Development of Blender-Based Animation Video Tutorial Learning Media on Body SPA Material

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ABSTRACT

The low interest in learning and understanding of students in studying Body Spa material is caused by the limitations of the learning media used by teachers, as well as the lack of interesting and interactive media. The purpose of this study is to develop learning media in the form of animated video tutorials based on Blender on Body SPA material for class XI students of SMK Swasta Imelda. This study is an R&D study with the ADDIE model, which includes five stages, namely: (1) Analysis; (2) Design; (3) Development; (4) Implementation; (5) Evaluation. The research instrument used was a questionnaire with a data analysis technique, namely descriptive statistics. The validation results from media experts and material experts showed that the learning media developed was very feasible to use, with an assessment of material experts with an average feasibility of 89% and media experts with an average of 88% with a very feasible category. The results of the small group trial were 87%, the medium group trial was 88.33% and the large group trial was 90% with the category Very Feasible. These results indicate that students gave a positive response to this animated video. This media is considered interesting, easy to understand, and able to increase students' motivation and understanding of Body Spa material. The use of animated video tutorial learning media based on Blender can increase students' learning motivation, especially in beauty expertise competencies.

Keywords: *animation; body spa, blender, media, video tutorial*

INTRODUCTION

The development of science and technology has brought changes in human life where various problems can only be solved by efforts to master and improve science and technology. These changes have also brought humans into increasingly tight global competition. In order to be able to participate in global competition, a nation needs to continue to develop and improve the quality of its Human Resources. Therefore, improving the quality of Human Resources is a reality that must be carried out in a planned, directed, intensive, effective and efficient manner in the development process so that this nation is not less competitive in the era of globalization. One step to improve the quality of Human Resources that has competitiveness is to maximize graduates from Vocational High Schools.

Vocational High Schools are prepared to produce skilled, professional graduates, ready to enter the workforce and able to keep up with the development of science and technology. Imelda Medan Private Tourism Vocational School is one of the vocational schools that offers several expertise programs, one of which is the Beauty Care expertise program. One of the expertise programs that plays an important role in the world of the beauty service industry is the expertise competency of Skin Beauty Care, especially Body Spa. SPA is a healing condition from illness to wellness through a treatment or therapy on the five senses using water media and traditional or modern herbs so that it can achieve balance of body, mind and soul (Benge, 2020). In addition, SPA can also maintain individual health (Sari, 2022). Therefore, Body SPA material requires students not only to understand the theory, but also to master practical skills as a whole, starting from massage techniques, use of spa materials, to customer service ethics. However, in the Body SPA material there is a theory that is the most difficult to understand, namely the massage movement procedure and the rhythm of the massage movement.

Based on the results of observations and interviews conducted with teachers and students in class XI of skin and hair beauty at SMK Swasta Imelda Medan on October 2, 2023, it was found that in the learning process, teachers had actually used learning media such as powerpoint and textbooks from the school, but these media have not been able to fulfill the needs of learning media in learning, this is because Body SPA learning must be delivered coherently and clearly, because the movements must be sequential and complementary. While the learning media in schools is still in the form of printed media in learning so that learning is not optimal. In addition, there are still students who have not optimally understood the concept of Body SPA massage and the rhythm of Body SPA massage movements properly, some students have not mastered the Body SPA massage movement techniques, especially in certain areas of the body. This is also supported by the students' daily test scores on the Body SPA material for the even semester of the 2022/2023 academic year before being given remedial, namely that there were several students who had not reached the Minimum Completion Criteria (KKM) of 80 in accordance with the provisions of the education unit, and there were still 35 students out of 42 students or 83.33% whose scores were below the KKM. Based on the problems above, it is necessary to use blender-based animated video tutorials as complementary teaching media in the Body SPA massage subject matter, to provide information assistance and as a guide for students to learn independently.

Animated learning videos are one form of media that can be used to support the success of the learning process. Video media is one of the media that can be developed by combining sound and moving images that can be seen and heard so that it can attract the attention of students (Setiyawati, 2021; Yuanta, 2020). Animated videos are a visual technology that combines sound and images, then displayed as a series of moving images that are adjusted to each character (Hariati et al., 2020; Suryani & Seto, 2020). Animated videos combine images and colors that are arranged in an attractive way so that they can increase students' interest and attention (Alifia & Hendriana, 2021; Hardiyanti et al., 2020).

Based on previous findings, it shows that the use of video media can create a more enjoyable learning experience for students (Susilawati & Satriawan, 2018; Sayekti, 2019; Panjaitan et al., 2020). Video media in learning has been proven to be able to significantly increase students' learning motivation (Sukarini et al., 2021; Z Pasaribu & Nainggolan, 2022). This is because video media is able to combine visuals with audio which can be packaged in various forms (Pamungkas, 2019). Video media can be packaged in the form of animations and video tutorials. Mandalika & Syahril (2020) mention the advantages of video tutorials, namely: the appearance is attractive, can obtain information from experts, can focus students' attention on the presentation of the video, time efficiency and recordings that have been made can be replayed. Video tutorials will attract more students' attention if they have interesting animations so that students can be motivated to learn. Learning using video tutorial media can increase student focus so that it has an impact on the learning outcomes obtained (Natal & Ragang, 2021; Suparman et al., 2022). Animated videos can be made with the support of Blender software. Blender 3D can be an alternative in three-dimensional animation learning media. Blender provides all the features needed to create super-realistic 3D models for animation, films and games. As an open source software, Blender can of course be used, distributed or developed independently according to the needs of its users (Rochman, 2012). Blender features include 3D modeling, UV unwrapping, texturing, rigging and skinning, fluid and smoke simulation, particle simulation, animating, match moving, camera tracking, rendering, video editing and compositing (Syafrizal, Toyib & Saputra, 2019). The features are complete, lightweight, fast updates, and have an open community that will help users exchange ideas. Blender can also be used in various multimedia activities such as video editing, making games, animation, composting, and others related to 3D animation. Therefore, the development of animation video tutorial media based on blender can be packaged well so that this media can help students in learning Body SPA.

Blender-Based Animation Tutorial Video on Body SPA Material as an interactive learning media is also known as interactive multimedia because it is a combination of text, images, moving animation videos, and audio. Blender-Based Animation Tutorial Video is expected to be a learning media that can attract students to be more motivated in learning because it contains a more attractive display. Blender-based animation tutorial videos can be used by teachers to develop new learning media so that learning objectives can be achieved. The

purpose of this study is to develop learning media in the form of Blender-based animation tutorial videos and to determine the feasibility of learning media on Body SPA material for class XI students of SMK Swasta Imelda.

METHOD

This research is a research and development (R&D). The development model used is the ADDIE model. The ADDIE model is a systematic approach used in the development of learning systems (Yuniastuti et al., 2021), with structured and clear stages in the process of developing learning media. These stages include Analysis (needs analysis), Design (design), Development (product development), Implementation (application in the field), and Evaluation (result evaluation) (Cahyadi, 2019). The purpose of choosing the ADDIE model as a media development model is to produce products and procedures that are systematically tested in the field, evaluated and improved so that they meet the expected categories related to effectiveness, quality, and standards applied (Suryani, 2018).

The product development made in this study is the development of a Blender-Based Animation Video Tutorial learning media on Body SPA Material for Class XI Students of SMK Swasta Imelda Medan. The location of the research was carried out at SMK Swasta Parawisata Imelda Medan, this school is located at Jalan Bilal No.24 P. Brayan Darat I, Medan which was carried out in the even semester of the 2023/2024 Academic Year. The resulting product is a learning media for the development of a Blender-Based Animation Video Tutorial on Body SPA Material with the target product that will use the learning media being all class IX Beauty students at SMK Swasta Parawisata Imelda Medan totaling 42 people.

The development of the Blender-Based Animation Video Tutorial media product on Body SPA Material is carried out in stages: (1) Analysis; at this stage, an analysis of the needs of teachers and students is carried out. Through the problem analysis stage in the field, this will be used as a reference in developing a product. To obtain data, the researcher conducted observations at SMK Swasta Imelda Medan and provided a questionnaire for analyzing the needs of students and teachers; (2) Design stage, namely determining the material made referring to learning achievements. In addition, this stage also involves compiling a Storyboard which is a description of the overall learning media that will be included in the application. At this stage, the researcher created a design for a Blender-based animation video tutorial learning media; (3) Development stage, namely developing and producing a Blender-based animation video tutorial learning media product. After the media has been developed, validation is carried out with material experts and media experts. Based on the results and suggestions of material and media experts, a revision of the learning media is carried out; (4) Implementation stage, namely a trial of the Blender-Based Animation Video Tutorial product on Body SPA Material which was carried out on students at SMK Pariwisata Imelda Medan. The trial was carried out on three groups, namely small, medium and large group tests; (5) The evaluation stage is the final stage, namely evaluating the product and product feasibility for better product improvements.

Data collection techniques were carried out through questionnaire sheets containing instruments. The questionnaires used were needs questionnaires, material and media validation questionnaires, and group trial questionnaires. The data was obtained in the form of a questionnaire summarized in the form of a measurement scale in this study referring to the Likert scale, where each was made using a scale of 1-5 answer categories, each answer was given a score or weight, namely the number of scores between 1 and 5 (Sugiyono, 2020). Analysis of student responses was carried out using percentages. The percentage is calculated using the formula:

$$Persentase\ (\%) = \frac{\text{Total scores obtained}}{\text{The ideal score sum of the entire system}} \times 100\%$$

Table 1. Eligibility Level Categories

Percentage	Category
81% - 100%	Very Worth It
61% - 80%	Worthy
41% - 60%	Quite Decent
21% - 40%	Not feasible
<21%	Totally Unworthy

RESULTS AND DISCUSSION

This study is based on the lack of relevant media that can be used in Body SPA learning. The available media tend to be conventional, such as printed modules and static images. This makes it difficult for students to imagine Body Spa movements or procedures in real terms, especially for students with a visual learning style. In addition, limited time for laboratory practice and the lack of spa facilities limit students' opportunities to practice directly.

This problem has an impact on students' low understanding of Body Spa procedures and their lack of confidence in practice. This study was conducted on grade XI students of Beauty School of SMK Swasta Pariwisata Imelda T.A on Body SPA material which was implemented from January 24 - January 31, 2024. This study was conducted with the aim of testing the feasibility of learning media. The development model in this study, namely the ADDIE Model, consists of 5 stages, namely; analysis, design, development, implementation and evaluation stage.

The analysis stage is carried out to explore problems that arise during the learning process, so that solutions can be designed that can make the learning process more effective and interesting. The problems encountered from the results of observations conducted at SMK Pariwisata Imelda Medan are the use of learning media that are still conventional and less interesting and there are still many students who do not understand the learning material. At this stage, an analysis of the needs of teachers and students for learning media was carried out which showed that the development of animated video tutorial media based on Blender in Body SPA learning is very necessary.

The second stage is the design stage. In this design stage, there are 3 stages, namely: 1) software determination stage, 2) storyboard stage, and 3) design stage. The software used to create animated video tutorial-based learning media is Blender. In the storyboard stage, the development of a learning video script is carried out to determine the flow of the learning video. In the design stage, the video flow is discussed, the contents of the video tutorial are designed, the front, back, and background views are designed, and the initial product format is created using the selected software and materials that are in accordance with Body SPA learning.

The third stage is development. At this stage, the development of a Blender-based animated video tutorial product is carried out on Body SPA learning. Video media consists of several menu sections, namely the initial display, introductory display, material display and closing. The initial display aims to display the initial identity of the media such as the title, logo of the researcher's campus of origin, media logo, spa image, and researcher name. This introductory display consists of a video identity containing initial competencies and profiles.

Figure 1. Media Cover

Figure 2. Introduction View

In this material menu, various materials will be discussed, namely related to massage techniques. This material consists of the definition of massage techniques, tools, materials, cosmetics used, and procedures or work steps of massage techniques accompanied by massage technique videos.

Figure 3. Learning Materials

At the development stage, media feasibility validation is also carried out. Media validation consists of a feasibility test by material and media experts. This is done to determine whether the product that has been developed is suitable for use in Body SPA learning and is in accordance with learning objectives. In this study, validation will be carried out by 3 material experts and 2 media experts who will then be tested by students. At this stage, criticism and suggestions from the validator will be used as a basis for revising the media.

The validation of the material was carried out by 3 material experts consisting of 1 lecturer of the Makeup Education study program and 2 Beauty teachers of Imelda Private Tourism Vocational School. The aspects assessed in the validation of the material experts were the aspects of content feasibility, presentation aspects, and linguistic aspects, providing conclusions on the feasibility of the material and suggestions for improving the material.

Table 2. Results of Validation of All Aspects by Material Experts

No	Aspect	%	Category
1	Content Eligibility	83%	Very Worth It
2	Presentation	96%	Very Worth It
3	Linguistics	87%	Very Worth It
	Average	88%	Very Worth It

Based on the table above, the overall validation results by material experts on the Body SPA material in

the blender-based animation video tutorial are obtained, namely in the aspect of content feasibility of 83% with the category "Very Eligible", the presentation aspect of 96% with the category "Very Eligible", and the linguistic aspect of 87% with the category "Very Eligible". Based on the calculation results, the average percentage of all aspects is 89% with the category "Very Eligible". These data indicate that the material in the Blender-based video tutorial media is feasible and can be used in Body SPA learning for beauty students.

After the validation of the material expert is complete, it is continued with the validation of the media expert. Media validation is carried out by 2 media experts who are experts in their fields, namely lecturers of the Makeup Education Study Program, State University of Medan. The validator provides an assessment in the form of a score on each aspect of the assessment, namely the presentation aspect and the programming aspect.

Table 3. Results of Validation of All Aspects by Media Experts

No	Aspect	%	Category
1	Presentation	88%	Very Worth It
2	Programming	88%	Very Worth It
	Average	88%	Very Worth It

Based on the table above, the overall validation results obtained by media experts on blender-based animation tutorial videos are in the presentation aspect of 88% with the category "Very Eligible" and the programming aspect of 88% with the category "Very Eligible". Based on the calculation results, the average percentage of all aspects is 88% with the category "Very Eligible". This proves that the Blender-based video tutorial media is feasible to be used in Body SPA learning for beauty students.

The fifth stage is the implementation stage. At this stage, the learning media that has been validated by material and media experts is given to students to be tested. The product was given to 42 students of class XI Beauty School of SMK Swasta Pariwisata Imelda. The trial was conducted using animated video tutorial media based on blender for students who were divided into 3 groups, namely small groups, medium groups, and large groups face to face. Students were very enthusiastic and interested in learning to use the animated video tutorial media based on blender that was developed, this was because the media had never been used before during the learning process. At the end of the learning, students were asked to fill out the trial questionnaire that had been given to provide a response to the media that was developed.

The small group trial was conducted by 5 students. The medium group trial was conducted by 10 students and the large group trial was conducted by 27 students. Students were selected randomly using a lottery technique. There were 12 indicators for the student trial assessment.

Table 4. Student Response Results

No	Group	%	Category
1	Small Group	87%	Very Worth It
2	Medium Group	88%	Very Worth It
3	Large Group	90%	Very Worth It
	Average	88%	Very Worth It

Based on the table above, the overall trial results by grade XI students of Beauty School of SMK Swasta Pariwisata Imelda on the blender-based animation tutorial video are obtained, namely in the small group trial of 87% with the category "Very Eligible", the medium group trial of 88% with the category "Very Eligible", and the large group trial of 90% with the category "Very Eligible". Based on the calculation results, the overall average percentage is 88% with the category "Very Eligible". Based on these data, it shows that Blender-based video tutorial media is very suitable for use in Body SPA learning, especially for Grade XI Beauty students at Imelda Private Vocational School.

The last stage is the evaluation stage. At this stage, the deficiencies that exist during the research are used

as a reference in improving learning media. This stage is carried out in every process of developing media products to find out whether the media developed is relatively suitable for use in learning activities.

Based on the analysis results, Blender-based animated video tutorial media is very suitable for use in Body SPA learning for beauty students. This assessment is based on the material in the video being easy for students to understand and can be followed by students at school or independently. Media that is presented in an interesting way can increase students' interest in learning (Krisna & Wibawa, 2021). The application of the right delivery strategy by integrating contextual elements in the material in video media has an impact on the presentation of more effective and structured material, making it easier for students to understand the lessons and increase their enthusiasm for learning (Tegeh et al., 2019). One of the advantages of the animated video developed is the presentation in the form of examples and illustrations that make it easier for students to understand the learning material.

Animated videos play a role in creating a supportive learning atmosphere and encouraging students to achieve optimal learning outcomes (Andriyani & Suniasih, 2021). As an effective media, animated videos can be utilized in the learning process to improve students' learning outcomes, while also being proven to be able to increase their motivation in participating in learning (Hapsari & Zulherman, 2021). In addition, the use of this media has also been shown to increase student enthusiasm because it presents an interesting and enjoyable learning experience (Ahmet et al., 2018; Mudasih & Subroto, 2019).

These results are supported by previous studies stating that video media can provide a fun learning experience for students (Panjaitan et al., 2020). In addition, learning with videos has also been proven to significantly increase students' learning motivation (Sukarini et al., 2021).

The implications of the research are that the use of Blender-based animated video tutorial learning media can be an effective solution in overcoming the limitations of practical media and increasing students' learning motivation as well as an effective tool to improve students' understanding and skills in Body Spa material.

CONCLUSIONS AND RECOMMENDATION

Learning media provides good benefits in the student learning process. Blender-based animated video tutorial media on Body SPA material was developed using the ADDIE model. The results of the assessment by material experts with an average percentage score of 89% with the category "very good", then the results of the assessment by media experts with an average percentage score of 88% with the category "very good". The results of the Blender-based animated video tutorial Learning Media Feasibility Test with an average percentage score from small group trials, medium group trials, and field trials of 88% with the category "very good". From these data, it can be concluded that the blender-based animated tutorial media on Body SPA material is very feasible to use in learning, especially for students of Grade XI Beauty at SMK Swasta Imelda. Video tutorial media can be used as an effective tool to improve students' understanding and skills in Body SPA material. The use of this media helps teachers deliver material more visually and interactively, so that the learning process becomes more interesting and easier for students to understand. It is recommended for further research to develop animated video tutorials with additional interactive features such as quizzes, simulations, or augmented reality so that the learning process is more interesting and stimulates active student involvement.

Credit authorship contribution statement

First Author: Methodology, Formal analysis, Data curation, Conceptualization. Second Authors: Resources, Project Administration, Methodology. Last Author: Funding acquisition, Formal analysis, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical Declaration

All participants provided informed consent prior to their involvement in the study. They were informed about the study's purpose, procedures, and their right to withdraw at any time without consequence.

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