



Designing an Animation Video for Children on Handling Leaf Waste by Turning It into Compost

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ABSTRACT

Leaf waste is a trivial matter that can become a problem if leaf waste is not managed properly. Burning leaf waste will only throw the waste into the air, which if inhaled can have a bad impact on health. The goal of this research is to design an animated video that can provide information to families about how to process dry leaves into compost. The method used in this research is qualitative experimental. The results of this research are in the form of animated videos. The results of this animated video, it is hoped that are able to increase children's knowledge and interest in carrying out activities of turning dry leaves into compost. It can be concluded that animation is one of the media choices for conveying information, especially for children. Animation can make information easy to understand because it uses audio and visual media.

Keywords: Design, Animation, Information, Leaf Waste, Compost

1. INTRODUCTION

Leaves are part of a plant that will gradually fall off and be replaced by new leaves. The leaves themselves are plant organs on the stem, usually have a thin leaf shape and contain a lot of green pigment called chlorophyll (Zubaidah et al., 2013). Generally dry leaves are collected and often become environmental waste. If leaf waste is not managed properly, it will result in flood disasters and could be dangerous or detrimental to health. For example, managing leaf waste by burning it, because this is the easiest way to reduce leaf waste.

Small particles in the smoke from burning leaf waste can also cause problems with the respiratory organs. The point is that burning leaf waste can indeed reduce leaf waste, but it can also be detrimental to health. Burning leaf waste in the open can produce substances containing toxic, irritating and carcinogenic compounds. Smoke from burning all types of waste, including plastic, wood, paper, leaves, and glass, releases many toxic pollutants. (Tamin, 2021). Efforts to reduce and manage waste properly include statutory regulations in Law of the Republic of Indonesia Number 18 of 2008 concerning Waste Management. In article 29 paragraph 1 point d which states "Every person is prohibited from managing waste that causes pollution and/or destruction of the environment". There is also article 29 paragraph 1 point g which reads "Every person is prohibited from burning waste that does not comply with the technical requirements for waste management".

Regarding leaf waste, information is needed that can increase public knowledge, especially children, in handling leaf waste better. One possible way to provide this information is through animated video design. Children are one of the generations who continue the future. It is hoped that children who are well educated can become one of the hopes for the environment in the future. Children generally like animation as a form of entertainment. Animated videos are part of linear multimedia that are able to provide information narratively. In animated videos, this media is able to combine visual and audio elements to attract the attention of the audience. Visual elements such as characters, background environments and events can make the audience focus on receiving information without feeling patronized. In designing animated videos, studies need to be carried out to make the video attractive to the audience. Determining the audience and how to communicate with them is the first thing that needs to be done so that designers understand the purpose of the design.

The initial stages in animated videos, such as character studies, are adjusted to the communication objectives in video design. Characters who can represent the audience are prioritized as main characters so that they can feel and represent the audience themselves. For example, in this research, information about processing leaf waste into compost is aimed at families, especially mothers and children, so this character is needed to appear in the video. Likewise, regarding the study of the setting where the event occurs, the setting needs to be designed in such a way that the setting that appears is familiar to the audience. With visual studies that design everything with things that the audience feels close to, it is hoped that this can be a way to increase interest and increase the sense of reality as it happens in their everyday environment.

2. LITERATURE REVIEW

In research conducted by Mahongnao et al (2022) stated that in solid waste management, pollution-free disposal of leaf waste in urban areas is still not standardized and adopted. The composting of the leaf waste was set up through the essential microbe (EM) method to produce compost. In the Mahongnao research, research is prioritized regarding compost processing techniques from leaf waste. Marchal et al (2022) conducted research with the title "Contribution of Early Childhood Education to a Sustainable Society: Influences from Home in Preschool Children's Understanding of Composting in France", the results of this research show, when asked about the opportunity of working on compost with their pupils, teachers involved in this study objected that they did not feel able to do so. The reasons given were their lack of knowledge and training on the subject. Thus, we suggest that

composting could be introduced during the initial training of preschool teachers and during the vocational training and professional development of experienced preschool teachers. In this research, it appears that adults lack information about processing compost so they cannot teach it to children.

In research, Muntiani et al (2021) stated an animated video as a medium to introduce discipline to children aged 4-5 years, namely being able to use the animated video learning media as a digital learning media innovation, it is recommended that teachers use the media in the learning process. The research also states develop animated video learning media with the values of other characters; Can develop media with more attractive designs according to the characteristics of early childhood. Research from Aprilian et al (2023) with the title "The Effect of Using Animation Media on Learning Outcomes of Elementary School Students in Learning Science" with the results of the research conducted can be concluded that the description of animation media takes place effectively because the percentage category for each meeting increases. An overview of the learning outcomes of class has increased. This research shows that animation media is able to make audiences more interested so that animation media can be used as an effective learning media, especially in this case for children.

From the literature that has been conducted previously by previous researchers, nothing has been found that specifically discusses education on handling dry leaf waste to be used as compost using animated video media, especially with the target audience of Indonesian children. Making compost is better than burning dry leaf waste which is scattered around and can cause respiratory diseases. Thus, there is an opportunity to study animated videos to teach how to use dry leaves to make compost and fertilizer for the surrounding environment.

3. METHODOLOGY

In this design, an experimental qualitative approach was used because the researcher wanted the research to place more emphasis on phenomena that occur in the field or in society. This research method itself is a method used to answer research problems related to data in the form of well-explained narratives and in this case involving video as a way to become a medium that can be involved in society. In this design, several data collection techniques are used, namely, by means of literature study, observation and designing the media used to view the results. In general, this design will discuss management Leaf waste becomes compost through animated video media. The object in question is leaf waste produced from the plant cycle which will shed its leaves. 3D animation is a technique for creating images move in 3-dimensional digital space. In 3D animation frames in a way simulating each image, will be filmed with a virtual camera, and the output is a rendered video. In an animated video media, what makes it different from other media is that animated video media can be enjoyed in terms of its visuals and audio, which are different from printed media such as books, posters, banners, and so on. Animated video media can contain visuals and audio that are combined and matched to make the main media more interesting (Tonalou & Albar, 2022).

The target audience for this design is young teenagers aged 12-16 years who live in Indonesia. Men and women who work as junior high school students, who have middle to upper economic status. This was determined because there were lessons related to waste that would be learned by the target audience during the learning period in junior high school.

According to Global Achievement (2021), children aged 12 to 16 years who are in junior high school experience a period of ambivalence, namely a state of oscillating between socializing and loneliness. In this situation, children tend to be alone or communicate more openly with their peers. In addition, they tend to move away from parental control and role. Children seem to want to be free from parental support, roles, or anything that could influence them. Apart from that, children at this age tend to be trained from an early age to identify interests and career tendencies that they want to pursue. At this age, older children are usually easier to encourage and motivate. There is also a secondary target audience for this animation design, namely adults aged 35-50 years, chosen because they are generally parents whose children are around 12 years old and can guide their children to do the right thing in managing things. Those who reside in Indonesia and are male and female.

4. DISCUSSION

From the data obtained, it can be seen that the waste problem is a problem faced by all countries in the world. When an area is developed, the amount of waste produced will increase. Especially in this design regarding leaf waste where leaf waste is a problem which if left unchecked will only become a pile of waste which will damage the beauty of the surrounding environment. In society, leaf waste will just be left to pile up. Then, after piling up the leaf waste, it will be burned because burning leaf waste is an easy way to reduce leaf waste. In reality, burning leaf waste will cause diseases such as ARI (Acute Respiratory Infection). Leaf waste resulting from fallen leaves can be done in various ways. Quoted from kompas.com which was reported by DNR Wisconsin, stated on the government website citarumharum.jabarprov.go.id (2021). There are several impacts of waste on the environment. Burning household waste, plastic and painted wood is harmful to the environment, as they release toxic chemicals that pollute the air. Air polluted by smoke from burning waste can be inhaled by humans and animals, stored in the soil, and exposed to water and plant surfaces. Residues from burning pollute the soil and groundwater, and can enter the human food chain through plants and livestock. There is a need to inform about the management of leaf waste into compost because the behavior of people who only leave and pile up leaf waste and then burn it is inappropriate behavior to do. The most common thing is to use leaf waste to make compost. Compost is organic material that has undergone a weathering or decomposition process. Compost will re-fertilize the soil and be beneficial for plants. Composting takes longer than burning fallen leaves, but it is easy and can reduce leaf fall. Composting is an opportunity that people can take advantage of to reduce their leaf waste in the right way, and without harming anyone. By informing the public regarding managing leaf waste in a better way. Because if information is conveyed early on, it can become a habit later in life. And it is hoped that parents can show wise behavior in managing leaf waste. One way is to turn leaf waste into compost. This can benefit the plant again without endangering health or harming anyone. Therefore, providing information on leaf waste management must be easily accessible.

4.1. Creative Strategy

In designing information media, managing leaf waste into compost is by creating information media that can be easily accessed and understood by the public and young people. Based on this, animated video media was chosen as the main media because animation is a media that children like and is a media that makes it easier to convey information in an interesting way. The presence of visual and audio media simultaneously makes animation a very interesting medium for conveying information. The animated video chosen is a 3D (3 Dimensional) animated video which has advantages compared to other animations. The main advantage of 3D animation is its ability to show a more realistic volume, when compared to other types of animation. Images produced from 3D animation can be more dynamic and detailed when compared to other animations. In 3D animation, everything from perfect images that are more realistic and detailed can be produced to character movements that can be made more real. 3D animation can also be more attractive to the target audience because in 3D animation all the objects created can look more realistic and dynamic. The headline used is "Keluarga Hijau, Hijau Bersama Kompos" (Green Family, Green with Compost). The use of the words "Green Family" shows that the theme of the animation created is a family theme which has the main character as a mother who teaches her children how to make compost. Green itself means the color green which can represent the beauty of trees and plants and represents the meaning of environmental cleanliness. The use of the words "Green with Compost" indicates that compost is a compound that can make plants fertile again. By composting leaf waste, it can be managed better and can reduce leaf waste. Using appropriate text in designing this video is a form of copywriting. In Harmoko & Hermawan's (2023), copywriting in a broad sense is the activity of copying something to produce something new that is similar or identical to the original text or condition. Copywriting can also be understood as the process of transferring what is seen, heard, and thought into text, images, or audio-visual form. Meanwhile, in a narrow sense, copywriting has various meanings according to the field of discipline such as advertising, marketing, public relations, or other fields. The typography in this design is used for several explanations and subtitles in animated videos. The typography used for headlines or titles from main media is Chewy because this typography has a relaxed style and is attractive as a title. With good readability and typography that looks like a child's handwriting is not very neat. The typography used for subtitles on media and body text on supporting media is Concert One, because this typography has a relaxed style but has very good readability with the absence of corners making the font look attractive and relaxed.

4.2. Visual Concept

Visual concepts are a series of processes or stages to determine the best concept to solve a problem. The visual concept is designed in such a way that it becomes a visual medium that is attractive to the target audience. In creating a visual concept using animated video media, this design uses chibi-style animation. The chibi style itself is characterized by large heads and large eyes. The reason is that this style really shows the nature of children who are short and small in accordance with the meaning of the word chibi itself. In animation, characters that are attractive to the target audience are an added value because the characters can attract more attention from the target audience. Animation makes it easy for audiences to understand information because it is assisted by audio visuals. The format used in designing this animated video media uses video media measuring 720p (1280 x 720 pixels).

The 720p size was taken because the video size is HD (High-definition). The 720p size will also make it easier to render animations because it takes less time compared to 1080p. Characters made in chibi style have large heads with big eyes. And this style really shows the nature of children who are short and small in accordance with the meaning of the word chibi itself. In figure 1, the visual concept of this design character, the character has Manga Chibi characteristics. With the background in the animation design which was created using the background of a house yard with trees in front of the house, it shows that there will be a problem of accumulated leaf waste. The setting of a house in a complex with a car depicts an upper middleclass economy. In this design property study, there are several properties that will be created. The following are some of the properties needed for trees, sacks, brooms, matches, leaves, and bamboo chairs and others. Mathews (2016) said Anime and manga share many similar characteristics as well as exaggerated physical features, so readers should probably pay the most attention to dramatic form.



Figure 1: Family characters & background setting in this animation design.

Source: author's work

4.3. Production Techniques

The design for making the animation entitled "Green Family" with the episode title "Green with Compost" went through several production stages. Starting from looking for story ideas that will be used in animation. In making this animation, it is divided into three production stages, namely, pre-production, production and post-production. In making this animation, the applications used were Blender, Adobe After Effects and Adobe Premiere Pro. The pre-production stage is the stage where before the animation is executed, there are stages that are usually passed to make the animation easier, including synopsis, script, storyboard, concept art. Pre-production aims to ensure production runs well and is organized. The production stage is the stage where everything that has been done in the pre-production stage is executed into an animation. In the production stage there are several stages including 3D Asset, Layout and Animate. At the rigging stage, character assets that have been created will be given bones at the rigging stage. Like human bones, these bones are used so that the character can move. When providing rigging, the characters are made to have movements that resemble humans. Figure 2 show rigging process will determine how the character will move in the next stage. By making good rigging, it can speed up and make the next stage easier. After all the models have been laid out to create an atmosphere

and the characters have been rigged, the next stage is animate, where the character assets will be moved in such a way that the characters can move, such as walking or other activities. In making the animate file, one shot is created in one file. Which will make it easier to carry out the next stages. Alhumaidhi (2020) state that The network usually includes many heads connected by edges and faces, which give the appearance of model to a 3D object or 3D environment.



Figure 2: Production Stage with Blender Application.

Source: author's work.

The post-production stage is the stage where all the animate results that have been completed are worked on. At this stage it can be considered that all production stages have been completed and will be converted into image or video media. The production stage will go through several stages to make the animate stage into an image which then becomes a video. In the production stage there are several stages including Lighting, Rendering, Compositing and Editing. In the rendering stage, the 3D model that has been produced is converted into an image or video. In the Compositing stage, graphics will be added that support the delivery of information in the video to the target audience. The editing stage is the stage where you will add voice over, dubbing music and several sound effects to the video that has been neatly arranged. Some videos add additional sky backgrounds and add vignettes or black edges. Apart from that, at the editing stage you will add a color grading effect so that the colors look better and more attractive. The following are several excerpts and explanations from the animated video media in this design.

Pugh (2018) stated in his research that in many games, such as videos, the narrative generally presents male characters as active characters compared to female characters who are more passive. The figures below illustrate the general narrative in designing this video. Figure 3 shows a dirty environment due to scattered leaf waste which is then cleaned by a man. a scene where a man is burning leaf waste which produces puffs of white smoke that billows into the air, where a man burns leaf waste which produces puffs of white smoke that billows into the air. Figure 4 shows Mom cleaning her yard from leaf waste, then her two children help her to clean her yard. The next scene where the child is trying to burn leaf

waste is immediately prohibited by the mother. Mother then invited her children to make compost together. Mother, son and daughter squatting and rummaging through leaf waste. Then the sack filled with leaf waste is added to the water mixed with the remaining used rice.



Figure 3: Scene of someone burning leaf litter and creating clouds of smoke.

Source: author's work.



Figure 4: Scene of a mother teaching her child to make compost.

Source: author's work.

5. CONCLUSION AND RECOMMENDATION

Animated video media was chosen because animation is a media that is liked by the target audience and is a media that makes it easier to convey information in an interesting way. The presence of visual and audio media simultaneously makes animation a very interesting medium for conveying information. By using an animated video media, it is hoped that the production of compost made from leaf waste can be conveyed. The animated video entitled "Green Family" with the episode title "Green with Compost" provides information regarding leaf waste management. From the start, it is not a good idea to manage leaf waste by burning leaf waste. Then convey information related to making compost made from leaf waste. By using animated video media, it is hoped that it can attract more attention from children and families to jointly protect nature by managing leaf waste properly and correctly. One way is by making leaf waste into compost. By using animated video media, the information conveyed can also be packaged well, presented more interestingly and easily understood by the target audience. In designing animated video media entitled "Green Family" with the episode title "Green with Compost", it cannot be said to be a perfect animated video media design. Because in the animated video media in this design there are

still many things that are not perfect. From the start, the use of assets is still small, the character animate still looks stiff. In terms of information, there is still a lot of information that cannot be conveyed in the design of this animated video media. Apart from that, in terms of video quality, it is still not perfect. Therefore, it is hoped that the design of animated video media can be done better and more structured on other occasions. By focusing the information presented on managing leaf waste. With many designs like this, it is hoped that the information conveyed to the target audience will be more interesting and easier to understand. This becomes input in carrying out this design and other designs which will create information media designs through similar animated video media regarding the management of leaf waste into compost.

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