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DESIGN INTERACTIVE VIDEO ABOUT LONELINESS USING EXPLORATORY TUTORIAL METHOD

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ABSTRACT

Modern societies are prone to loneliness moreover in this pandemic situation. People are told to keep safe distance and spend more time at home. This create a situation that more and more young adults are getting lonely, which in turn leads to depression and other psychological disorders. This research aims to utilize interactive movie and website to help those who feel lonely. By utilizing ADDIE Methods, visual studio code and adobe premiere to develop the website and video, we manage to develop and host a website and interactive video that aims to assist lonely people. The following papers is describing our design and development process. Further research needs to be undertaken to understand its effects.

Keywords: *website, interactive video, loneliness*

INTRODUCTION

Everyone could have an unpleasant feeling when there is no social interaction or being isolated. That feeling is called loneliness. Loneliness can be caused by the lack of sufficient social interaction or relationship in general. For example, when someone moving to a new environment but still can't adapting, the death of the closest person, being ostracized by society. Loneliness can cause students to lose interest in mastering learning skills, and tend to adopt a negative view of environment (Ningrumsari & Sawitri, 2018). Loneliness can also be caused by avoid direct social relationship, so it can also cause anxiety on adolescents (Kara et al., 2021) Depressive symptom and social isolation also could affect the loneliness. Poor social interaction was associated with both male and female with increased depressive symptom. Although woman believed to prefer greater interpersonal connectedness and more sensitive to the interpersonal relationship context than man (Liu et al., 2020). During the COVID-19

pandemic, the government imposed a lockdown that required everyone to stay at home to help prevent the spread of the COVID-19 virus. This has led to increased rates of loneliness and depression in extravert youth in Germany (Alt et al., 2021). But it does not rule out of the possibility of increased loneliness on children, and adults too. Insights about loneliness need to be taught to help others who are dealt with loneliness. There are many media that can be used to provide information. The information provided can be in the form of text, sound, or video. Current technological developments make it possible to create interactive videos. Interactive video is a media that combines elements of images, text, sound or graphics which is user can interact to (Wardani & Syofyan, 2018). Interactive media in form of video can attract more attention of nowadays people, so that information delivery can be easily absorbed by users. Interactive media is multimedia that contains elements that can be operated or interact by user, so that user could choose the provided options. The interesting media interactive media can help user to understand an information. The learning process is more effective because of user using

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multiple senses to absorb information (Wirasasmita & Putra, 2017). Process on this interactive video using multi plot video, that is video that can lead to different ending by choices of user input. Design of this interactive video is using exploratory tutorial method. Exploratory tutorial method is the method by which user can access the provided information in video, which is help user in decision of provided options. Figure one shows how exploratory tutorial works in this interactive video.

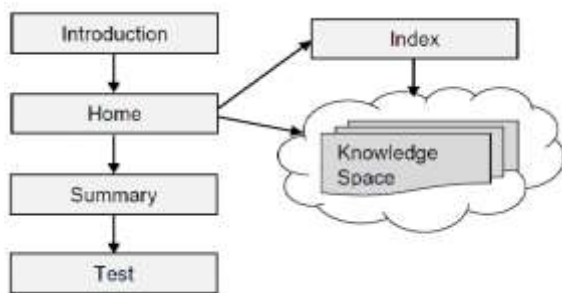


Figure 1. Exploratory Tutorial

Source: (Delianti, 2018)

One of the reasons why we use the interactive video because interactive media can enhance the local stimulus response goal of associative learning. The interactivity could be the better choice in situation where involving real or simulated social interaction takes place, though the interactive video not always be a better media to use as the learning process, but its depend on what learning situation and the educational goals of the program provider (Anderson & Davidson, 2019). Learning process also benefited by interactive media on elementary school students, caused by interactive media whose function is to help students to stimulate feelings, attention and interest on learning process (Suri & Rachmadtullah, 2021). There is so many media interactive form as well as video games, virtual reality and websites that can engage people on social interaction. Research from (Wibowo & Vicky, 2021) concludes youth prefer playing video games because of the social connectivity they found on video games. The social

interaction they perform could help youth on coping with loneliness, especially with the friends they had known of.

The interactive video utilize web as the medium, built with Hyper Text Markup Language (HTML), Cascading Style Sheet (CSS), and JavaScript (JS). The text content that show is organized under header and paragraph with HTML markup which is made of statements that define how the contents displayed and the links used to connect to other web pages as the references. While making the website, we also need to concern about responsiveness, which mean how the website will display based on what devices user on. Because if our website is only fixed for desktop user, the mobile devices user can't access the main content and website functionality properly so it can also affect the convenience of website visitors (Rehan Anwar et al., 2021). The aim of this research is to share information about the causes of loneliness, and how to cope with loneliness, using web-based interactive video as the media.

LITERATURE REVIEW

This study is influenced by several previous studies on loneliness and interactive multimedia. One of them was study done by (Suseno et al., 2020) is the study that using descriptive approach oriented to product development by referring to the Four-D Model, which consists of Define, Design, Develop and Disseminate. The purpose of this mathematics learning research is for students to able to explain the meaning, properties, and solve problems related to kite shapes using interactive multimedia-based videos. This study involved 29 students at Gorontalo Junior High School as subjects. The results of the study showed that more than 70% of students gave a positive response to the interactive video media learning. Another study by (Delianti, 2018) that inspires the research is aim to design and implement interactive media with the exploratory tutorial method for information and technology communication subjects. The students not only can read, saw, and listen to

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the theory, but also can interact with the provided media. Students can explore the provided theory before doing the test inside the interactive media. The result of interactive media helps learning process independently with computer. Research by (Santoso et al., 2020) is about interactive media development using web. The purpose of this study is to assist teachers in increasing student's learning motivation on the material composition function and inverse function of senior high school. This research is using notepad++ and WordPress software to arrange learning material. Students will fill in their personal data before doing interactive quizzes as a reflection of the learning material they have learned. The results of tests conducted on students were divided based on individuals and small groups, where the results of individual trials got an average value of 3.3 and an average value of 3.5 which means that this web-based interactive multimedia is valid and can be used. Research by (Nugroho & Surjono, 2019) about development of video-based interactive learning multimedia with the theory of patriotism and environmental care. This research has assessment of the video display, choice of the background music, clarity of text, ease of selecting the displayed menu, and ease of use. This resource proves that interactive media can be developed effectively to increase patriotism and environmental care. Research by (Komala et al., 2020) on objective condition of adolescent mental health during COVID-19 pandemic. This study aims to find out how to detect adolescent mental health early during the pandemic and overcome adolescent mental health problems during the COVID-19 pandemic. The type of research used in this research is descriptive research with a descriptive survey study approach that uses electronic distribution of questionnaires for data collection. The results showed that 40,8% of adolescent mental health conditions of students at Raangkasbitung senior high school is normal. In summary, we intend to design interactive web-based video about loneliness based on (Komala et al., 2020) research with exploratory tutorial method from (Delianti,

2018). We use the video format as the interactive based on (Nugroho & Surjono, 2019) study and the interactive video will displayed on the web like the (Santoso et al., 2020) study. Thus, these studies serve as main basis for designing interactive web-based video on the topic of loneliness.

PROPOSED INNOVATION

The proposed innovation of this research is to give information and education with interactive video as the media. The interactive video will display on website that can easily to access by users with desktop and mobile, thanks with the technology development, most of us can access the website easily now. We hope the information we share on this research could help people to cope with loneliness in this current pandemic era, where some people must isolate themselves for the health concern of others and their own.

RESEARCH METHODOLOGY

Research flow that we use is ADDIE model (Analysis, Design, Development, Implementation, Evaluation). This flow is formed to explain product development from beginning to end of interactive video design. The stages in the design flow are shown in Fig. 2.

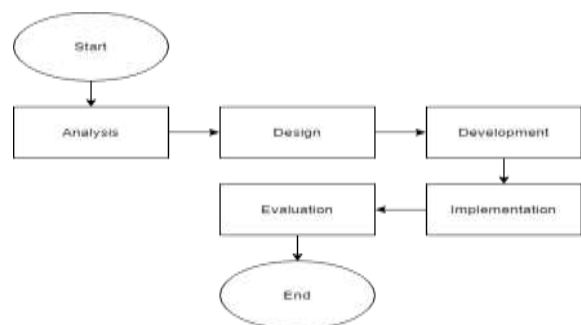


Figure 2. Research Flow
source: (Suseno et al., 2020)

Analysis

The initial stage in making this interactive video will be to create an interactive video script that contains a sequence of scenes, time, place, and

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dialogue. The manuscript will be used as reference when shooting the video. After that we will use the storyboard as a rough idea of how the video will be recorded. Storyboard will make it easier for us to determine video capture, what supporting properties are needed in video design, background music, and sound effects needed in the video.

Design

We create the interactive video content's structure based on script, storyboard, and decision tree development on interactive video plot.

Development

The next step we will start to record the footages based on the script and storyboard we created using Canon EOS M50 camera. After we take the sufficient footages, we will edit and filter out some of the footages to be used on interactive video based on the storyboard using Adobe Premiere Pro CC. After that we use Visual Studio Code software and Bootstrap framework to build the website, test with Google Chrome as the browser.

Implementation

In this step we must make sure the footages taken must running well on the webpage. All component as texts, videos, images and audio must running well.

Evaluation

The results of the interactive video design will be evaluated by the user sample. If a problem is found, it will be revised and goes back to development stage until the interactive video didn't need any revision.

RESULT AND DISCUSSIONS

The result of this project is web-based video interactive, the website developed using Bootstrap framework and code with Visual Studio Code software. The website has responsive feature, which means can display properly on both desktop and mobile devices.

The interactive video is edited and exported using Adobe Premier Pro CC. The design of this interactive video started with decision tree. The decision tree contains choices for user to pick in video. The choices will vary from 2 to 3 choices. These choices will lead user to bad ending or good ending. The decision tree information reference is from our experiences, interview with our friends, website, and forum discussion regarding topic of loneliness. The interactive video idea will start with fictional character called the protagonist. Protagonist will have a loneliness background, such as isolated from home, introvert and have a lack of friend. After gather the basic idea of the interactive video and compile the decision tree, we create the script and storyboard. The script will guide us to design storyboard. The interactive will use less dialog, mainly just a voiceover from the protagonist, so we focus on storyboard a little bit more. The storyboard visually guides us how to take a shot or scene, it also guides the camera movement needed in a shot or scene.

After design decision tree, script, and storyboard, we also make a shot list that will help us in shooting process and editing the video later. The shoot list contains the shot we need to take based on the script. The shoot list will improve the efficiency of recording process because we don't necessarily have to shoot videos sequentially according to script. The story inside the interactive video has flashback scene, so we need the shoot list to arrange the shot we take, and make sure all the shot is structured well. We choose the time between 1 pm to 5 pm to shoot film because the natural light from sun has the best performance that time, unless it's raining, then we need to reschedule the shot, that's when the shot list come in handy. We can keep the track what shot or scene we already take or not. We also check the equipment we needed to shoot the film, like Canon EOS M50 camera, external mic, key lighting equipment, and spare battery for camera. After planning and design all the material we needed before shot film such as script, storyboard and shoot list, we execute the plan and shot the film according to the shot list

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we already make. After we shot the film, we edit and filtered out of some footages we take. The editing process start with cut or crop the footages and arrange the footages according to the script. Next step we applied the color correction on footages to fix the overexposure and underexposure footages. After that we apply the color grading to video to match with the scene mood, blue tone for the sad scenes and orange tone for the happy scene. After done color grading for each scene, we add after credit and export the video. After export the video, we start designs the website to display the interactive video. The website will have the function to make the video interactive using JavaScript. The website will contain information about the project and useful information regarding loneliness in causes and remedies section on the website. Website barebone starts with Bootstrap boilerplate that provided by Bootstrap framework itself, we put the content about loneliness causes and remedies as show at Fig. 3 and website header at Fig. 4 and a link redirect to interactive video page. The website also reacts responsively on mobile devices.



Figure 3. Website Desktop View
source: primary

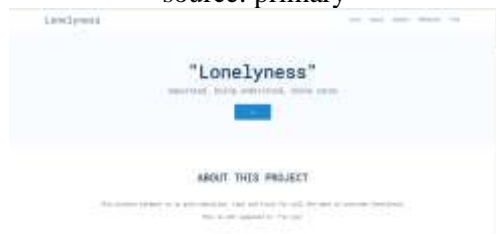


Figure 4. Website Desktop View
source: primary

One of the main purposes of this study is to remind public about how serious loneliness is and its affect if left alone. The reasons are if we let loneliness for too long it will manifest to

depression. That affect caused by depression could also lead to unhealthy habits. Due to COVID-19 pandemic, most of us could feel lonely. It's because of government orders to stay at home. The lockdown will inevitably lead to loneliness. Especially for extraverts people, who really needs more social interaction than introverted people. Even though we have devices like smartphone and laptop, doesn't mean we cannot experience loneliness. Some people prefer face to face communication, some of them okay with using chat messenger, phone call and video call. But what if unfortunate people who don't have proper communication devices? This only make the situation worse if they don't know the alternatives activity too battle with loneliness.

Lockdown orders by government forced all people to stay at home and not going out if there is not important. If they have family, they can still have social interaction with their household such as family, or roommates. But how about some people who live alone? This can lead to loneliness, and loneliness is the awful feeling that we can't eliminated, only can be distracted with some activities, as searching for new hobbies that can be done while inside house, social interaction using social media, and doing offline activity like house chores, reading books, listening to music, playing music instrument, and exercise. Thankfully, we can still use the internet to doing social interaction for example like participate on online forums, video call with friends or family, and playing online games. The website we created using HTML, CSS, JavaScript, and Bootstrap as the framework can be access on desktop and mobile devices, so that may raise the awareness of loneliness to the public. The website has examples of loneliness causes, also we add the tips to cope with loneliness. Although some people may have different coping mechanism to overcome loneliness, but we believe the tips we listed on website could have public understand how to fight the loneliness, rather than letting the loneliness. After that, user can watch interactive video that linked on the bottom of the web, with better visually storytelling, hopefully users can

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understand the meaning of the interactive video. The cases examples used on interactive video is using everyday life cases, so that users could feel familiar with the situation if they faced it later. The tips that we showed on interactive video may helps users to cope with loneliness. Although we can't guarantee the tips displayed can eliminate the feeling of loneliness, but we believed it could help to temporarily distracts them from loneliness with positive activities. Some of tips displayed are from our own experiences. In addition, we use some of references we found from websites and journals.

FUTURE WORK

After conducting this research, we realize there are some things that can still be improved, such as add more cases examples from wider range, as we know the loneliness could be felt by children to grandparents. We hope we can add more cases examples specifically to those age stages. Augmented reality or virtual reality can be used to get more experience in specific situation. We also hope this research could help scholar to conduct the topic about loneliness.

LIMITATION

The process of this research did not go smoothly as we expected, we are dealing with pandemic that limits our mobility to goes anywhere easily, bad weather when shot the outside scene of film, so as we need to reschedule some scene because of it, limitation on laptop specification to edit videos smoothly without lagging, limited shooting equipment, hard to recruit cast for the actor and actress in video, due to COVID-19 we can't use many location for safety reason, and lack of funding, so that we use budget and equipment we have to perform this research.

CONCLUSION

The designed web-based interactive video is displayed properly on both desktop and mobile devices. Users can easily access website without worrying about website readability if switches from desktop to mobile devices. Through this study, it is suggested in the future

to have more interactive video sample about loneliness with the different cases, so that it can help people to overcome loneliness with same cases.

REFERENCES

- Alt, P., Reim, J., & Walper, S. (2021). Fall From Grace: Increased Loneliness and Depressiveness Among Extraverted Youth During the German COVID-19 Lockdown. *Journal of Research on Adolescence*, 31(3), 678–691.
- Anderson, D. R., & Davidson, M. C. (2019). Receptive Versus Interactive Video Screens: A Role For The Brain's Default Mode Network In Learning From Media. *Computers in Human Behavior*, 99(April), 168–180.
- Delianti, V. I. (2018). Perancangan dan Implementasi Multimedia Interaktif Dengan Metode Exploratory Tutorial Mata Pelajaran Teknologi Informasi dan Komunikasi. *Jurnal Teknologi Informasi & Pendidikan*, 11(1), 12.
- Kara, M., Baytemir, K., & Inceman-Kara, F. (2021). Duration of Daily Smartphone Usage As An Antecedent Of Nomophobia: Exploring Multiple Mediation Of Loneliness And Anxiety. *Behaviour and Information Technology*, 40(1), 85–98.
- Komala, I. R., Choirunissa, R., & Syamsiah, S. (2020). Analisis Deteksi Dini Kesehatan Jiwa Remaja Di Masa Pandemi Covid-19 Pada Remaja SMAN 2 Rangkasbitung Kabupaten Lebak Tahun 2020. *Asian Research Midwifery and Basic Science*, 1(1), 60–72.
- Liu, H., Zhang, M., Yang, Q., & Yu, B. (2020). Gender Differences In The Influence Of Social Isolation And Loneliness On Depressive Symptoms In College Students: A Longitudinal Study. *Social Psychiatry and Psychiatric Epidemiology*, 55(2), 251–257.
- Ningrumsari, P. ., & Sawitri, D. . (2018). Hubungan Antara Regulasi Diri Dengan Kespian Pada Mahasiswa Tahun Pertama

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- Di Fakultas Kesehatan Masyarakat Dan Fakultas Ilmu Sosial Dan Ilmu Politik Universitas Diponegoro Semarang. *Empati*, 6(4), 37–43.
- Nugroho, I. A., & Surjono, H. D. (2019). Pengembangan Multimedia Pembelajaran Interaktif Berbasis Video Materi Sikap Cinta Tanah Air dan Peduli Lingkungan. *Jurnal Inovasi Teknologi Pendidikan*, 6(1), 29–41.
- Rehan Anwar, M., Hardini, M., & Anggraeni, M. (2021). Review of Responsive Design Concept Based On Framework Materialize On The Website. *ADI Journal on Recent Innovation (AJRI)*, 3(1), 59–66.
- Santoso, A., Sunismi, & Alifiani. (2020). Pengembangan Multimedia Interaktif Berbasis Web Pada Materi Fungsi Komposisi dan Fungsi Invers Siswa SMA Kelas XI. *JP3*, 15(19), 58–66.
- Suri, D., & Rachmadtullah, R. (2021). The Effectiveness Of The Use Of Interactive Multimedia On The Initial Mathematics Abilities Of Low Grade Students In Elementary Schools. *Journal of Physics: Conference Series*, 1987(1).
- Suseno, P. U., Ismail, Y., & Ismail, S. (2020). Pengembangan Media Pembelajaran Matematika Video Interaktif berbasis Multimedia. *Jambura Journal of Mathematics Education*, 1(2), 59–74.
- Wardani, R. K., & Syofyan, H. (2018). Pengembangan Video Interaktif pada Pembelajaran IPA Tematik Integratif Materi Peredaran Darah Manusia. *Jurnal Ilmiah Sekolah Dasar*, 2(4), 371.
- Wibowo, T., & Vicky. (2021). Survey Research of the Reasons of People Playing Games Using the Qualitative Methods. ... *Business, Innovation, Education and Social Sciences*, 1(1), 776–783. <https://journal.uib.ac.id/index.php/combin es/article/view/4503>
- Wirasasmita, R. H., & Putra, Y. P. (2017). Pengembangan Media Pembelajaran Video Tutorial Interaktif Menggunakan Aplikasi Camtasia Studio Dan Macromedia Flash. *E-ISSN 2549-7472*, 1(2), 1–12.