

## **GAME DEVELOPMENT "ATTACK OF KRONA" AS A MEDIA CAMPAIGN FOR THE ADAPTATION OF NEW HABITS**

**I Nyoman Jayanegara<sup>1)</sup>, I Gede Adi Sudi Anggara<sup>2)\*</sup>, I Wayan Adi Putra Yasa<sup>3)</sup>,  
I Dewa Gede Agung Pandawana<sup>4)</sup>, I Ketut Setiawan<sup>5)</sup>**

*1,2,3,5) Institut Bisnis dan Teknologi Indonesia (INSTIKI)*

*<sup>1)</sup> jayanegara@instiki.ac.id*

*\*Corresponding author: <sup>2)</sup> adi.sudianggara@instiki.ac.id*

*<sup>3)</sup> adipyasa@instiki.ac.id*

*<sup>5)</sup> wen@instiki.ac.id*

*<sup>4)</sup> Universitas Mahasaraswati*

*<sup>4)</sup> pandawana@unmas.ac.id*

### **ABSTRACT**

*The pandemic due to infection with the new Coronavirus (COVID-19) has swept the world over the past year. Reporting about this in various media causes anxiety or panic in the community which in turn can cause psychosomatic symptoms. This symptom can be overcome with a diversion technique that is doing everything you like. Other than that, the application of health protocols must be carried out to suppress the spread of COVID-19 cases. Education regarding the health protocols needs to be carried out continuously by utilizing new media that can also overcome psychosomatic symptoms. Game is one form of new media. Game Attack of The Krona is a creative education about health protocols designed with the design thinking method. This game is a platformer concept consisting of 4 levels Education about health protocols will be part of the game so that education can be done easily, interestingly, and fun. This game has passed black box testing regarding the functionality of the application and the sharpness of the image display on various smartphone devices. By playing this game, information can be carried out, so that behavior changes with the implementation of health protocols can become a habit in preventing various diseases in the future.*

**Keywords:** Games, Coronavirus, Health Protocols, Creative Education

### **1. INTRODUCTION**

The world has been hit by a pandemic caused by COVID-19 for the past three years. The disease is caused by a novel coronavirus that was first discovered in Wuhan, China. Currently, covid-19 coronavirus infections worldwide have reached 544,324,069 cases with 6,332,963 of them dying (WHO, 2022). While in Indonesia until now positive confirmed cases have become 6,088,460 and the number of deaths has increased to 156.737 cases (Covid-19, 2022). News about the increase in positive cases and deaths due to the Coronavirus in various media can cause anxiety and panic in the community which can cause psychosomatic symptoms. Psychosomatic symptoms can be physical complaints that can be transmitted through personal emotions or through the surrounding environment. This is usually an expression of anxiety or fear through the reporting of various media (Fitriani & Rois, 2014).

Data from the Department of Internal Medicine FKUI states that in Jakarta, psychosomatic patients reach 50% of the number of patients and 15 to 20 percent die from these symptoms (Rosmalina, 2015). Psychosomatic symptoms can reduce the body's immunity and will eventually make it easier for the Coronavirus to attack. These various psychosomatic symptoms need to be prevented so as not

to increase positive cases of COVID-19 in Indonesia. Compliance with health protocols is one of the steps in suppressing the spread of COVID-19 during the pandemic. This was revealed by *kompas.com* (2022) which stated that five provinces in Indonesia experienced an increasing trend of active cases of Covid-19 during March 2022 and at the same time, public compliance with health protocols in the 5 provinces has decreased. The spread of COVID-19 in Indonesia can be suppressed by community discipline in carrying out health protocols, including the use of masks, frequent hand washing with soap or hand sanitizers, and maintaining a safe distance from others. Information regarding the implementation of health protocols needs to be disseminated to the community continuously so that it can become a new habit in society when it will coexist with the Coronavirus.

Games are one new media that can be used as education about health protocols to the public. Games are one of the human play activities that are not only related to the development of children but are permanent at all levels of human life (Rahmat, 2014). Not only for fun, but games are also able to be educational media because the game has aspects of the interaction between users and the game itself. Games are simulations, visualizations, or even virtual representations of real problems (Hashim, 2018), (Hidayat, 2018), (Vitrianiingsih, 2016). In addition, games can be used as educational media as a form of implementation of sustainable development (Yasa, et al, 2020), so it is very possible to develop games as an educational medium regarding health protocols for the public.

This research will design games as an educational medium regarding health protocols which include the use of masks, frequent hand washing with soap or hand sanitizers, as well as the implementation of social distancing from others. In addition, this research is expected to be able to provide education to the public in an interesting and fun way, so that the dissemination of information can be carried out as early as possible so that the implementation of health protocols can become a new habit in the prevention of various diseases in the future.

## 2. RESEARCH METODOLOGY

The design thinking method will be used in designing the Attack of The Krona game. This method is a thought process for solving human-centered problems or it can be interpreted that humans are centered as the core of problem-solving (Razi, 2018) (Syahrul, 2019). In design thinking, the process can be divided into empathize, define, ideate, prototype, and test as shown in the image below.

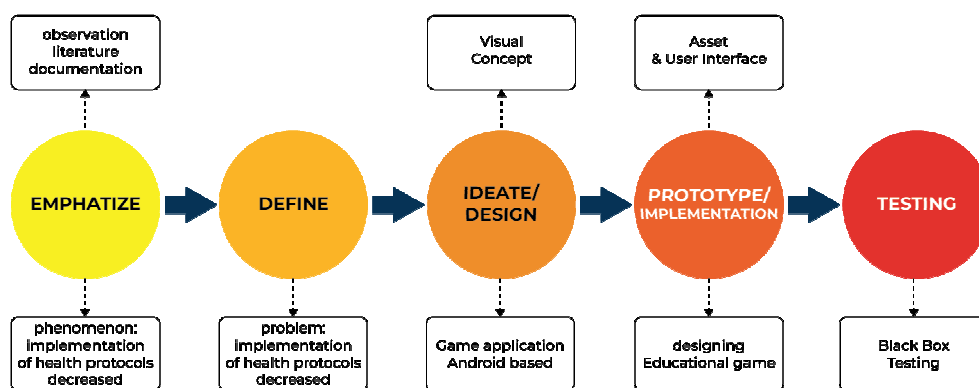


Figure 1. Design Method Chart  
 Source: Writer, 2022

The design of this study will begin by Emphasize with the phenomenon that occurred during the pandemic, namely the decrease in compliance with the implementation of health protocols. The initial data is corroborated through library data collection, observation, and documentation. Furthermore, in the define

section, an analysis was carried out to be able to formulate a problem, namely the increase in positive confirmed cases of COVID-19 in Indonesia accompanied by a decrease in compliance in implementing health protocols as an adaptation to new habits. In the ideate process, a creative solution to the problem was formulated, namely the design of digital media in the form of games with the Android operating system accompanied by the formulation of visual concepts. The implementation or prototype process has done the design by paying attention to the ideate process. In the last part, testing will be carried out with the black box technique to find out the shortcomings of the designed application before it is disseminated to the audience.

### **3. RELATED RESEARCH**

Hidayat (2018) in his article entitled Game-Based Learning: Academic Games as a Supporting Method for Entrepreneurial Learning, states that games are one of the most effective learning methods. In addition, Hidayat cites the opinion of Schrader and McCreery (2012) which states that games have advantages over other learning methods, namely; aspects of interactivity, providing direct feedback, virtual representation of reality, or virtual representation, and repetition of settings and events in a lesson. This article provides an overview of the effectiveness of games as a learning method and provides an explanation of the game structure so that it is very relevant to research.

Vitianingsih in an article entitled Educational Games as Learning Media for Early Childhood Education describes the Waterfall Life Cycle Paradigm as a method of designing educational games. This paradigm determines the steps for making the right game in accordance with the rules of software engineering to get a game that suits your needs. This article provides a reference for researchers in the design method of an educational game, so it is very relevant to research.

Suryadi in an article entitled Designing Educational Game Applications Using the Waterfall Model describes excerpts of research on the positive impact of games conducted by several researchers from the University of Rochester, New York, United States, stating that if the learning process is assisted by gameplay, it stimulates learning something new and exciting. can provide a pleasant experience for students because of the interaction between players, besides that, it can provide the basis for the achievement of various skills to solve problems. This article is useful in providing researchers with an overview of the benefits of games as an educational medium to the process of designing the game itself.

### **4. RESULTS AND DISCUSSION**

This game is a platformer type of game, a game that relies on characters who will jump or avoid obstacles and have a final goal. This game is intended to provide education about preventing COVID-19 in an interesting and fun way. Messages regarding disease prevention will be delivered to the user directly as part of the game. In this game, the gameplay will be running, avoiding obstacles, hitting, throwing, or defeating enemies namely 'Krona', the strongest enemy character in this game. Masks, soap, hand sanitizer, and disinfectants will be used as weapons for the main character against enemies.

Visual assets can be seen in all visual forms used in the design of this game. This visual asset has undergone a process of visual study and brainstorming to produce illustrations that match the game concept. The visualization of the main character takes the form of a human, while the enemy character in this game is a representation of the coronavirus. Visualization of the main characters and enemies can be seen in the image below.

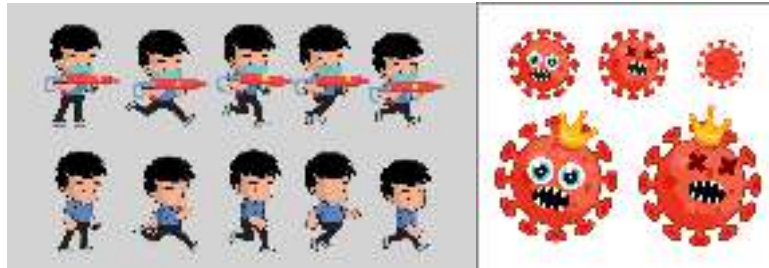


Figure 2. Main Character and Enemy Asset  
Source: Writer, 2022

Some of the supporting assets of this game consist of equipment weapon assets (pistol, soap, and hand sanitizer), and item assets consist of fruit and coins as life support for the characters in the game. The game assets can be seen below.



Figure 3. Equipment, Weapon and Item Asset  
Source: Writer, 2022

The gameplay of the game is currently only completed up to stage 4 level 1 with consideration that level 2 and so on are still in the development stage. The gameplay on stage 1 which is the beginning of the game will start in the rural world which is the origin of the characters in the game. In stage 2, gameplay continues by taking on the urban world in daylight.



Figure 4. Gameplay Preview of First and Second Stage  
Source: Writer, 2022

In stage 3, the gameplay still takes on the urban world but this time with a nighttime atmosphere like the picture below.



Figure 5. Gameplay Preview of Third Stage  
Source: Writer, 2022

Stage 4, is the last stage at level 1. In the gameplay of this stage, the character will fight the king of Krona by taking the atmosphere of the grave so that it has a tense impression. Stage 4 can be seen in the image below.



Figure 6. Gameplay Preview of Fourth Stage  
Source: Writer, 2022

Information in the form of compliance with health protocols will be displayed at the beginning of each start stage, and presented in 2D animation format. An animation of a health protocol using a mask will be displayed when entering stage 1 which will be directly applied in the gameplay where the character is required to wear a mask at the beginning of the adventure.



Figure 7. Animation of a health protocol using a mask  
Source: Writer, 2022

An animation of washing hands with soap will appear when starting stage 2. The application of this health protocol in gameplay is more about using soap as a weapon against Krona.



Figure 8. Animation of washing hands with soap  
Source: Writer, 2022

An animation of keeping a distance will be displayed when entering stage 3. Characters are required to keep their distance and avoid the 'Krona' crowd. Main Character health will decrease if violate this health protocol. Animation of keeping a distance can be seen in the image below.



Figure 9. Animation of keeping a distance  
 Source: Writer, 2022

The test scenario in this study uses the black box testing method. The test scenario for the game can be seen in Table 1.

Table 1: Smartphone Devices Specifications used for game testing.  
 Source: Writer, 2022

No.	Device	Specifications	
1	Huawei Honor 4C	Operating System	<i>Android OS v4.4.2 KitKat</i>
		Screen Resolution	<i>720 x 1280 pixels</i>
		Size of Screen	<i>5.0 inch</i>
		Memory (RAM)	<i>8 GB, 2 GB RAM</i>
		Processor	<i>Octa-core 1.2 GHz</i>
2	Vivo V9 1727	Operating System	<i>Android OS v9 Pie</i>
		Screen Resolution	<i>1080 x 2280 pixels</i>
		Size of Screen	<i>6.3 inch</i>
		Memory (RAM)	<i>64 GB, 4 GB RAM</i>
		Processor	<i>Octa-core 4x1.8 GHz</i>
3	Huawei P30 Lite	Operating System	<i>Android OS v9 Pie</i>
		Screen Resolution	<i>1080 x 2312 pixels</i>
		Size of Screen	<i>6.15 inch</i>
		Memory (RAM)	<i>128 GB, 6 GB RAM</i>
		Processor	<i>Octa-core 4x2.2 GHz</i>

The test results using the three devices above show that the image displayed is very clear. This is influenced by the high screen resolution of the three devices. Then, testing the buttons on the application runs smoothly according to the design plan. The next test on animation found differences in the speed of each device. When testing the menu display and gameplay where the device was forced to display many images with a large enough size simultaneously, the speed of displaying animations was affected by the processor speed and RAM of each device. This difference in animation speed does not significantly affect the final result of this game design. It can be concluded that in testing the higher the specifications of the device used, the better the appearance and speed of the designed game.

## 5. CONCLUSION

The conclusions that can be obtained in this study are: conclusions that can be obtained in this study are:

1. The design of the game entitled "Attack of Krona" as a media campaign for the adaptation of new habits using the design thinking method as problem-solving has been successfully carried out.

2. Test on three different devices resulted in good tests in terms of image display, as well as testing buttons on applications that ran smoothly. However, it was found that there was a slight difference in speed when testing animation on the application which was influenced by the speed of the processor and RAM of each device.

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