The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)
Taichung, Taiwan 3-6 March, 2022

2D ANIMATION VIDEO AS INFORMATION ABOUT HEALTHY LIFESTYLES USING MOTION GRAPHIC TECHNIQUES

Deli, Rino
Faculty of Information Systems, University International Batam
{delistan17@gmail.com, 1831101.rino@uib.edu}

ABSTRACT

Healthy lifestyle is something that everyone needs to pay attention to, because a healthy lifestyle is important to maintain a healthy body. But unfortunately, not everyone has implemented a healthy lifestyle. This is due to several reasons, such as lazy to eat healthy food because it is considered ineffective, and lack of knowledge about how to implement the right healthy lifestyle. Therefore, the author wants to design a 2D animation video about the importance of a healthy lifestyle, the animation video will be made as clear and attractive as possible, so that the video is interesting to watch and the message in the video can also be easily understood by the public. In designing this 2D animation video, the author uses several software such as, Adobe Illustrator 2019, Adobe After Effects 2020, and Adobe Premiere Pro 2020. The final result of this research is an information media in the form of 2D animation video that informs the importance of a healthy lifestyle, which was developed using the MDLC method and has a duration of 2 minutes and 10 seconds. This 2D animation video is distributed to the public through the Youtube platform, so that the animation video can be easily watched by the public. With this 2D animation video, it is hoped that it can provide information and also motivate the public to be able to implement a healthy lifestyle.
Keywords: 2D Animation, Motion graphics, MDLC, Healthy lifestyle.

INTRODUCTION

A healthy lifestyle is a lifestyle that pays attention to certain factors in order to maintain and improve body health, such as food and exercise (Nurfitri, 2019). A healthy lifestyle is a thing that everyone wants, but unfortunately, not everyone has implemented a healthy lifestyle. This is caused by several factors, such as lazy, busy, not having strong motivation and lack of knowledge of how to live a healthy lifestyle. Currently, the problem Health is one of the things that the Indonesian government pays attention to, this is due to the increasing unhealthy lifestyle of the community.

Based on research from AIA Healthy Living Index in 2018, healthy lifestyles carried out by the community Indonesia in 2016 was 4.0, and decreased in 2018 to 3.6 which is the lowest number among Asia Pacific countries that others (Mariyanti et al., 2020). This proves that there are still many people in Indonesia who have poor health. The main reason Indonesian people do not implement a healthy lifestyle is that too much effort is required to live a healthy lifestyle. There are those who stop implementing a healthy lifestyle, because eating healthy foods is considered ineffective. In other words, Indonesian people's knowledge is still very lacking about the importance of a healthy lifestyle. An international group of researchers led by a scientist from Harvard T.H. Chan School of Public Health in 2018, found that the existence of healthy lifestyle habits can extend life, where life expectancy can increase up to 14 years for women, and 12 years for men (Larrick & Mendelsohn, 2018). And there is also research from the Consortium on Health and Aging Network of Cohorts in Europe and the United States (CHANCES), that men and women aged 50 years who have implemented a healthy lifestyle can increase their life expectancy by 7.4 years for men, and 15.7 years for women (Li et al., 2020). This proves that a healthy lifestyle is important and can extend life. The Indonesian government is also trying to increase the number of people with a healthy lifestyle, such as by implementing a program called CERDIK behavior (Pambudi & Khusna, 2019). Animation is an image that is created using a certain technique so that the image will appear as if it is moving

(Christiawati & Darsana, 2020). Submission of information in the form of animation videos also has advantages. With moving images combined with sound, animation videos become more effective in conveying information, because they look more interesting and easy to understand (Utami et al., 2021). Based on the explanation above, the author designed a final project entitled "2D Animation Video As Information About Healthy Lifestyles Using Motion Graphic Techniques" it is hoped that the animation video can be an alternative solution to make people aware of how important it is to have a healthy lifestyle.

PROPOSED INNOVATION

This research entitled "2D Animation Video As Information About Healthy Lifestyles Using Motion Graphic Techniques" is based on some previous studies such as:

A study by Suryani et al., (2019), is an applied study that aims to raise public awareness about efforts to prevent and overcome Dengue Hemorrhagic Fever (DHF). The method used in this research is Multimedia Development Life Cycle (MDLC). In the research process, the authors carry out the animating process using Digital Animation software, with the concept of rigging, basic animation, masking, text animation, and CC rainfall effects. The product resulting from this research is a 2D animation-based video ad, which has a duration of 6 minutes 58 seconds. From the final result of designing a 2D animation video in this public service advertisement, the author can help make people aware, especially people in the city of Palembang, regarding efforts to prevent and overcome dengue fever. A study by Pertiwi & Syahrul, (2017), is an applied study that aims to introduce to the public the existence of the Palembang Grand Mosque, which has existed since the days of the struggle of the people of Palembang City. The data collection methods used in this study were observation, interviews and literature study, while the development method used in this research was the Multimedia Development Life Cycle (MDLC) method. The technique used in this research is the motion graphic technique, the author uses software such as Adobe Illustrator to draw the assets needed in making videos, and Adobe After Effects to create animations for the assets that have been drawn. The product of the research is a tourism promotion video for the Great Mosque of Palembang. The final result of designing this promotional video is, the author can share with the public about the history of the Great Mosque of Palembang. Another study conducted by Sari, (2019), which is a study that designed a 2D animation video using motion graphic techniques, with the aim of making it an educational media to make teenagers aware of the dangers of addictive substances. the author applies the stages of 2D animation design (pipeline animation), which starts from Pre-production, Production, and Postproduction. In this study, the authors used light gray (#ced1cc), dark gray (#565a5c), pink (#ff5a5f), and turquoise (#007a87) as the main colors in making the animation video. And for the fonts used in the making of the animation video, there are two, namely chunk five because it has a retro style and arial round because it has a soft impression. The product resulting from this research is a 2D animation video based on motion graphics. And the final result of designing this 2D animation video is that the author can provide information packaging to be more attractive to teenagers about the dangers of addictive substances.

A study by Aprianto & Saputro, (2019), is an applied study that aims to produce an educational media for deviant social behavior in adolescents, because adolescence is a transition from children to more mature behavior, and usually this is a period in which adolescence Teenagers begin to have their own desires, and no longer want to be controlled by their parents. The data collection method used in this research is observation, and literature study. Meanwhile, the development method used in this research is the Multimedia Development Life Cycle (MDLC) method. In designing the video in this study, the author will use multimedia software, namely Adobe After Effects to create motion graphics on the video, while in designing the characters displayed in each scene, they will be created using multimedia software, namely Adobe Photoshop CC. The product produced in this research is an animation video using motion

graphic technique which has a duration of 2 minutes and 20 seconds. The final result of the design of this animation video is that the author can help schools and parents in overcoming social behavior deviations in adolescents based on visual multimedia. A study conducted by (Ulum et al., 2021), is an applied study that aims to provide information, invite or educate the public to implement health protocols, as well as a healthy lifestyles that have been set by the government during the COVID-19 pandemic. In this study, the method used by the author is the Multimedia Development Life Cycle (MDLC) method. In designing the research, the authors used software in the form of CorelDraw X7, Adobe Flash CS6, Format Factory and Filmora9. Then the author distributed the video to youtube, then shared the video link to social media. The product of this study is a public service advertisement video. Based on these studies, the author will make a 2D animation video using the Multimedia Development Life Cycle (MDLC) design method as used by (Suryani et al., 2019). In the process of making 2D animation videos, the author will use software in the form of Adobe After Effects and Adobe Illustrator, as done by (Pertiwi & Syahrul, 2017). The design of this 2D animation video will use motion graphic techniques as used by (Sari, 2019), and the data collection method used is observation and literature study, as used by (Aprianto & Saputro, 2019). In this study, the author has the same goal as (Ulum et al., 2021), namely making animation videos to provide information and motivation to the public regarding health awareness. Therefore, the conclusions obtained are the main basis for starting the design and development of 2D animation video.

METHODS

Research Flow

In this study, the author used a research flow in designing 2D animation videos. The flow of this research serves to explain each stage carried out by the author. The stages of implementing the product design are described in Figure 1 below:

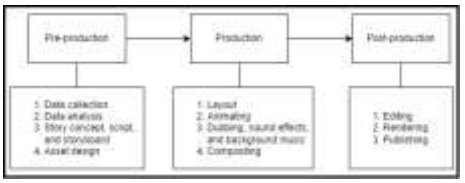

Figure 1. Research Flow
Source: (Thifala et al., 2021)

1. Pre-production

In the first stage, data was collected using the method of observation, and literature study. Then the data that has been collected is analyzed, according to the needs in the design of animation videos. After that, proceed with compiling the flow of the animation video that will be made. After making the storyboard, the next step is to make a script for the voice-over on the video, and the last thing is to make a list for the assets to be drawn.

2. Production

In the next stage, The author started with the drawing assets based on the planning that has been done previously, the assets are drawn using software such as Adobe
Illustrator 2019. After all the assets have been drawn, proceed to the animating stage, using software such as Adobe After Effects 2020. Then after the animating process is completed, the next step is to add voice-overs, sound effects, and background music into the animation video using Adobe Premiere Pro 2020 software.

3. Post-production

In the last stage, the editing stage will be carried out on several things, such as adding transitions, adjusting the volume for voiceovers, sound effects, and background music in the animation video. After the editing stage is completed, and the animation video has been revised and evaluated by the supervisor, it will be proceed to the next stage, namely rendering. After that, the animation video will be shared to the wider community using the Youtube platform.

Application Instrument Design

In carrying out this design process, the author used Adobe Illustrator 2019 software to draw the assets, Adobe After Effects 2020 software to create animations on videos, and Adobe Premiere Pro 2020 software to combine all assets and become an animation video.

The tool used to support the design of this a video is a computer with the following specifications: MSI Z370 Gaming Plus Motherboard, Intel® Core™ i5-8600K @ 3.60GHz Processor, 16GB RAM, 1TB HDD, 128GB SSD, VGA NVIDIA Geforce GTX 1070
Ti , and Windows 10 Pro 64-bit operating system.

Development Method

In this research, the development of the animation video design was carried out. The method used is Multimedia Development Life Cycle (MDLC). The development model in the design of animated videos can be seen in Figure 2:

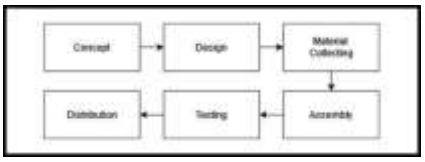

Figure 2. Process of Development Stages to Finalization

1. Concept

In this stage, the concept of the video is made, started from the introduction, content, to the conclusion of the 2D animation video. And the delivery of the material will be used voice-over accompanied by some text, so that the delivery of information to the audience can be more easily understood.

Script is used to assist in the voice-over process, and a list of the assets will be made to assist in the making the 2D animation video process, this is done so that the videomaking process can be more structured.

Figure 3. 2D Animation Video's Script

Figure 4. List of Assets Required in the Process of Creating 2D Animation Videos

2. Design

In this stage, it started with making storyboards for 2D animation video. The purpose is to provide an overview of the simulation of 2D animation video that are poured into the form of images, so that the process of making animation video can be done easier.

After that, the process of drawing the assets is carried out using the Adobe Illustrator 2019 software. The drawing started from the characters, properties, and backgrounds which will later be used in the animation process.

Figure 5. Process of Drawing the Assets

3. Material Collecting

In this stage, the collection of materials needed in the process of making animated videos is carried out. The author also collected materials such as photos to clarify the topics discussed, and some

audio assets used as background music and sound effects in 2D animation video. And then, the author recorded voice-over for the 2D animation video based on the script that has been made previously using Audacity software.

Figure 6. 2D Animation Video's Voice-over

4. Assembly

In this stage, after all the assets have been created and collected, the authors combined all assets into one completed 2D animation video. The first thing to do is the animation process, the animation process used the Adobe After Effects 2020 software. The author used Composition with a Frame Size of 1920x1080, Aspect Ratio 16:9, Frame Rate 60 frames per second, and the Text The font used in this 2D animation video is Calibri. with Regular Styles.

After the animation process is completed, it is continued by combining all the animations scenes. Then given transitions, sound effects, and background music so that the audience can enjoy the animation video more. The author also done noise reduction on the voice-over, so that the voice from the voice-over can be heard more clearly. The process of combining all assets used the Adobe Premiere Pro 2020 software. The author used a sequence with a Frame Size of 1920x1080, Aspect Ratio of 16:9, Timebase of 60 frames/second, and a Sample Rate of 48,000 Hz.

Figure 7. Process of Editing the 2D Animation Video

5. Testing

In this stage, before the animation video is distributed to the public, a review of the 2D animation video is carried out by the supervisor, this stage has the aim of being able to get suggestions for the animation video that has been made, so it can improve the final result of the 2D animation video.

6. Distribution

In the last stage of the Multimedia Development Life Cycle (MDLC) development method, namely distribution. The author carried out the exporting process of the final 2D animation video, which has passed the previous testing stage. The output of this stage is a 2D animated video as an information about a healthy lifestyle. Then the 2D animation video will be uploaded to the Youtube platform for distribution.

Figure 8. 2D Animation Video Uploaded

RESULT AND DISCUSSION

The final result of this study is a 2D animation video used as a medium of information about healthy lifestyles, with a duration of 2 minutes 10 seconds. The following is the result of the 2D animation video:

1. First Scene In the first scene, the words "Healthy Lifestyle" are displayed, the text will be clarified by using a red highlight effect. and there are several people behind the text, which will appear one by one from the bottom, which describes that many people wants a healthy lifestyle.

Figure 9. Opening of the 2D Animation Video

2. Second Scene

In the second scene shows several factors that cause people do not want to implement a healthy lifestyle. Starting from lazy, busy, unmotivated, and lack of knowledge. In this scene, white borders are given to each illustration, using the trim paths effect.

Figure 10. Factors that Cause People Do Not
Implement a Healthy Lifestyle

3. Third Scene

In the third scene, it shows the results of research which states that the number of healthy lifestyles of Indonesian people is decreased in 2018. Several additional characters will appear using a pop-up effect in this scene. And the numbers in this scene will be given an animation made with a combination of keyframes and masking.

Figure 11. Indonesian people's lifestyle numbers

4. Forth Scene

In the fourth scene, shows the results of research on the benefits of a healthy lifestyle carried out by a group of scientists, that applying a healthy lifestyle can prolong life.

And a text appears using a red highlight effect.

Figure 12. Research on the Benefits of a Healthy Lifestyle

5. Fifth Scene

The fifth scene shows the Indonesian Ministry of Health trying to increase the number of people with a healthy lifestyle, by creating a program called CERDIK Behavior. In this scene, the Indonesian flag is animated using the wave warp effect so the flag looks more natural, then the words "CERDIK behavior" appear which are also given a red highlight effect.

Figure 13. CERDIK Behavior

6. Sixth Scene

In this sixth scene, it describes the activities included in issued by the Indonesian Ministry of Health. This scene used the same effect as in the second scene, this scene is given a white border using the trim paths effects, then each illustration will appear from below

Figure 14. CERDIK Behavior Activities

7. Seventh Scene

In the seventh scene, it shows a character closing the video, and then continues with the appearance of the words “Thank you” in black and white background, which appears using a slide-up transition. And at the end of the video, there will be a Dip to Black transition as a sign that the video has ended.

Figure 15. Closing of the 2D Animation Video

Developmental Testing

In the testing stage, the author tests the results of the 2D animation video that have been previously made, by providing the final results of the video to the supervisor to check whether the video needs to be revised or is following the standards desired by the supervisor.

No.		Tests Performed	Test result
1		Video Compatibility with Storyboard	Pass
2		Submission of Information on Video	Pass
3		Image Quality in Video	Pass
4		Audio Quality in Video	Pass

Table 1. Developmental Test Results on 2D Animation Videos

LIMITATIONS

In designing this 2D animation video, the author also has limitations, such as, a computer that is not good enough to carry out heavy animating processes, and will improve the process of making animation videos using more professional tools.

FUTURE WORK

Based on the results of this study, there are several things that need to be developed in this 2D animation video to make it even better, such as:

1. This 2D animation video can be made in different types, such as 3D animation videos so the animation videos are more varied.
2. The distribution of animation videos in the future can be shared on other platforms, such as Facebook and Instagram.
3. With the distribution of this 2D animation video, it is hoped that it can be an information media that is easy to understand, interesting to watch, and helps people to realize how important it is to have a healthy lifestyle.

REFERENCES

Aprianto, H., & Saputro, A. (2019). Motion Graphic “Akhlak” sebagai Media

Edukasi Penyimpangan Perilaku Sosial pada Remaja. *Jurnal Bahasa Rupa*, *3*(1), 60–67.

Christiawati, N. M. D., & Darsana, I. W. (2020). Pengaruh Model Situation-Based Learning Berbantuan Media Animasi terhadap Kompetensi Pengetahuan Matematika Kelas IV. *International Journal of Elementary Education*, *4*(1), 112–121.

Larrick, J. W., & Mendelsohn, A. R. (2018). Finally, a Regimen to Extend Human Life Expectancy. *Rejuvenation Research*, *21*(3), 278–282.

Li, Y., Schoufour, J., Wang, D. D., Dhana, K., Pan, A., Liu, X., Song, M., Liu, G., Shin, H. J., Sun, Q., Al-Shaar, L., Wang, M., Rimm, E. B., Hertzmark, E., Stampfer, M. J., Willett, W. C., Franco, O. H., & Hu, F. B. (2020). Healthy Lifestyle and Life Expectancy Free of Cancer, Cardiovascular Disease, and Type 2 Diabetes: Prospective Cohort Study. *The BMJ*, *368*, 1–10.

Sari, I. P. (2019). Perancangan Video Edukasi Animasi 2 Dimensi Berbasis Motion Graphic Mengenai Bahaya Zat Adiktif untuk Remaja. *Edsence: Jurnal Pendidikan Multimedia*, *1*(1), 43–52.

Suryani, R., Saputra, H., & Sutrisman, A. (2019). Implementasi Animasi 2D pada Iklan Layanan Masyarakat sebagai Sosialisasi Penyakit DBD. *Rekam*, *15*(2), 153–166.

Thifala, A. Z., Wardhana, M. I., & Sutrisno, A. (2021). Perancangan Animasi 2D Mengenai Upaya Pencegahan Penyakit Saat Musim Hujan. *JoLLA: Journal of Language, Literature, and Arts*, *1*(7), 995–1009.

Ulum, S., Supriyati, E., & Listyorini, T. (2021). Iklan Layanan Masyarakat Bertahan Menghadapi Pandemi Covid-19. *Jurnal Dialektika Informatika (Detika)*, *1*(2), 32– 37.

Mariyanti, S., Rangganis, S. T., & Luthfi, A. (2020). *Contribution of Social Support to Health Belief in Patients with Chronic Renal Failure*. 97–102.

Nurfitri, T. (2019). Fungsi Orang Tua: Pembiasaan Pola Hidup Sehat Sebagai Upaya Meningkatkan Tumbuh Kembang Anak. *Jurnal Tunas Siliwangi*, *5*(2), 84–92.

Pambudi, R. S., & Khusna, K. (2019). Tingkat Pengetahuan Program CERDIK dan Informasi Obat pada Pasien Hipertensi Di Puskesmas Purwosari dan Puskesmas Purwodiningratan Surakarta. *Jurnal Akrab Juara*, *2*(2), 67–74. http://akrabjuara.com/index.php/akrabjuara/ article/view/870

Pertiwi, D. H., & Syahrul, Y. (2017). Motion Graphic Masjid Agung Palembang Sebagai Media Promosi Pariwisata Kota Palembang. *Computer Science Research and Its Development Journal*, *9*(3), 167–179.

Utami, F. R., Yasmin, A., Srihartantri, F., Ramadhania, F., Safitri, F. M., Amalia, F., Ambarwati, I., Nikmah, I. Z., & Iswari, Y. (2021). Pengaruh Video Penyuluhan Kesehatan Tentang Obesitas Bagi Anak Usia Sekolah Dasar. *Buletin Kesehatan: Publikasi Ilmiah Bidang Kesehatan*, *5*(1), 12–23.