, creating a learning environment that is more engaging, effective, and contributes positively to students' skill development as well as supporting the Brotherhood of Setia Hati Terate and educational institutions in improving learning.

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