# Development of 2D Animation Videos as English Learning Media

**Khusnatul Amaliah[1]**, **Hastuti Retno Kuspiyah[2]**, **and Somia Ela Safrika[3]**
[1] Politeknik Negeri Lampung
[2,3]Faculty of Education, Nurul Huda University
Email: khusnatul@polinela.ac.id

**Abstract**

The purpose of this study is to produce 2-dimensional animated videos in English on the subject of narrative text for ninth grade student. This study is research and development (RnD) by using a mix method that combines qualitative and quantitative approaches by including the data in the study. Furthermore, for research using development model which is a process for developing and validating products from syllabus, subject matter, text materials, and so on carried out in a series of research and development cycles. Meanwhile, according to the results of the development, it can be seen that 2D animation videos as English learning media on the subject matter of narrative text for ninth grade student are declared effective and suitable for student character building by moral values in the legend title of The Legend of Kemaro Island.

*Keywords*: Development, 2D Animation Videos, English Learning Media

## INTRODUCTION

The Industrial Revolution 4.0 is a phase of increasing the role of digitalization in all fields. The incorporation of technology allows the exchange of data and information to occur faster and more precisely and unlimitedly. The shift in habits in this century presents a major challenge in the world of Education. The era of digitalization makes educators have to be more creative to produce students who are able to understand learning by utilizing technology in the learning process. Learning development is one of the higher order thinking skills or Higher Order Thingking Skill (HOTS) as a reinforcement of character education and learning in facing the industrial revolution era 4.0. Educators must prepare their students to be able to face the era of disruption by strengthening new literacy skills, namely data, technology and humanism.

On the other hand, educators do not see their students from their physical or psychological advantages and disadvantages, where education is everyone's right. Awareness of the condition of students needs to be considered and addressed properly in the learning process. There are students who have physical abnormalities such as eyes that are less functional for seeing, reading, and writing. Ears that lack hearing so that they require sign language and other physical disabilities. In addition, there are also those who experience low mentality, unstable emotions, do not want to socialize, and can also be very low or high intellectual disorders. These things affect the process of achieving the learning process.

Multimedia-based learning media is one solution in dealing with these problems because multimedia can touch all five senses: smell, taste, hearing, vision and touch. Multimedia presents information that can be seen, heard and performed. Multimedia is becoming a complete tool that is effective in today's teaching and learning process. In the learning process, in addition to teachers and students, two very important elements are learning methods and learning media (Istiqlal: 2011).

One of the learning media that attracts attention for students in this information technology era is multimedia-based. This multimedia-based learning media presents a multidimensional display that allows students to do, hear and see at the same time so that the learning process is more interactive (Rahmawati &; Goddess: 2019). Furthermore, 2D animation or bi-matra animation is also known as flat animation. 2D animation is also commonly called cartoon film. Cartoon itself comes from the word Cartoon, which means a funny picture. Those cartoons are mostly funny movies. For example, Tom and Jerry, Scooby Doo, Doraemon (Munir: 2012).

Therefore, this research focuses on the development of multimedia-based learning media, namely 2-dimensional animated videos in English on the subject of narrative text for junior high school grade IX.  2-dimensional animation is a type of animation that has a visually flat nature (Indonesian, M. P. D. K. R. : 2013).  Animation has 2 main components, namely audio and visual. Interesting video and audio elements in an animation can be used to convey messages more effectively to learners (Kuspiyah, et all: 2021). An attractive animated display will make students more focused and curious about the teaching material that will be delivered by educators. Furthermore, the subject of English is because it is one of the important components in facing the world of trade AEC (ASEAN Economic Community) which is required to have communication skills using English by mastering four basic skills. The four basic skills are listening, speaking, reading, and writing. Based on the English syllabus of Junior High School Class IX on basic competence (KD) states that "Understanding the social function, text structure, and linguistic elements of narrative texts in the form of folklore, in accordance with the context of their use" there is a narrative text subject that is an interesting development material to be developed in the era of the industrial revolution 4.0 and refers to the achievement of humanism literacy. It is intended that character building by moral values contained in narrative texts is the right medium to be conveyed well. As the results of research conducted by Putri A.W.S concluded based on the results of research that learning uses 2D animated videos as a learning medium that can arouse interest and stimulation in learning activities by bringing psychological influence to students (Putri, 2016).

## METHODOLOGY

This type of research is research development, which is research to develop products so that the product becomes better. The product as a result of the final research is a 2D animation video as a medium for learning English narrative text material for junior high school grade IX. A mixed method is used as an approach that combines qualitative and quantitative approaches by including quantitative data and qualitative data in one study. And the research model uses model development which is a process for developing and validating products from syllabi, subject matter, text materials, and so on carried out in a series of research and development cycles.

The objectives of this study are 1) knowing the needs of 2D animation videos as English learning media for narrative text subjects, 2) knowing the needs of the 2D animation video learning process as an English learning medium for narrative text subjects, 3) knowing 2D animation videos as English learning media narrative text subjects used today in the learning process,   4) knowing the perceptions of teachers and students about 2D animated videos as a medium for learning English the subject of narrative text, 5) knowing the effectiveness of 2D animation videos as a medium for learning English the subject of narrative text, and 6) producing 2D animated videos as a medium for learning English the subject of narrative text. Based on the objectives of the study, it is expected that the English learning media subject of narrative text will be more varied. So as to be able to improve the active atmosphere of the English learning process for junior high school grade IX.

The stages of research used to adapt the theory of Borg and Gall consist of 10 stages. Then the researcher summarizes it into three main stages. The three stages are: (1) preliminary study stage, (2) development study stage, (3) validation & evaluation stage, and (4) implementation stage.

Data collection in research and development is carried out with the following techniques: observation, interviews, questionnaires and tests.

Data analysis techniques in this development research use qualitative and quantitative data analysis. Qualitative data analysis techniques are carried out by reading and writing, describing and classifying the data. While quantitative data is analyzed using t-test. And product development data analysis techniques are 1) expert validation, namely to analyze the feasibility and assessment of 2D animation videos as English learning media, the subject of narrative text for junior high school grade IX by processing measurement results from interview data and questionnaires with respondents, teachers, media experts, and material experts. 2) Student analysis, which comes from the results of responses to 2D animated videos as English learning media the subject of narrative text. In the process, students

were shown 2D animation videos as learning media and given questionnaires which finally obtained data to be described in the form of the final results of the development of 2D animated videos as English learning media, the subject of narrative text.

## RESULT AND DISCUSSION

a.  Results of Needs and Situation Analysis

Researchers conducted a preliminary study before developing a 2-dimensional animated video as an English learning medium for the subject of class IX narrative text. This stage is a research process that must be carried out in order to know more clearly the research problem by adjusting the needs and situations. As in this study, a preliminary study aims to identify the problems and needs of an appropriate English learning media, the subject of class IX narrative text. Needs analysis data collection through observation process.

Research on the development of this 2-dimensional animated video, researchers used a type of participant observation in which behavior recording was carried out through an instrument sheet consisting of four aspects. These aspects are; use of media, learning methods, student attitudes and others (competence, interest, and creativity). Furthermore, technically, researchers directly see the ongoing learning process and atmosphere in English subjects, the subject of narrative text class IX SMP Muhammadiyah 1 Rawabening, OKU Timur. In addition to collecting these data, researchers conducted a literature study related to English learning media on the subject of narrative text.

From the results of needs analysis through observation, researchers obtained data, namely:

a)  Aspects of media use obtained information that the use of media during the learning process has not used varied technology-based media. The presentation of material still tends to use media in the form of whiteboards, books and pictures.

b)  The aspect of using learning methods obtained data that the methods used in English subjects the subject matter of the new narrative text are limited to lectures, questions and answers and discussions.

c)  Student attitudes are known to be passive attitudes of students in the learning process.

d)  The competencies possessed have not been achieved, the creativity of students is very low and so is the interest in learning.

While the results of data from literature studies obtained during the learning process obtained facts about the lack of optimal use of technology-based media that supports the delivery of information from teachers to students including on the subject of narrative text, teachers more often use whiteboards, student books, photocopies for narrative text, especially when emphasizing character building by instilling moral values contained in narrative texts. Another data found is that the narrative text used still focuses on that provided by textbook sources used by teachers.

a.  **Collecting Sources**

The needs analysis stage has been carried out and clear and complete data has been obtained, then the collection of reference sources that support the development of 2-dimensional animation videos as learning media has been carried out. Reference sources for media development are obtained from relevant sources while for material obtained from the Class IX English book 'Think Globally Act Locally' published by the Center for Curriculum and Bookkeeping, Balitbang, Ministry of Education and Culture with reference to the English syllabus IX.

b.  **2D Animation Video Product Development Design**

a)  Competency and Material Map

The development design stage in this study is to make a 2-dimensional animated video design as a learning medium. The design is made into an archetype of media development by determining Competency Standards, Basic Competencies (KD), indicators, learning objectives, and materials. In determining the Basic Competence, it is obtained that

"Understand the social function, text structure, and linguistic elements of narrative texts in the form of folklore, in accordance with the context in which they are used". While the main material is narrative text consisting of learning materials, namely 1) social functions; obtain/provide entertainment, exemplify noble values, 2) text structure; orientation, complication, resolution and coda, 3) linguistic elements, and 4) stubs. This material is intended for junior high school students Class IX semester 2 English subjects.

b) Media Content Outline

GBIM is a guide that is used as a guideline in writing a script and is made by referring to needs analysis. This contains the main media that will be displayed in the 2-dimensional animation viedo media product as an English learning media subject of class IX narrative text. GBIM contains Basic Competencies, Indicators, and display design in accordance with the subject matter of narrative text so as to create compatibility with the material and learning objectives. The preparation refers to the syllabus and RPP used.

c) Media Production Story making is done by literature study.

This story is one of the folklore from Palembang that is told from generation to generation from ancestors who have many moral messages and cultural values. This legendary story was taken by the author as a source of teaching material on the subject of narrative text in the development of class IX English learning media. In fact, the presentation of existing teaching materials is still in the form of story texts prepared in teaching materials in the form of printed books by ignoring some problems with the conditions and needs of students in the era of disruption. These problems, including the demand for the achievement of data literacy skills, technology and humanism, as well as the presence of students who have physical abnormalities such as eyes that are less functional to see, read, and write. Ears that lack hearing, so require sign language and other physical disabilities. In addition, there are also those who experience low mentality, unstable emotions, do not want to socialize, and can also be very low or high intellectual disorders. These things affect the process of achieving the learning process. On the other hand, the subject matter of narrative text is an interesting development material to be developed in the era of disruption by referring to the achievement of humanism literacy. It is intended that character building by instilling moral values contained in narrative texts is the right medium to be conveyed well. Responding to these problems, researchers developed 2D animated video learning media in English, the subject matter of Narrative Text for junior high school grade IX. 2D animation video is a multimedia-based learning media that can touch all five senses: smell, taste, hearing, sight and touch. Multimedia presents information that can be seen, heard and performed. Multimedia is becoming a complete tool that is effective in today's teaching and learning process.

(1) Pre Production

This stage is a preparation stage that must be done before making a 2-dimensional animated video. Some of the equipment needed include: 1) Adobe Illustrator Program, 2) Adobe After Effect Program, 3) Computer / laptop, 4) Microphone, 5) tablet, 6) headset, 7) making story ideas, 8) storyboard preparation, 9) making media supporting materials including character design, background design, character visualization, background visualization and backsound).

These stages are a) Making story ideas is done by studying the literature of the legend of Kamaro Island originating from South Sumatra, b) Storyboard preparation is a sketch of pictures arranged in a row. The content of the storyboard is the initial design of the product design to be made, c) the stage of Illustration Design and visualization of characters and backgrounds. The stage passed in designing a product is to make an animated character image according to the character of the character in the story. The preparation of characters, props and background settings is adjusted to the story idea to support the

production of 2D animated videos. In making illustrations and coloring visualizations using Adobe Illustrator software which has a layer feature to facilitate the process of rigging animation.

After designing and visualizing the characters, then at this stage the design and visualization of the background and also the objects that will be used as backgrounds in this animated video.

(2)  Production

a) Dubbing Dubbing is done to get a sound that can support animation to be more vivid and real. Sound is captured using a voice recorder on a smartphone using a bm-800 taff microphone.



Picture. 1 Dubbing Process

b) Lay outing Creation of a field of work that will be used to create animations in adobe after effect. The working field is created with HDTV format 1080p (1920x1080 pixels) using 29.97 fps.
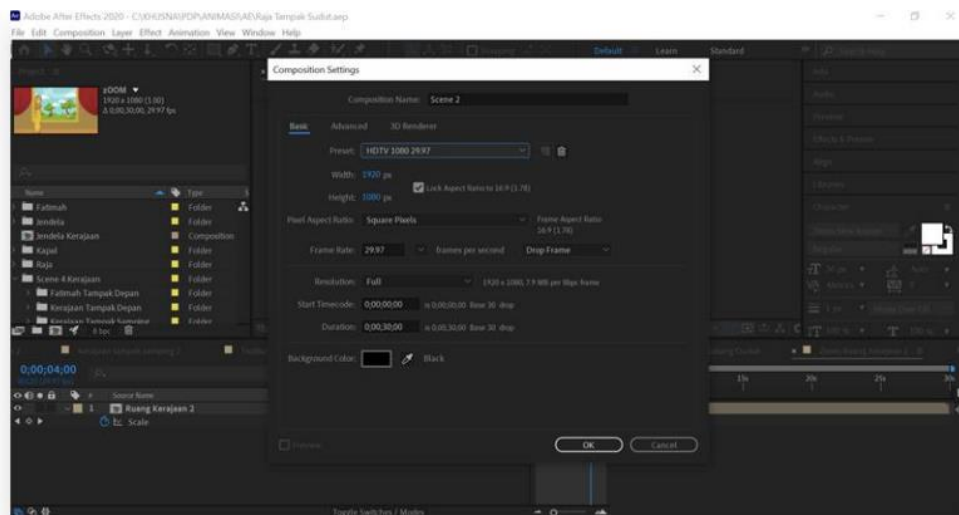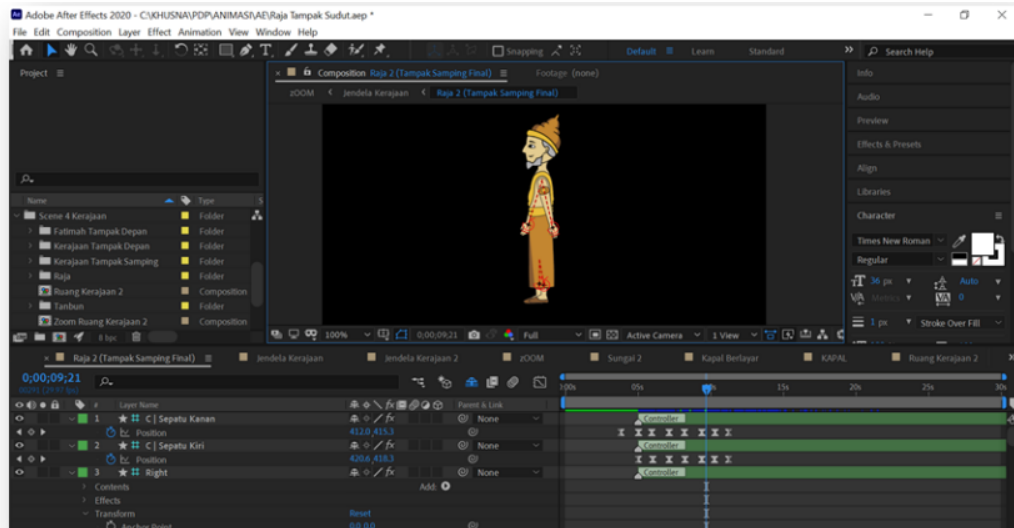


Figure 2. Working Field Settings in Adobe After Effect

c) Rigging

Character ringing is done to provide arrangement of arrangements and center points on the character. The rigging process in this animation is done using the help of the Duik Bassel Plugin on each character's anatomy to facilitate the animation process.

Picture 3 Character Animation Rigging Process
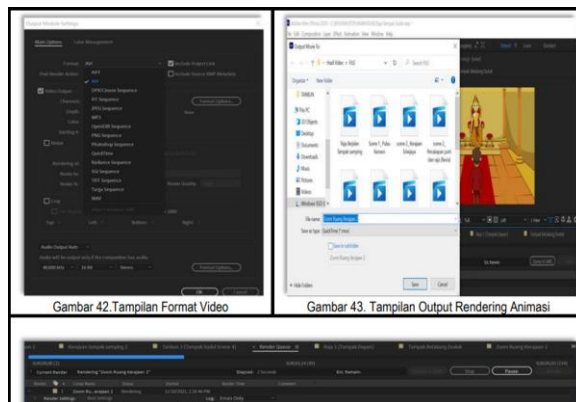
d) Animation Process

The animation process is done by combining character movements and backgrounds in one field of work on the after effect.
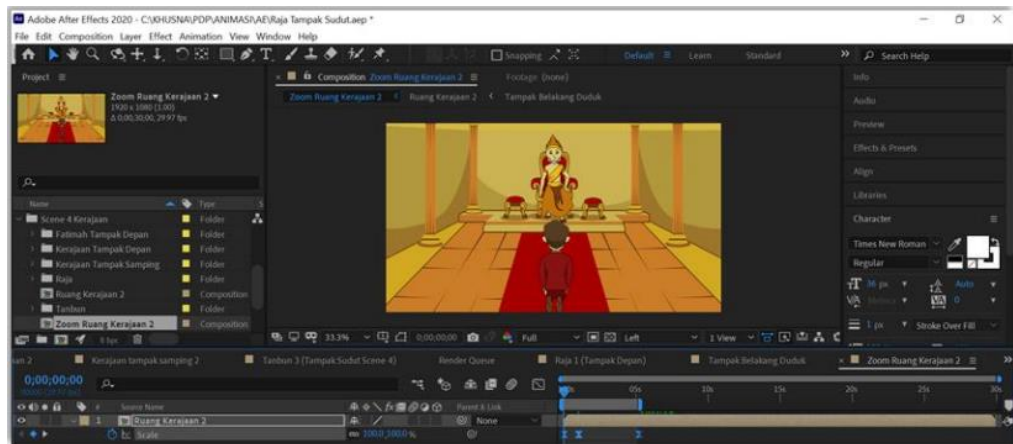

Picture 4 Process of Combining Character Rigging Animation with Background

e) Animation Rendering

After all the rigging processes and merging character rigging with the background animation process are complete, the rendering stage is carried out on each sequence or scene that has been created which will then be combined using Adobe Premiere software.


Gambar 42.Tampilan Format Video          Gambar 43. Tampilan Output Rendering Animasi

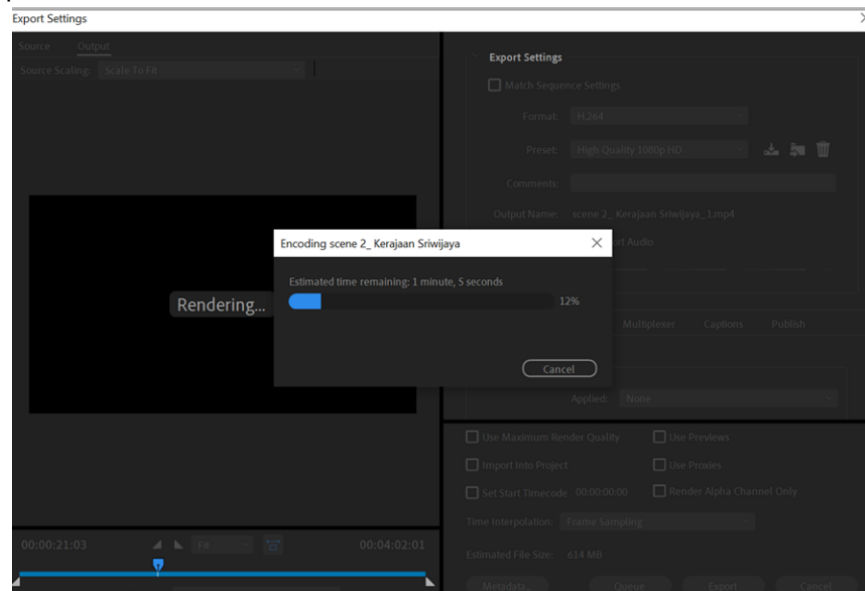Picture 5 Animation Rendering Process Display

f) Post Production

After all the animation rendering processes are complete, the next step is to combine the entire video by adding dubbing sound, back sound and text and also giving transition effects to the video. The process of merging all videos is carried out on the Adobe Premiere Pro 2021 application.
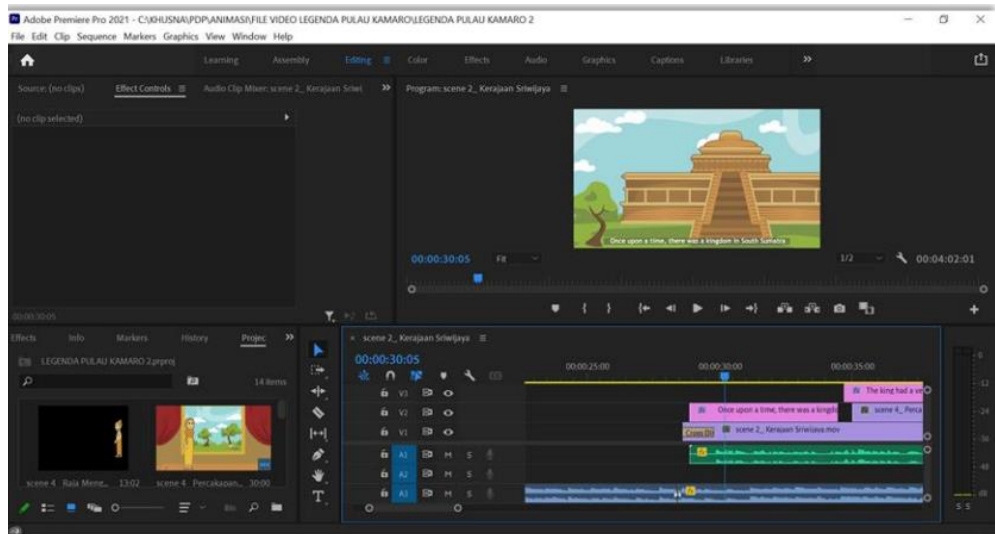


Picture 6 Video Compositing and Editing Process

After all the video compositing and editing processes are complete, then proceed with the final video rendering process. The rendering process on this video is done by selecting the file format as in figure 47. Rendering is done in H.264 format with Mobile Device Presets 1080 px so that the results remain maximum when accessed on smartphones with MP4 format.



Picture 7.  Display of the Final Video Rendering process
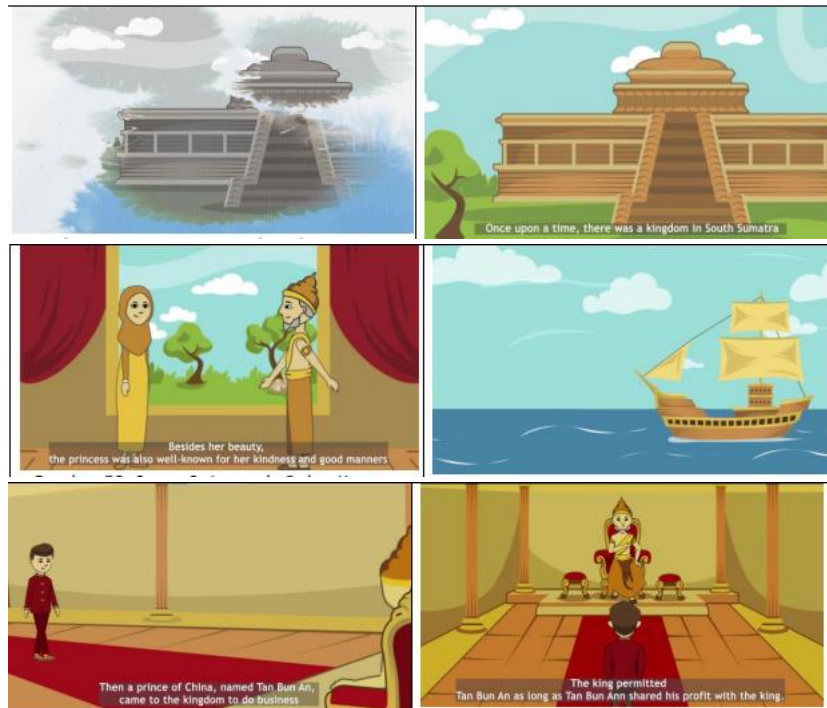
Picture 8. Display Video Results

### c. Testing

After producing products in the form of 2D animated video media as interactive media for learning English on the subject of narrative text, then media and material expert tests were carried out.

**Validation Results by Material Experts**

2D animation videos that have been produced are tested by material experts. This test aims to avoid errors in the material or content so that it remains in accordance with the syllabus used, namely the junior high school level syllabus. The explanation of the validation results is based on the suggestions presented in the following table data.

| Assessed Indicators | Revision | Follow-up |
|---|---|---|
| Quality of Material | The animated background image is not in line with the storyline. | Replace animated background images that don't fit the storyline |
| | The systematics of the storyline has not been sequenced | Guiding the systematics of the storyline |

Based on the table above, data were obtained from material expert tests, namely from the quality of material with animated background images that are not in accordance with the storyline and the systematics of the storyline has not been sequenced. The revised data was corrected with follow-up, and tested by the material again with the same questionnaire. The results of testing again by material experts obtained no improvement and then by assessing the effectiveness of 2D animation video media as well as validating it to be used as an English learning media for narrative text subjects and the results were declared suitable for use.

**Validation Results by Media Experts**

2D animated videos require improvements to the visual aspects of media and typography. Researchers follow up by revising as suggested by media experts. The product is tested back on the media expert and there is no revision and then the media expert assesses its effectiveness and validates it for its application.

**2D Animation Video Trial**

Small-Scale Trials

Small group trials are intended to test the attractiveness of the product. Students in this small group test saw the 2D animated video product given, and at the end of the product trial involving 7 students who were heterogeneously selected based on ability in class and gender then students were given questionnaires to assess the attractiveness of learning media. The small group test was conducted at SMP Muhammadiyah 1 Rawabening. The results of student responses to 2D animated videos as English learning media on the subject of narrative text were obtained with an average score of 3.42 with the interpretation criteria achieved, namely "good". Based on these results, it can be concluded that the development of 2D animation videos as an English learning medium on the subject of class IX narrative text has interesting criteria without revision.

Large-Scale Trials

After conducting small group trials, then the product is tested again to large-scale trials. This trial is carried out to convince the data and find out the attractiveness of the product widely. Respondents in this large group test amounted to 22 students of SMP Muhammadiyah 1 Rawabening class IX by giving questionnaires to find out students' responses to the attractiveness of learning media. The results of the trial obtained an average of 3.55 with the interpretation criteria achieved which are "very good", this means that the 2D animation video developed by the researcher has very interesting criteria to be used as a medium for learning English the subject of narrative text class IX. In addition to the questionnaire, treatment was also carried out with 2D animated videos on a sample of 16 students in the odd learning group of SMP Muhammadiyah 1 Rawabening once. Before treatment is given to test the effectiveness of the product, pretest and posttest are given. In large-scale trials, no product revisions were made.

d.  **The effectiveness of learning 2D animated videos as an English learning medium**

The effectiveness test of 2D animated video learning was obtained through pretest and posttest results, which were analyzed using the Paired Sample t-test. This test uses parametric statistics with the prerequisites of normality and homogeneity tests. The following are the results of statistical analysis using SPSS 20. Here are the results of the calculation of the kolmogrof-smirnov normality test using SPSS 20 with the help of a computer. Based on the results obtained, the researcher can assume that the significance value on the kolmograv-smirnov test for posttest score is 0.200 > 0.05, hence the normal distribution. And meanwhile, the pretest score has significance values on the Kolmograv-Smirnov test are 0.200 > 0.05, hence the normal distribution.

The results of the effectiveness test showed that the significance value of sig (2 tailed) was 0.043 ≤ 0.05. Thus, research on the development of teaching materials in the form of 2D animated videos shows significant differences between conventional learning media materials and 2D animated videos that have been developed. And it can be said to be effective and worth using.

e.  **Final Revisions and Product Enhancements**

The final revision comes from students' responses to the use of 2D animated video media. The response results show the attractiveness of the product for the English learning process on the

subject matter of narrative text. While product improvements come from improvement suggestions and comments from media experts, material and student responses. Furthermore, it is also based on the product effectiveness test by conducting a Paired Sample t test which shows the results of the effectiveness and feasibility of using the product.

## CONSLUSION

Multimedia is a complete tool that is effective in the teaching and learning process in the era of the industrial revolution 4.0. Coupled with the existence of elements supporting the success of the learning process, namely learning methods and learning media. Learning development is one of the Higher Order Thinking Skills (HOTS) as a reinforcement of character education and learning in the face of the industrial revolution era 4.0. Educators must prepare their students to be able to face the era of disruption by strengthening new literacy skills, namely data, technology and humanism. So that educators are required to innovate to communicate and convey messages to learners.

Based on the results of the needs analysis, the development of 2D animation videos is very necessary as one of the interactive media for learning English, the subject of class IX narrative text. And based on the results of data from literature studies, researchers developed 2D animation videos based on local wisdom, namely taking folklore from the area of origin of the research sample, namely South Sumatra. The selection of folklore is taken randomly, namely "the Legend of Kemaro Island". Animation with its appearance makes more focused and curious about the teaching material that will be delivered by educators. Animation consists of 2 components, namely audio and visual. This element makes animation interesting and can be used to convey messages more effectively to learners. Furthermore, 2-dimensional animated videos are the right medium for character building by instilling moral values contained in narrative texts.

Meanwhile, according to the results of the development, it can be seen that 2D animation videos as English learning media on the subject matter of narrative text for junior high school grade IX are declared effective and suitable for student character building by instilling moral values contained in the legendary story of The Legend of Kemaro Island. The development of media for making work fields to create animation is adobe after effect with HDTV format 1080p (1920x1080 pixels) using 29.97 fps. The stages that have been carried out for product trials are trials by media and material experts from the beginning of the design to the learning process. Further activities are carried out by distributing questionnaires to students on a small and large scale, small-scale trials and large-scale trials and product revision stages. Based on the results of these activities, information can be obtained that validation tests are carried out by media and material experts from the beginning of the design until a product in the form of a 2D animation video is obtained, trials are carried out twice, namely small-scale trials (trial 1) and large-scale trials (trial 2). As well as the assessment of the learning process that results in differences in improving the character and ability of students in reading comprehension of stories in the form of narrative text.

According to the results of the analysis, it can be concluded that 2D animation videos as a medium for learning English on the subject matter of English for junior high school grade IX in character building are declared effective and feasible. This can be seen from the results of the study which showed results in accordance with what researchers expected.

## REFERENCES

Istiqlal, M. (2011). Development of interactive multimedia-based learning media using Adobe Flash CS. 3 In learning mathematics in grade X semester 1 students the standard of competence of the inequality system is one variable. Yogyakarta: UIN Sunan Kalijaga.

Indonesia, M. P. D. K. R. (2013). Regulation of the Minister of Education and Culture of the Republic of Indonesia.

Putri, A. W. S. (2016). Development of multimedia-based 2D animation video learning media using Adobe Flash cs6 in subjects Indonesian grade III elementary school (Doctoral dissertation,

PGRI University Yogyakarta).

Kuspiyah, H. R., Amaliah, K., Mustofa, M. I., & Ramadhani, D. (2021). Visualisasi Karakter Video Animasi 2D Legenda Pulau Kemaro. Jurnal Informatika, 6(3).

Munir, M. (2012). Multimedia concepts &; applications in education. Bandung: Alfabeta.

Rahmawati, A. S., &; Dewi, R. P. (2019). The use of interactive multimedia (MMI) as a learning medium in improving physics learning achievement. Journal of Physics and Technology Education, 5(1), 50-58.