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Development of 2D Animation Video Learning Media Mukashibanashi: Saru Kani Gassen at SMA Negeri 12 Bekasi

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ABSTRACT

According to a poll done in 2021 by The Japan Foundation, Indonesia has the second-highest population of Japanese language learners worldwide. Japanese is now available for study in schools as one of the specialized courses, according to the government. Using learning material is one way to try and maximize the learning process. Learning materials for Mukashibanashi material: Saru Kani Gassen at SMA Negeri 12 Bekasi City are still ineffective, according to the interview's findings. Based on this, Mukashibanashi: Saru Kani Gassen, a 2D animated film, was created as educational material to assist third-grade high school students at SMA Negeri 12 Bekasi City in their studying. The Multimedia Development Life Cycle (MDLC) approach is used in this learning media development to create a 2D animation video that lasts 6 minutes and 40 seconds in mp4 format. Two testing phases, known as alpha and beta testing, are used to conduct feasibility testing on 2D animation video learning media products. A percentage of 89% was obtained from the feasibility test results, placing the responders in the "Very Good" category. Therefore, the product of 2D animation can be declared feasible as learning media.

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1. INTRODUCTION

The results of a survey by The Japan Foundation in 2021 stated that Indonesia was ranked second in terms of Japanese language learners with a score of 18.8% of Japanese language learners total in the world. Meanwhile, in Southeast Asia, Indonesia is in first place for the most Japanese language learners with a Japanese language learners total is 711,732. Based on the results of a survey by The Japan Foundation, it can be seen that Indonesia has a high interest in learning Japanese. Apart from that, the government has also determined Japanese to be one of the specialization subjects can be studied at school. This is stated in Minister of Education and Culture Regulation No. 69 of 2013 concerning the Basic Framework and Structure of the High School/Madrasah Aliyah Curriculum. In the scope of education, one effort to optimize the quality of student learning is by utilizing learning media (Kandia *et al.*, 2023). Accuracy in selecting and using learning media can influence the quality of student learning outcomes and the process learning (Purwanto *et al.,* 2022). Apart from that, implementing appropriate learning media means of increasing motivation, attracting students' attention and making learning activities more interesting and effective (Puspitarini & Hanif, 2019; Islami, 2022; Sutarto & Fathurrochman, 2020).

Based on the results of interviews with educators and students in Japanese language subjects at SMA Negeri 12 Bekasi, it is known that educators in Japanese language subjects teach by applying various forms of learning media such as books, PowerPoint, audio recordings, animated videos, podcasts, Canva, and teaching video recordings on YouTube. Educators realize that the use of learning media has a big impact on students' learning process, especially language learning. He stated that language learning has four aspects that need to be studied, namely writing, reading, listening and listening. Apart from that, every child has a different learning style. By implementing appropriate learning media, every child with a different learning style can be met and facilitated. He tried his best to apply the right learning media for learning Japanese. However, not all learning media can be obtained easily, let alone made. One of the obstacles he experienced was in one of the materials in the Japanese language subject studied in class XII, namely Mukashibanashi: Saru Kani Gassen.

Based on the results of interviews with students, the learning media currently used for Mukashibanashi: Saru Kani Gassen material is reading books and listening to audio conversations from the teacher's laptop. Students have difficulty understanding the content of the story due to limited visualization of existing media, limited ability to read Hiragana Katakana writing, difficulty interpreting the content of the story in Japanese, and students are still unfamiliar with the Japanese fairy tale, Saru Kani Gassen.

Responding to this problem, a solution is needed to help educators and students learn the fairy tale material of Saru Kani Gassen so that the learning process can be maximized. The solution obtained is to develop learning media in the form of 2D animated videos. According to Risyani *et al*. (2021) in their research, conveying information through animation media is very effective because of the entertainment elements contained in animation. According to Wahyuni *et al.* (2021) in their research, 2D animated learning media can make it easier for educators to carry out the learning process and can attract students' attention in the learning process. And according to Setiawan and Permana (2021) in their research, the use of 2D animated video learning media has an influence on learning outcomes. Data was obtained that learning outcomes with the help of 2D animated videos were on average higher than learning outcomes without the help of 2D animated videos.

Based on the various things that have been described, development research was carried out with the title "Development of 2D Animation Video Learning Media Mukashibanashi: Saru

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Kani Gassen at SMA Negeri 12 Bekasi City". This research aims to develop a learning media in the form of 2D animated videos as a means of supporting Japanese language learning at SMA Negeri 12 Bekasi City. The material developed in this 2D animation video is a visualization of Mukashibanashi or a Japanese fairy tale entitled Saru Kani Gassen. It is hoped that learning media in the form of 2D animated videos can help educators to make the learning process more optimal and provide additional learning media facilities that can be applied to the learning process. Apart from that, it is hoped that this learning media can also help students to make it easier to understand the material and make learning more enjoyable.

2. STUDY LITERATURE

2.1. 2D animated video learning media

Learning media is media that educators use for stimulate students' thoughts, channel messages, feelings, attention and encourage students' process of learning (Widodo, 2018). According to Apriansyah (2020) defines video as a digital media shows the arrangement of images by providing images, illussions and fantasies in moving images. The word "animation" comes from the word "animate", which means to animate, namely to make inanimate objects look like they are alive, by moving still images into motion so that they appear to be alive. 2D animation is the process of creating animation using two-dimensional objects (Kahraman, 2015). That is, objects that only have two long dimensions (X-axis) and (Y-axis).

2.2. Animation technique

Afridzal (2018), there are three types of animation making techniques, namely (1) Stop Motion Animation, an animation making technique which is done by taking pictures in the form of objects that are moved step by step until they form a scene. (2) Traditional Animation, an animation creation technique that is done by drawing or moving images one by one on celluloid paper. (3) Computer Animation, an animation creation technique carried out using a computer. All activities carried out in creating animations use computer assistance.

According to Nadya and Sari (2020), in movement, there are two animation techniques. (1) Frame by frame animation technique, animation movement technique by drawing each different shape or each change in shape in each animation frame. (2) Tweened animation technique, an animation movement technique by determining the position of the initial frame and final frame, then continuing with the animation of the remaining frames which are between the initial and final positions of the previously created frame.

In developing this 2D animated video learning media, six basic principles of animation were applied, namely (1) The principle of anticipation states that every moving object will begin with a preparatory or preliminary movement. (2) The follow through principle states that if an object is moving and then suddenly stops, the object will continue its previous movement in the same direction. (3) The principle of secondary action is an additional movement that aims to support or complement the main movement. (4) The timing principle is determining the time when an object or character will be moved. (5) The principle of exaggeration is a technique of exaggerating the visual appearance or movement in an animation. Usually, this principle is used as comedy material. (6) The principle of appeal relates to certain characteristics of the overall visual style in animation.

2.3 Mukashibanashi Japanese Subject: Saru Kani Gassen

Japanese language subjects are subjects that study Japanese language and culture Gunawan. Based on government policy, Japanese language subjects are designated as one of the specialization sciences regulated in Minister of Education and Culture Regulation No. 69

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of 2013 concerning the Basic Framework and Structure of the High School or Madrasah Aliyah Curriculum. Mukashibanashi (むかしばなし) is a fairy tale term in Japanese. According to Santoso and Soelistyowati (2020), a fairy tale is a short narrative originating from an unknown author and disseminated orally. Saru Kani Gassen is one of The Mukashibanashi or fairy tales originating from Japan. Saru Kani Gassen means monkey and crab fight. This fairy tale is referred to from the learning resource book for SMA Negeri 12 Bekasi City students, namely the book Nihongo Kirakira class XII in chapter 32. According to Kori et al. (2019) the language used in this story is quite simple, so the vocabulary and sentence patterns are easy to understand for beginner Japanese language learners.

2.4. Testing

Alpha testing is the first testing stage carried out by developers after the application has been successfully created. This testing stage is carried out by the developer and the developer environment (Akhsani, 2020). Alpha testing is carried out by recording errors or problems that may exist in the application being developed (Solichin, 2021). Beta testing is testing carried out by customers or end users of the software (Pratiwi et al., 2021). Beta testing is the direct implementation of software/applications in an environment that cannot be controlled by the developer. Because unlike alpha testing, developers do not participate in this testing stage (Pratiwi et al., 2021). Beta testing was carried out to obtain information related to the feasibility of the Solichin application (Solichin, 2021).

2.5. Multimedia Development Life Cycle (MDLC)

Figure 1 shows the steps of the MDLC method. The MDLC method is a product development method owned by Luther-Sutopo. This multimedia development through six stages: concept, design, material collecting, assembly, testing, and distribution. These six stages do not have to be carried out sequentially, these stages can exchange positions, however, the concept stage is still the first thing that must be carried out.

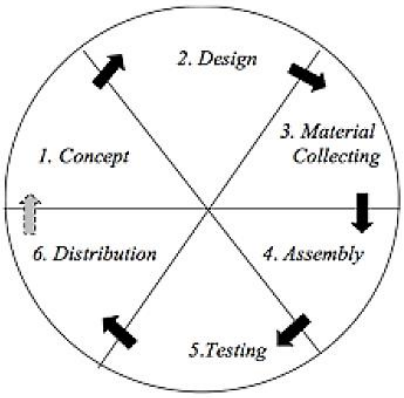

Figure 1. Luther-Sutopo MDLC method

3. METHOD

3.1. Place and Time

The research was conducted at SMA Negeri 12 Bekasi City. The research was carried out from February 2022 to July 2023.

3.2. Animation technique

To produce the 2D animated video learning media product Mukashibanashi: Saru Kani Gassen, several software was used in the process that shown in **Table 1**.

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Table 1. List of Software Used for Develop the Product.

Software Name	Description
Adobe Illustrator 2023	Illustration Editing
Adobe Audition 2023	Audio Editing
Adobe After Effects 2023	Animation Editing
Adobe Premiere Pro 2023	Video Editing

3.2.1. Concept Stage

The concept of this development is a 2D animated video use to be a learning medium for class XII Japanese language subjects at SMA Negeri 12 Bekasi City. This stage begins with collecting information and data regarding Japanese language learning media at SMA Negeri 12 Bekasi City.

3.2.2. Design Stage

This stage is carried out by designing the appearance of the video which will be made in the form of a storyline and storyboard. The storyline used for a reference the material content. The storyboard used for the form of video display and asset arrangement.

3.2.3. Material collecting Stage

Design assets are collected and created which will later be used in the next stage, namely, the assembly stage. The material collection stage is carried out by collecting materials from the researcher's own work or taking free use no copyright materials. Free use materials in the form of illustrations can be downloaded from freepik.com, audio from pixabay.com and letters from fontspace.com.

3.2.4. Assembly Stage

This stage is the core stage in making 2D animated videos. All assets created and collected at the material collecting stage will be processed into a 2D animated video.

3.2.5. Testing Stage

The testing stage goes through two stages, namely alpha and beta testing. Alpha testing with material experts and media experts. Beta testing, with research respondents namely class XII students studying Japanese language subjects at SMA Negeri 12 Bekasi City. After obtaining the test results data, the data will then be analyzed to determine the percentage of media suitability using Equation (1).

$$\mathrm{P} = \frac{S}{N} \times 100\% \quad (1)$$

with P is the eligibility percentage, S is the number of scores obtained, and N is the maximum number of scores.

The results of calculating the questionnaire data using this formula will then be used to provide answers to the suitability of the media. Determination of eligibility is based on the eligibility category according to Arikunto. There are five categories of eligibility according to Yosinta and Amrulloh (2023) as shown in **Table 2**.

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Table 2. Eligibility Categories According to Arikunto.

No.	Persentase (%)	Kategori Kelayakan
1	< 20%	Very Poor
2	21% - 40%	Poor
3	41% - 60%	Average
4	61% - 80%	Good
5	81% - 100%	Very Good

3.2.6. Concept Stage

The distribution was carried out by providing media to Japanese language subject educators at SMA Negeri 12 Bekasi City to use in the process of learning. Besides that, the media will also be published on the YouTube channel so you can access the videos online when the learning process in class has been completed.

4. RESULTS AND DISCUSSION

4.1. Video Results

The results obtained from this research are a learning media in the form of a 2D animated video containing the story Mukashibanashi: Saru Kani Gassen in MP4 video format with a duration of 6 minutes 40 seconds which is ready to be used in the learning process. This 2D animated video learning media consists of two parts, the first contains the story Mukashibanashi: Saru Kani Gassen, then the second contains vocabulary learning which contains a list of Japanese vocabulary that can be learned from the story. This media was developed using Luther-Sutopo's MDLC method which consists of six stages.

4.2. Testing Results

From data from alpha testing results by material and media experts, and based on the division of feasibility categories according to Arikunto (see **Figure 2**). The media suitability percentage results were obtained at 100% for material experts who were tested by a Japanese language subject educator at SMA Negeri 12 Bekasi City, and 94% for media experts who were tested by an Information Systems and Technology lecturer at Jakarta State University. If these two results are categorized according to the Arikunto eligibility category, they get the "Very Good" category. Meanwhile, data from beta testing results by respondents, namely 34 class.

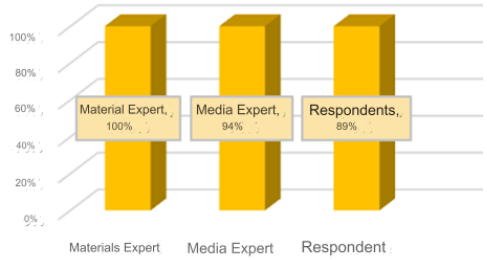

Figure 2. Media testing results

This media development process uses Luther-Sutopo's MDLC method. This 2D animated video was developed using animation creation techniques in the form of computer animation techniques. For animation movement techniques, use the tweened animation technique. In this 2D animation video, six basic animation principles are also applied to create better, more

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interesting animations and the movements seem more natural. The principles applied are the anticipation principle, follow through principle, secondary action principle, timing principle, exaggeration principle and appeal principle. After the product has been developed, the testing stage is then carried out. The results of alpha testing by material experts obtained a score of 100% with the feasibility category "Very Good". Then, the results of alpha testing by media experts obtained a score of 94% with the feasibility category "Very Good". The results of beta testing by respondents obtained a score of 89% with the feasibility category "Very Good". Apart from that, based on the respondent's questionnaire, results it is known that class reading stories from books or just listening to audio, makes it easier for students to read Hiragana Katakana letters, helps in imitating the pronunciation of Japanese vocabulary, helps in learning Japanese vocabulary and onomatopoeia. This 2D animated video is also known to make learning Japanese more fun.

5. CONCLUSION

The 2D animated video learning media Mukashibanashi: Saru Kani Gassen in the Japanese language subject at SMA Negeri 12 Bekasi City was successfully developed using Luther-Sutopo's development method, namely MDLC. The results of this media testing show that the 2D animated video Mukashibanashi: Saru Kani Gassen can be declared suitable as a learning medium. Apart from that, it is also known that class or just listen to the audio, makes it easier for students to read Hiragana Katakana letters, helps students imitate the pronunciation of Japanese vocabulary, and helps students learn Japanese vocabulary and onomatopoeia. 2D animated videos are also known to make learning Japanese more fun.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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