



COMPUTER-BASED LEARNING MEDIA IN ANIMAL RECOGNITION WITH KOREAN LANGUAGE FOR CHILDREN USING UNITY 3D

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ARTICLE INFO	ABSTRACT
<p>ARTICLE HISTORY: Received :24-11-2024 Revised : 30-11-2024 Accepted : 15-12-2024</p> <p>Keywords: Hallyu, System Development Life Cycle, Korean, Unity 3D, Hangeul.</p>	<p><i>Hallyu or the Korean wave is a pop culture originating from the Republic of South Korea, indirectly influencing the spread of Korean culture and brand production, increasing interest in South Korea. Tought hallyu, both through electronic and print media, using the Korean language has made some people, especially teenagers to adults, interested in learning Korean. In this study, the author will examine the Korean language, which has recently been a lot of things related to Korea and has become a topic of conversation among Indonesian people, especially children. By carrying out data collection methods using interviews, literature or literature study methods with system development methods will using the System Development Life Cycle (SDLC) and to support the creation of interactive learning media will use Unity 3D software, Windowshare Filmora. Then it will be implemented in an animation Learning Media for Recognizing Animal Names in Korean dor Children Using Unity 3D. The results of this learning media are expected to make it easier for children to recognize animal names in Korean.</i></p>

INTRODUCTION

The development of information technology has an impact on significant changes in all aspects of life. Likewise, the field of education has changed and transformed, with the rapid development of the field of information technology can accelerate the delivery of material to be delivered. Information technology is able to present data and transmit information at high speed, allowing users to access knowledge quickly. The development of science and technology increasingly encourages the

utilization of the latest technological achievements in the teaching system and these devices can be in line with the development and needs of the times. Learning media is a classification of experience depending on its level from the most specialized to the most abstract, participation, observation and direct experience have a very large influence on the learning experience felt by students [1]. The introduction of a concept to students will be well communicated if the concept requires students to be directly involved in it, compared to concepts that only associate students to observe [2]. As we know children have a high absorption so we must instill the basis of learning for children, one of which is the introduction of animal names and also learning foreign languages, one of which is Korean, which will be indispensable in the future. Without us realizing it, there are many Korean production brands that are liked and suitable for children's entertainment, for example Tayo the little bus cartoon, Pororo the little penguin and the song Agi Sango or better known as Baby Shark. In addition, now Korean has also begun to become a foreign language that is widely studied apart from English, Chinese and Japanese. This is indirectly an influence of Hallyu or Korean wave which is a pop culture originating from the Republic of South Korea.

From the influence of Hallyu, both through electronic media and print media, all of them use Korean, making some people, especially from children, teenagers, to adults, interested in learning Korean. Reporting on the website ethnologue.com Korean is the most spoken language in the world which is in 20th place for more than 15 years on the Top 200 most spoken languages 2021 with 82M. Apart from the influence of Hallyu which attracts Korean language enthusiasts, there is also cooperation between South Korea and Indonesia in the field of education from the Country Profile and Bilateral Relations of the Embassy of the Republic of Indonesia in Seoul, Republic of Korea (kemlu.go.id), according to data as of November 2019 there are 1,500 students from Indonesia who are studying in South Korea either majoring in Korean or other majors [3]. In the learning media designed by the author will use Unity 3D. Unity 3D-based learning media can motivate students, increase understanding, and stimulate students' thinking in the learning process. Unity 3D is one of the innovations of interactive learning media by utilizing computer technology. Unity 3D-based learning media makes learning more active in obtaining information, so that it is more effective in delivering material to students [4].

Making computer-based learning media in Korean animal recognition will use the system development life cycle (SDLC) development method. According to [5], the System Development Life Cycle is a software development process model that is carried out in stages according to existing mechanisms, namely planning,

analyzing, designing, implementing and maintaining the system. Therefore, in this study, the authors will create a learning media entitled “Introduction to animals with Korean as a form of learning about recognition and learning to children about animal names”.

RESEARCH METHODS

2.1 Research Methodology

The type of research used by the author for this research is quantitative research. It is said to be quantitative research because in the data collection technique the author uses a questionnaire or survey results in his research.

2.2 Data Collection Technique

Data collection techniques are used to collect data in this study so that the required data is obtained. Data collection techniques are the most strategic step in research because the main purpose of research is to collect data. The data collection techniques in this study are as follows:

a. Literature Study

Literature study, namely, an activity of analyzing and evaluating research results and collecting books and journals and sources that are considered important and have something to do with writing the final project to strengthen the ideas and thoughts of researchers.

b. Observation

Observation, namely, a step that will be taken. In this study, data was collected to be used as material in making animal recognition with Korean as a form of learning about recognition and learning to children about animal names.

c. Analysis and Design System analysis and design, namely, analyzing the problems to be studied and designing in detail about what will be done and how to present it. At this stage, learning media is made using the Unity 3d application as a media maker.

2.3 System Design

System design aims to provide an overview of the animation that will be made and aims to make this learning media animation easier to understand and understand as well as interesting to watch. This learning media is devoted to children who can read who are interested in learning Korean or who want to recognize the names of animals in Korean. This learning media is made using Unity 3D.

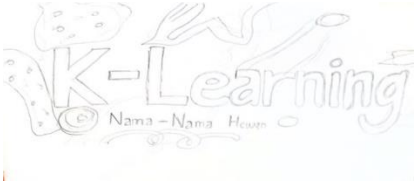
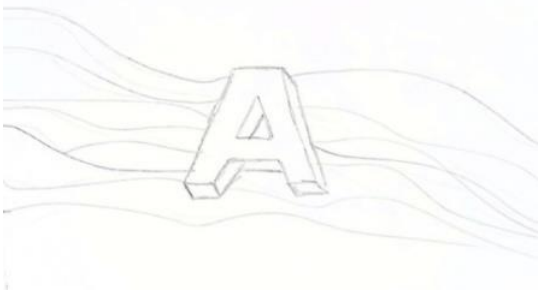
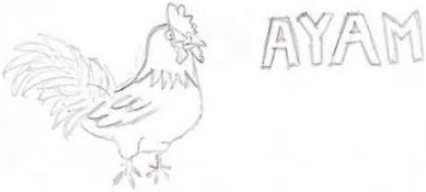

2.4 Development Stage






The Development stage is the author's initial stage in designing animated media learning the introduction of animal names in Korean, where at this stage it is determined what story ideas will be included in the video.


2.5 Pre-Production Stage

At this stage, the author does several processes before entering the production stage rather than the animation produced according to what the author wants.

Table 3.2 Animal name recognition animation storyboard

No.	Image/Action	Description
1.		Initial View of Animation Intro that displays the title of the learning media animation of animal recognition in Korean which will display the name of the animal according to the alphabet (A-Z).
2.		Display Letter A Displays the letter A as the prefix of the first animal name to be introduced
3.		Display pictures of animals and their names Displays a picture of a chicken and chicken as a letter
4.		Animal Name Display in Korean Displays a picture of a chicken and the name of the chicken in Korean
5.		Display Letter Z

		Displays the letter Z as the prefix of the animal name to be displayed and is the last animal to be introduced.
6.		Display of animal pictures and their names Displays the last image which is zebra and zebra as a letter
7.		Animal Name Display in Korean Display pictures of zebras and zebras in Korean
8.		Evaluation Quiz Display Transition from material to quiz questions. In this session there are two types of quizzes that will be displayed where each consists of two quiz questions.
9.		First Quiz Type Display This type of quiz is guessing/remembering the Korean language of animals through pictures. Displaying pictures of animals to recall what the Korean language of the animal is and given 3 seconds to answer.

10.		<p>Second Quiz Type Display</p> <p>This type of quiz is to complete the name of the animal in Korean. It displays an image of the animal and the name in Korean but is incomplete because the name is given 3 seconds to answer.</p>
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1. Production Stage

After doing the pre-production stage, then proceed to the production stage. It is at this stage that the process of making animated learning media for animal recognition in Korean begins to be designed.

2. Texturing

Providing details on the surface of the object created, so that each object has different details and colors. By dragging and dropping a shader that has been made into the object directly. This texture has been created in Unity Story Assets which are imported into Unity.

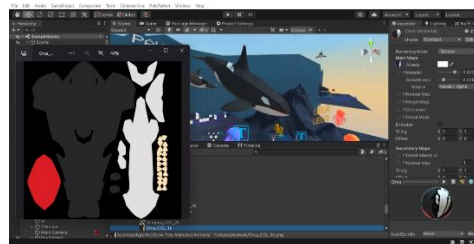


Figure 1. Texturing Process

3. Animation

After giving each object and character a shader, we will add animation movements for each object or movement. For each character, Bone Rigg will be given, which is a kind of bone in animal characters so that they can be moved as desired. The animated characters that the author uses are in the Unity Assets Store.

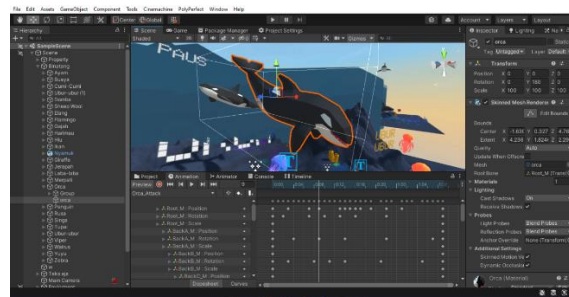


Figure 2. Animated Characters

4. Post Processing

Post-Processing is the process of applying filters and effects to an animated image in order to create an aesthetic and appealing look for the audience.



Figure 3. Filter *Post-Processing*

5. Recording

Recording is the final step in the animation production stage, namely recording all animation scenes in the Unity application, because Unity does not have a recorder, it must be installed Cinemachine which functions as a plug-in. Cinemachine is a plug-in that is integrated with Unity to record animation into various forms, namely png photos, gifs, audio, animation clips, and also mp4 videos. Can change the resolution of the recorded video, for this the author recorded with HD resolution, 1080 to produce good animation and not heavy when doing the editing stage. Here is how Cinemachine looks inside Unity 3D.

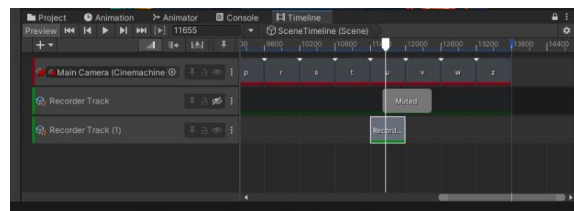


Figure 4. Cinemachine view in Unity 3D

6. Post-Production Stage

After passing the production stage, it is continued to the post-production stage which is the last stage in the design of animated learning media for animal recognition in Korean.

7. Compositing (Inserting Sound and Backsound)

In the compositing process (inserting sound and backsound) the author uses the author's voice and also google imported into Windowshare Filmora.

8. Editing

In this editing process, the author uses the Wondershare Filmora application to make it easier to change the animation arrangement that has been made and perfect the

animation and add other aspects to make the video look more than the Unity 3D application to become an mp4 video.

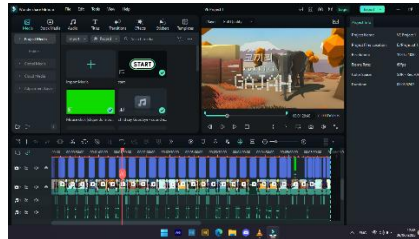


Figure 5. Display of Wondershare Filmora

RESULTS AND DISCUSSION

Figure 5. Wondershare Filmora DisplayWith the development of information technology has an impact on significant changes in all aspects of life. Likewise with the field of education that has changed and transformed, with the rapid development of the field of information technology can accelerate the delivery of material to be delivered. As we know, children have high absorption so we must instill the basis of learning for children, one of which is the introduction of animal names and also learning foreign languages, one of which is Korean, which will be indispensable in the future. Without us realizing it, there are many Korean production brands that are liked and suitable for children's entertainment, for example Tayo the little bus cartoon, Pororo the little penguin and the song Agi Sango or better known as Baby Shark. In addition, now Korean has also begun to become a foreign language that is widely studied apart from English, Chinese and Japanese. This is indirectly an influence of Hallyu or Korean wave which is a pop culture originating from the Republic of South Korea.

3.1 Learning Media

Media can be interpreted as an introduction to information to be received by the recipient. The word media comes from the word medium (Latin), which means introduction or intermediary. Media or medium is a link between two parties to record, present, share, and distribute through certain sensory stimuli. The Association for Educational Communication and Technology (AECT, 1979) defines media as all kinds of tools used to distribute information [6].

3.2 Korean language

The Korean language or commonly referred to as Hangeul was created by King Sejong in 1443. Korean is the most widely spoken language in Korea and is the official

language of South Korea and North Korea. The original Korean writing system is called Hangeul which is a syllabic and phonetic system. The syllabic system is a change in ideograph writing where the syllabic system contains syllable sounds, and does not express images, ideas, or words. In this syllabic system where each letter represents one consonant or one vowel. Phonetics is a field of linguistics that studies the sounds of language without regard to whether the sound has a function as a distinguishing meaning or not.

3.3 Unity 3D

Unity 3D is a game engine that can be made by individuals or teams to make 3D games quickly and easily, by system default, unity 3D is set to make games of the genre (FPS), but unity3D is commonly used to make games of the Role Playing (RPG) genre, and Real Time Strategy (RTS), [7].

3.4 Wondershare Filmora

Wondershare Filmora is one of the effective tools/tools and an alternative choice that can be learned. The Wondershare Filmora application provides assistance to start any movie project by importing and editing videos, adding transitions and special effects and final production of DVDs, mobile devices or the web. In addition, users can utilize various facilities available because there are various advantages that can be felt when using this application. So with the various features available, teachers can be creative according to the selected learning content [8].

3.5 Implementation

A. Animation Title Scene Display

The animation title scene display is the initial display in the animated video introduction to animal names in Korean. The animation title scene display can be seen in the image below.



Figure 6. Animation Title Scane Display

This display shows the title of the animation that has been created, namely “K-Learning Animal Names”. The author gives the title K-Learning which stands for Korean Learning which means Korean Language Learning.

B. Alphabet Scene Display

The alphabet scene that is displayed is an alphabet from A-Z. In this case the author only displays the results of the letters A and Z which are the initial and final letters in the alphabet. The alphabet scene display can be seen in the picture below.



Figure 7. Scane View of Alphabet Letter A

The letter A scane is the first scane of the 26 letters displayed in this animation.

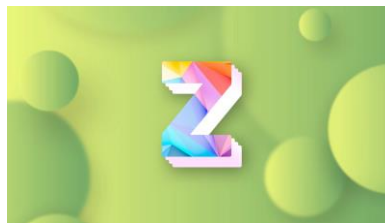


Figure 8. Scane view of the letter of the Z alphabet

The letter Z scane is the last scane of the 26 letters displayed in this animation.

C. Animal Name Scene Display

The scane display of animal names displayed are chicken and zebra. In this case the author only displays the results of chickens and zebras which are animals whose initial letters of the name are the beginning and end of the alphabet. The animal name scane display can be seen in the image below.



Figure 9. Animal Name Scane Display Prefix letter A

The A prefix animal name scane is the first scane of 26 animal names displayed in this animation.



Figure 10. Scane view of animal name prefixed with letter Z

The Z prefix animal name scane is the last scane of the 26 animal names displayed in this animation.

D. Korean Animal Name Scene Display

The Korean animal name scene displays the name of the animal in Indonesian then accompanied by the name of the animal in Korean. The scane display of animal names in Korean can be seen in the image below.



Figure 11: Scane view of Animal Name A in Korean

This scane introduces the name of animal A in Korean which is 'dalk'.



Figure 12. Scane View of Animal Name Z in Korean

This scane introduces the name of the animal Z in Korean, which is 'eollukmal'.

E. Quiz Start Scene Display

The initial quiz scene display is a transition display from the introduction of animal names in Korean to an evaluation quiz. The initial quiz scane display can be seen in the image below.



Figure 13. Display of Quiz Scane

This display shows the initial scane of the quiz that has been created, namely “Quiz Time”. The author gives the title Quiz Time because to answer the quiz is given 3 seconds to recall the material explained in the video. In this quiz time there are 2 types of quiz where in each type there are 2 quiz questions.

F. Type 1 Quiz Scene Display and Answers

This type 1 quiz scene display is a quiz that displays questions in the form of animal names and pictures to be answered in Korean from the question. The type 1 quiz scene display can be seen in the picture below.



Figure 14. Scene view of the first question in Quiz Type 1

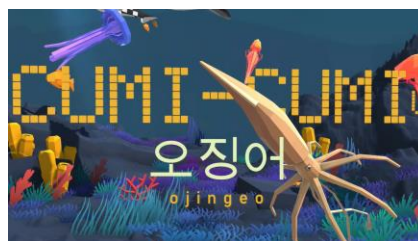


Figure 15. Scene View of the First Question Answer in Quiz Type 1

In the display of Figure 14 and Figure 15, it can be seen that the first question displayed is a squid animal and the correct answer is 'ojingeo'.



Figure 16. Scane View of the Second Question in Quiz Type 1



Figure 17. Scane View of the Second Question Answer in Quiz Type 1

In Figure 16 and Figure 17, it can be seen that the second question displayed is about tigers and the correct answer is 'horangi'.

G. Type 2 Quiz Scene Display and Answer

This type 2 quiz scene display is a quiz that displays questions in the form of animal names and pictures to be answered by completing the missing letters in the Korean animal name of the question. The type 2 quiz scene display can be seen in the image below.



Figure 18. Scane view of the first question in Quiz Type 2



Figure 19. First Question Answer Scane in Quiz Type 2

In the display of Figure 18 and Figure 19, it can be seen that the first question displayed is a sheep animal where the letters displayed are 'y' and 'n' then it must be completed with the letters 'a' and 'g' to be the correct answer, namely 'yang'.



Figure 20. Scane view of the second question in Quiz Type 2



Figure 21. Second Question Answer Scane in Quiz Type 2

CONCLUSION

In designing the animation of the introduction of animal names in Korean, it goes through several stages of production, namely: 1) Determining the main application used, Unity 3D; 2) Choosing other software assistance as a supporting editing application such as Windowshare Filmora which is useful for editing or modifying images or photos; 3) Determining the material to be used in learning media for introducing animal names in Korean; 4) Collecting the materials needed such as images, illustrations, animations, backsounds, backgrounds, and choosing the colors used; 5) Creating animation designs and animation designs, texturing, animation, post processing, recording, compositing, editing; 6) The animation for introducing animal names in Korean is finished.

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