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## **Design And Build E-Therapy During The Pandemic Using An Android-Based User-Centred Design Model**

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### **ABSTRACT**

Therapy is a treatment to restore health to people who are sick such as mental disorders, many factors make people's psychological disorders today, one of which is the corona virus which is being experienced by many Indonesian people and even the world which has a negative impact. When people are infected with the corona virus, many experience depression, and this also has a negative impact on students at the University. The purpose of this research is to develop an application that can reduce the anxiety of people affected by the corona virus and aims to relax the human brain. And not only for people affected by Covid but also for the community as a tool for self-reflection. This application is designed to meet the needs of users affected by the corona virus. To make products more accessible to users, User-centered design (UCD) is a design process model that prioritizes user needs following user needs. From some people who have been exposed to the corona virus, the research team tries to respond to applications that have been developed. From the results of this study, the authors can conclude that from several characteristics of existing therapy, Muslim motivation is the most popular type of therapy with a test rate of 88.5% while the lowest test rate is Christian motivation with 57%.

**Keywords:** Android, E-Therapy, Framework System, Pandemic, User-Centered Design.

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### **INTRODUCTION**

The pandemic also has implications for the design, development, and use of technology used to mitigate the COVID-19 threat and relevant challenges associated with the design, development, and use of technology, which provide insight into how information systems and technology experts can help combat the COVID-19 pandemic. which aims to produce better solutions for tackling the COVID-19 pandemic and future pandemics (Wang et al., 2016). The expert system was carried out for testing on students by showing that the proposed approach not only improves student achievement but also reduces the number of cases (Wanichsan et al., 2021) and the expert system is used to detect COVID-19 and not only to detect it but also to detect it. Predicting its severity using a two-phase classification approach (COVID vs. NON-COVID) with feature maps in various SVM classification algorithms (Arshad et al., 2020). User-centered design (UCD) is a design process that prioritizes user needs. The stages of User-centered design (UCD) interface are specify the context of use records the identity of the user who will use the application, specify User and Organizational Requirements records what users need in the application, produce Design Solutions Designing designs to realize the application being designed and valuate Design Test the finished design. The following are the principles of user-centered design are focus on Users, in this phase the designer must connect directly with end-users through interviews and surveys, Integrated Design, at this stage the design must include 3 parts between the user interface, help system, technical support, and procedures for installation and configuration settings, in user testing, the only successful approach to User-Centered Design system design is that it requires empirical observation of user behavior, careful evaluation of feedback, insight into problem-solving, and strong motivation to change the design and Interactive Design. The system under development has to be defined, designed, and tried many times. Some Benefits of Good UCD Implementation CD is Reduce maintenance costs,

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Improved overall user satisfaction, Increased sales and revenue, Providing Positive Brand Image, Reduced training and support costs.

## LITERATURE REVIEW

Coronavirus is a virus that originates from animals and is transmitted to humans. In COVID-19, the process of transmission of the virus from animals to humans is not yet known, but phylogenetic data allow COVID-19 to be a zoonosis. Subsequent developments in data show that transmission is between humans, which is predicted through virus contact. This is in accordance with the incident of a community member who came from the city of Shanghai to Germany and was accompanied by the discovery of positive results for covid 19. Other reports support human-to-human transmission through close contact who has no travel history. The transmission of COVID-19 generally occurs through droplets and contact with the virus. An analysis revealed that the results of transmission from 1 patient to 3 people in the vicinity, but the possibility of transmission during the incubation period causes the patient-to-neighbor contact period to be longer so the risk of the number of contacts contracting from 1 patient may be greater.

From the problems above, the author wants to create a therapy application to reduce stress levels in the community in dealing with the covid 19 virus outbreak. In this design, the system developer does not involve the user process. Rather, the designer must prioritize the main design in the system so that it is easily understood by users (Rahayu & Fauzi, 2020). According to a study, it is known that most of the time is wasted because researchers cannot find the information they want to obtain, and this has an impact on decreasing productivity and increasing frustration (Sudiatmika & Dewi, 2018)

Research on User-Centered Design (UCD) has been carried out by various students and practitioners. One of them is research from (Wang et al., 2016). In this study, the design team did not produce an application, but a website design recommendation for the Nine-Year Integrated Curriculum in Taiwan. This research was conducted because the system could not be completed properly by the designer's children because they did not understand the professional language that puts the user at the center of a system development process. The User-Centered Design approach has been supported by various techniques, methods, tools, procedures and processes that help design interactive systems that are more user-centered. In every design process and testing process from the beginning to the end, user involvement is very much needed (Riswandha & Maulidiah, 2017). In designing an application, the system interface design must be able to follow the usability goal, and user experience guidelines. The usability goal is a way of relating to the success of a system designed to help users complete a task.

## METHOD

The research activities to be carried out will focus on the design, development, utilization and simulation of the E-Therapy system. Before conducting research, various literature studies related to the topic are studied first in order to get better results. The stages in conducting this research are as follows : (1) Data Collection The first stage is to collect data. At this stage the author collects data by Survey of various journals and references related to E-therapy. Questionnaires, questionnaires are conducted to obtain research data results that can be used as research comparisons, (2) Data analysis. The second stage is data analysis. At this stage, the author checks the data that has been collected previously. The author will choose what data is needed for the needs of making E-Therapy applications. Data analysis serves as processing to get the cumulative value as a result of research, (3) System Design. The third stage is system design. At this stage the author begins to design the application design that will be made. The application that will be designed has 3 pages. On the first page the author will enter a user and password to login. Next, you will be directed to the second page, namely the therapy menu. In the menu there are music, motivation, and games. On the third page the author will design an assessment page, on that page the author will create a button in the form of asking for an assessment, (4) System planning, System design is done using visual basic 2005 with My SQ, (6) Trials. In this fifth stage is a trial. After the application is complete, the author will carry out a trial. The purpose of the trial is to find out whether the application has been completed. The author will ask some people to try the application and (5) Report. The last stage is the reporting stage. At this stage the admin will check the "assessment" that has been given by the community. After that the admin will calculate the value. The purpose of calculating this value is to find out which menu the community likes the most. In general, the stages



of the research above can be seen in Fig. 1

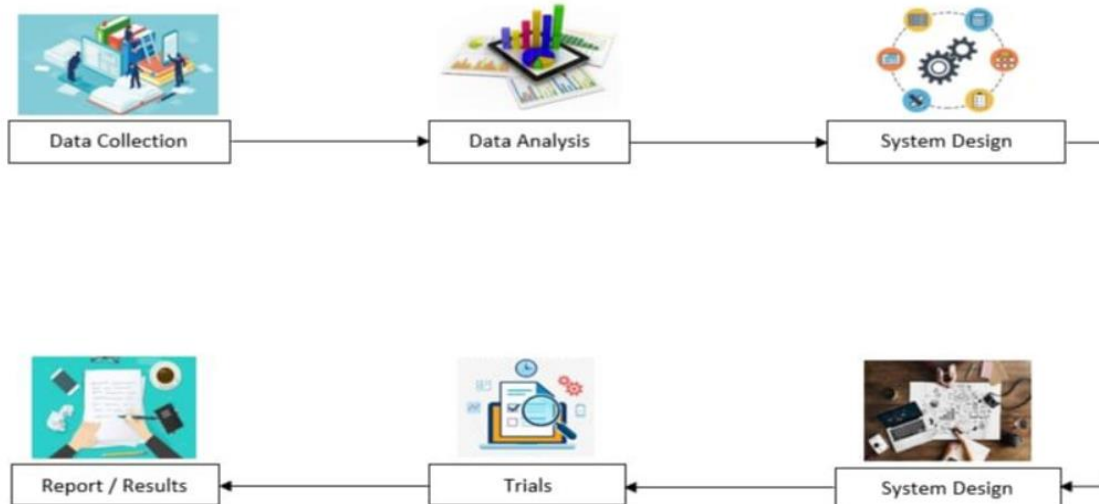


Fig. 1 Block Diagram of Research Stages

The software development model used in this study is the waterfall development model. It aims to get good results because this development model focuses on completing a stage perfectly before carrying out the next stage. The scheme of the waterfall development model in this study is as shown in Fig. 2.

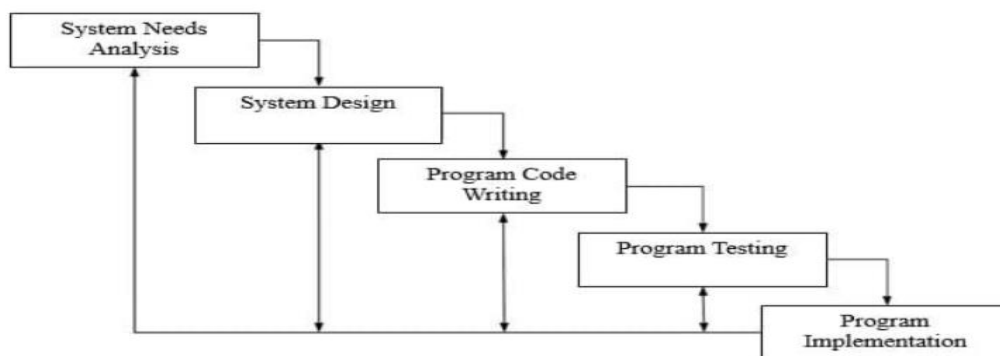


Fig. 2 Research System Development Model (Waterfall Development Model)

This section will explain the workings (process) of E-Therapy Counseling. In the early stages of E-Therapy the system is in an active state by opening the application directly. During counseling, the user will be asked to login first, after successful log in the user will be directed to the Therapy menu. On the menu there are 3 options, including Music, Motivation, and Games. After the user completes all the menus, the user will be asked to rate the menu, they have accessed.

After the user has finished accessing the E-Therapy application, the admin will log in first, after that the admin will calculate the assessment from the user. After all the values are calculated, the admin will make a report, where the report will conclude which menu is the most dominant in the user's interest.

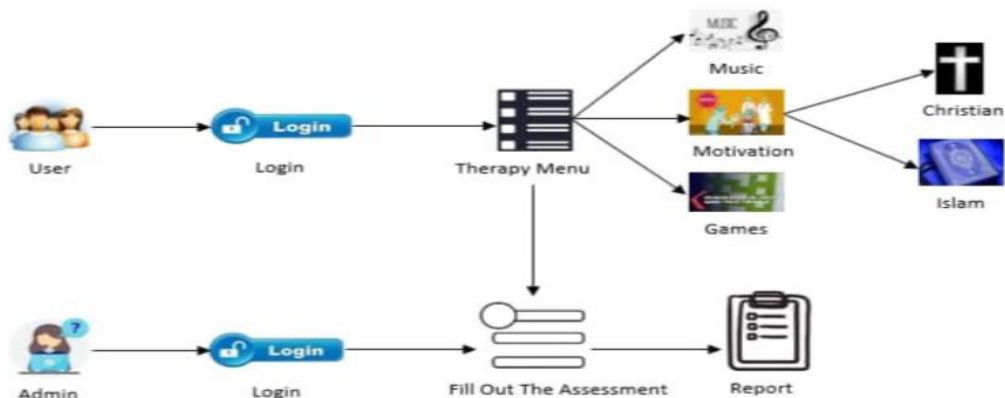


Fig. 3 Block Diagram of the E-Therapy Process

**RESULT**

In this study, an android application about E-therapy to reduce a person's level of stress and fear during the corona pandemic has been designed and implemented. This application can relieve stress for someone affected by the covid19 pandemic, where the features in this application include the music menu, motivation menu, and game menu. Users can play these three features and make an assessment by giving a rating. From the results of the rating given, there will be a report on the number of rates obtained from each feature in the E-Therapy application.

The results of the E-Therapy application on the music feature system, motivation feature, and quiz feature can be seen in Fig. 4, Fig. 5 and Fig. 6 below this.

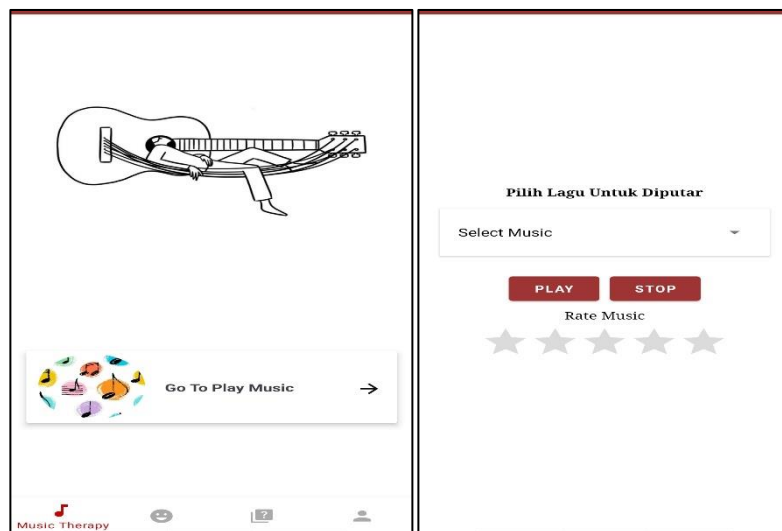


Fig. 4 Music Menu

In Fig. 5 the user can select the existing music in the E-Therapy system, the user can select the select music menu and can play it. After the user uses the feature, at the bottom there is a rating given by the user.

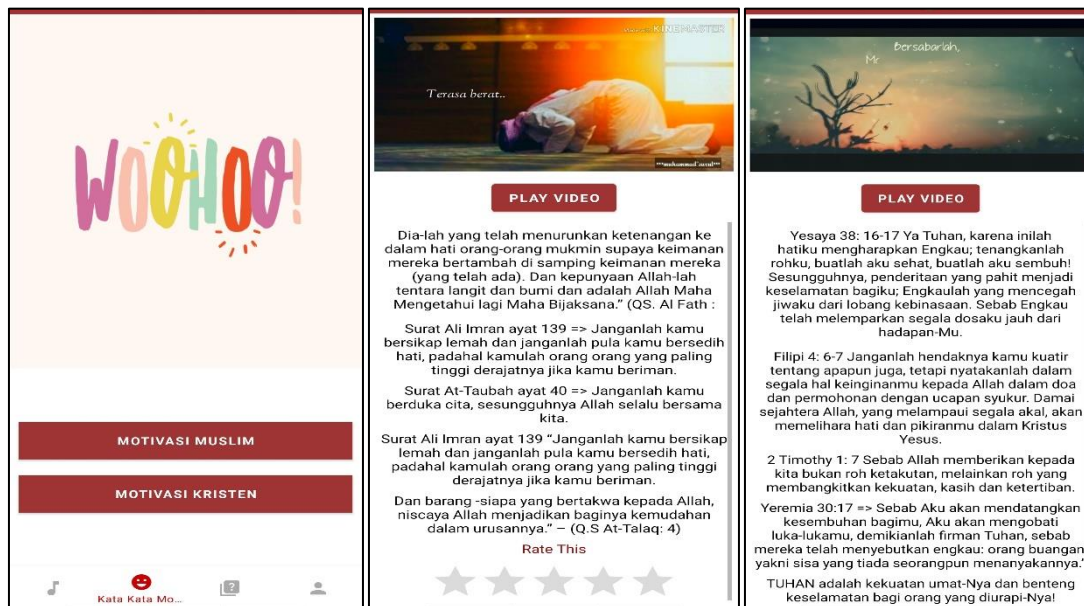


Fig. 5 Motivation Menu

In Fig. 6 users can choose Muslim motivation or Christian motivation in the E-Therapy system, users can choose motivation from the two choices. In the motivation there is a motivational video and along with verses that are updated by the admin, so that users can have positive thoughts and enthusiasm. After the user sees the motivational content, the user can provide a rating on the feature.

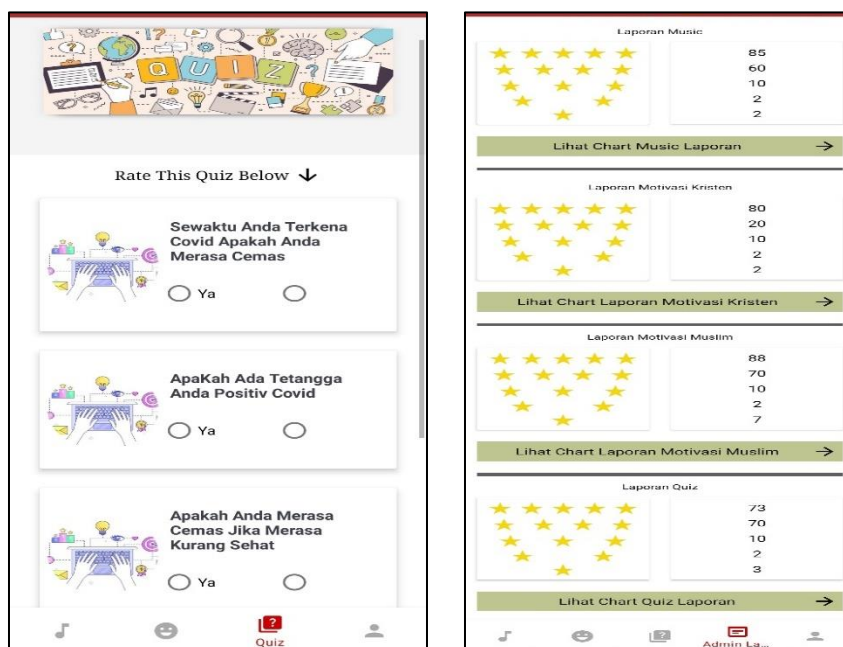


Fig. 6 Quiz Game Menu

In Fig. 7 users can play quiz games by answering yes and no to each question. After the user uses the game feature, the user can provide a rating assessment. And the report will get the number of users who have given an assessment rating.

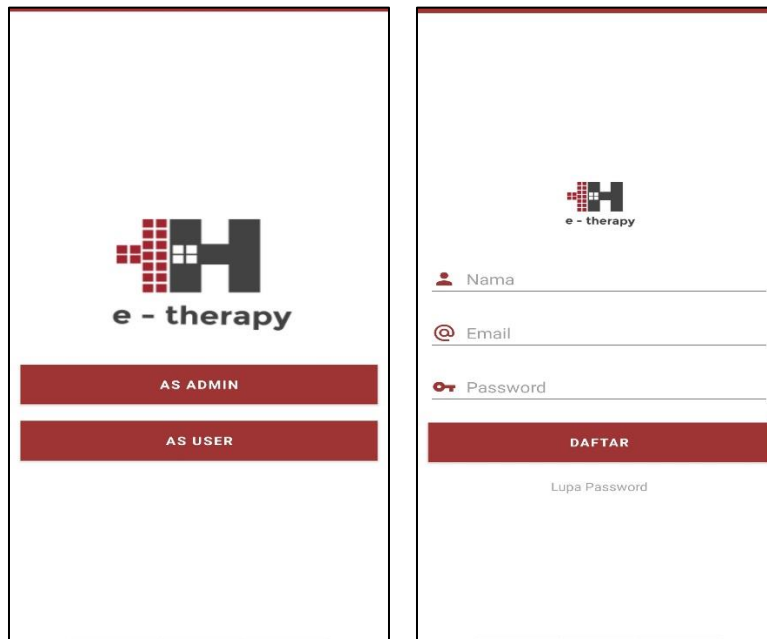


Fig. 7 Display of Registration Interface and Admin/User Login

### Music Admin Interface

In the music admin interface, the admin uploads music files to enter the user system. Where the user can listen to music on the application system and make an assessment.

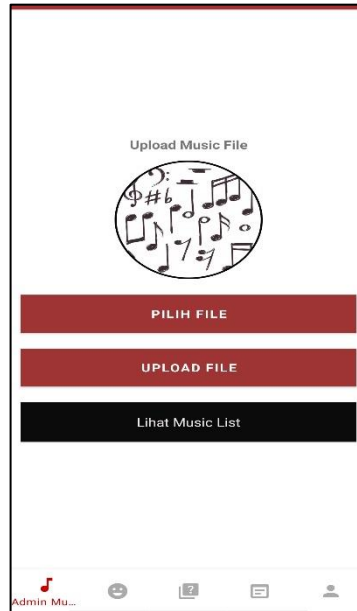


Fig. 8 Display of the Music Admin Interface

**Motivation Admin Interface**

In the motivational admin interface, the admin makes motivation about Muslim readings and Christian readings on the application system.

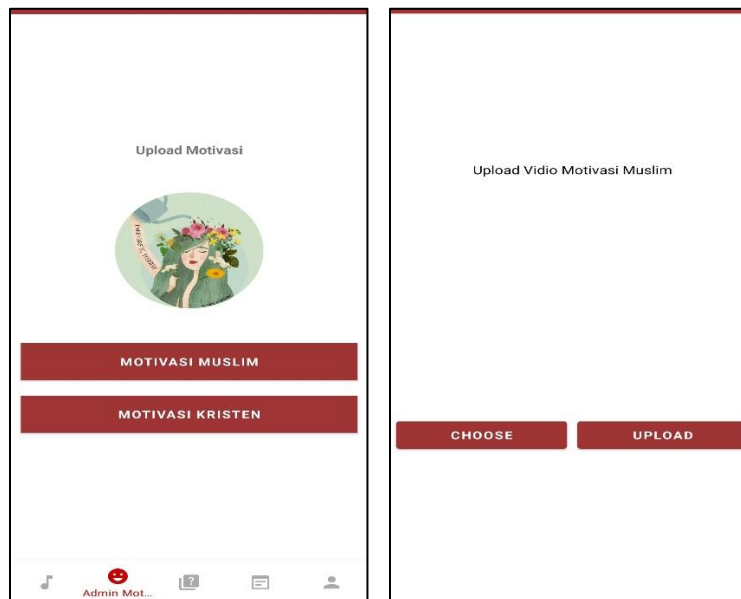


Fig. 9 Motivation Admin Interface Tampilan

**Game Admin Interface**

In the game admin interface, the admin makes a quiz on the E-Therapy application system.

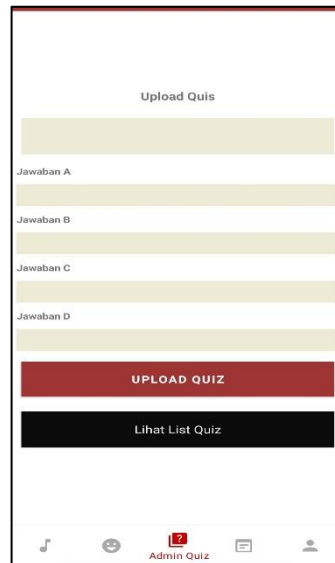


Fig. 10 Quiz Admin Interface Display

**Music User Interface**

In the music user interface, the user can listen to some of the music provided and make an assessment on the system.

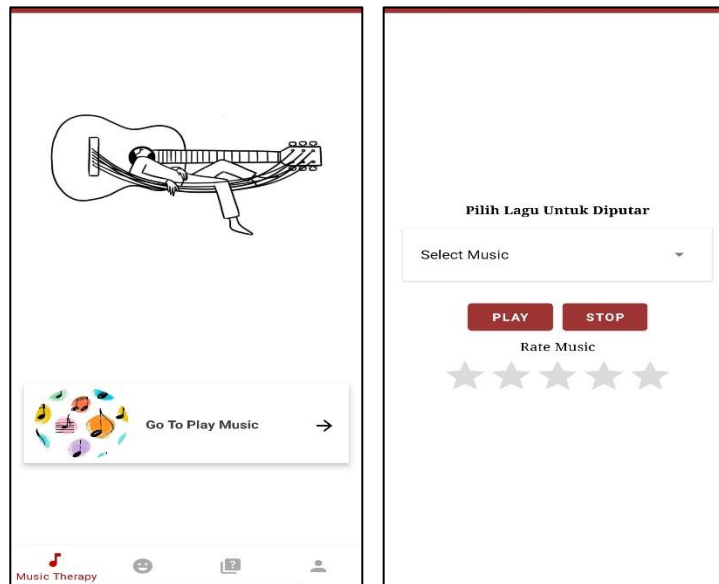


Fig. 11 Display of the Music User Interface

### Motivational User Interface Display

In the motivational user interface, users can read Muslim and Christian motivations that have been uploaded by the admin on the system.

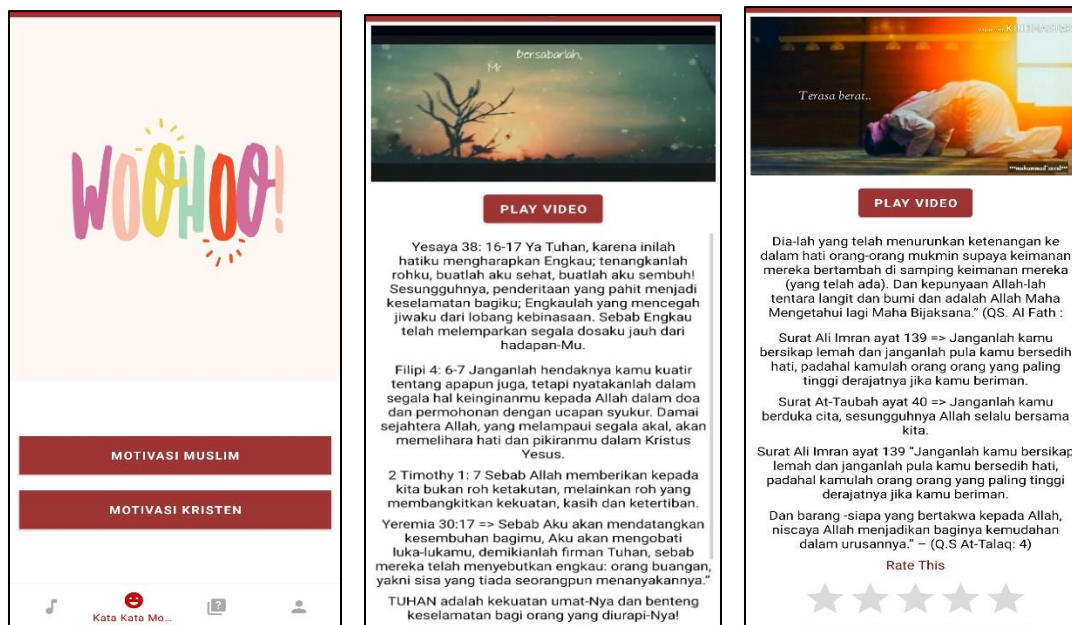


Fig. 12 Motivational User Interface Display

### Quiz User Interface Display

In the quiz user interface, users can play multiple choice quizzes that have been created and uploaded by the admin in the application system.

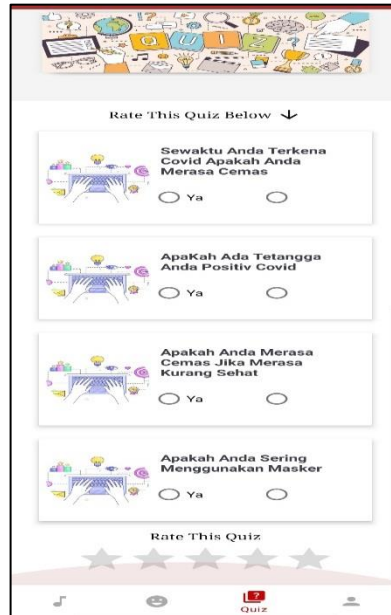


Fig. 13 Quiz User Interface Display

### Report Interface

In the user interface, the results report provides an assessment of 3 features, namely the music, motivation, and game quiz features.

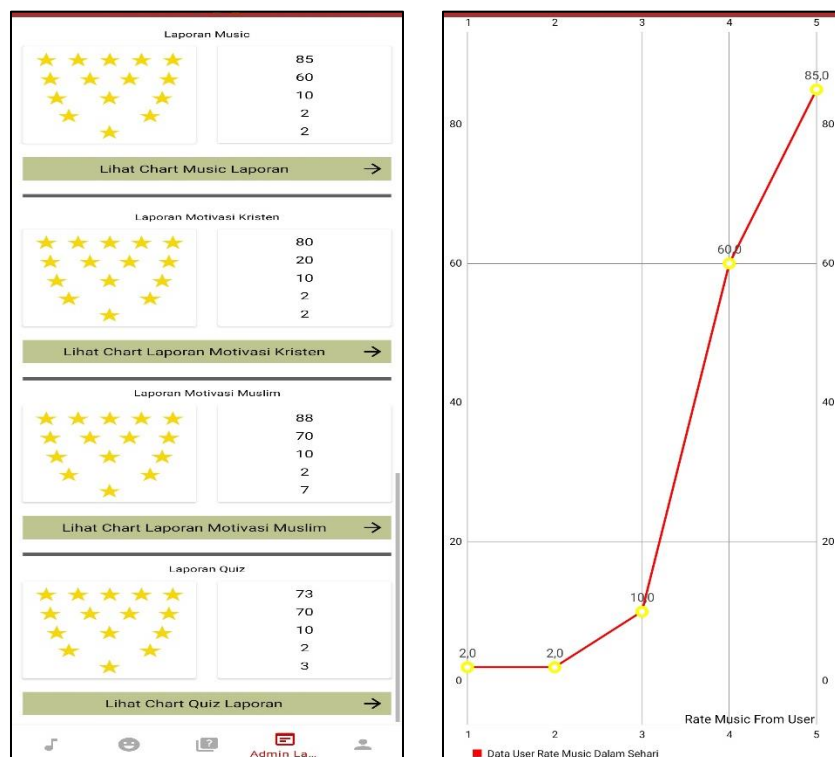


Fig. 14 Report Interface Display

From the results of system testing, the variables found that: Muslim Motivation =  $(88 + 70 + 10 + 2 + 7 = (885/100 = 88.5\%))$ , Quiz Motivation =  $(73 + 70 + 10 + 2 + 3) = (790/100 = 79\%)$ , Christian motivation =  $(80 + 20 + 10 + 2 + 2) = (570/100 = 57\%)$ , Music Motivation =  $(85 + 60 + 10 + 2 + 2) = (795/100 = 79.5\%)$ .

### DISCUSSIONS

The UCD development model can be used for applications outside the health sector. UCD is a design that is more specific to the user. UCD is only a model in development for the system but decision value making UCD does not yet have a fixed value, there is communication that exists between the user and the designer and the design results do not disappoint from the design results. Further research, so that the UCD-themed information system is more directed to application users to be further developed in terms of features, where the system that has been designed is still not perfect. Data processing is followed up by using algorithms to generate large amounts of data.

### CONCLUSION

Based on the results of the study, it can be concluded that E-Therapy can help users in eliminating boredom. Stress and pressure during this covid19, users can be entertained by the E-Therapy application system. The results of the output: music reports 78.5%, Christian motivation reports 57%, Muslim motivation reports 88.5%, quiz reports 79%. With the result that more people use the Muslim is motivation feature as much as 88.5%.

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