

THE DEVELOPMENT OF STRENGTH TRAINING INSTRUCTION VIDEO FOR VIRTUAL COMMUNITY OF STUDENTS IN PANDEMIC ERA OF COVID19

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Abstract

The aim of this study is to develop an instructional video for strength training that can be used as a training media for members of virtual community students in the era of Covid19. This study uses the Design and Development (D&D) research method with 6 stages of research procedures, namely: (1) problem identification (2) describing objectives (3) design and development of the product (4) product testing (5) evaluation after testing (6) Conclusion. The research instruments used are the Expert Validity Test from the expert of multimedia and sport expert to test the validity and reliability of the product, and video view test to describe the rating of video material and display. The participants of this study are 18 student who are member of virtual community student in sport science program, Universitas Pendidikan Indonesia, Indonesia. The results of the expert's assessment showed that this video categorized as a valid and reliable product to be used as training media. Video view test results showed that this product is pleasure and easy to practice with new techniques and add motivation to exercise, especially during the pandemic. This research concluded that the video product for strength training is excellent. The video contains material that is suitable for everyone, easy and safe to do, and can be done at home during the pandemic Covid19.

Keyword : Pandemic Covid19, Strength training, Video learning, Virtual community.

1. Introduction

All countries are experiencing extraordinary challenges and there are changes in life due to the Covid19 pandemic [1]. Since December 2019, an increasing number of cases infected with the Covid19 disease have been identified in cities in Central China. Since then, the infection has spread throughout China as well as the rest of the world. Covid19 has reached pandemic levels with a tendency to spread on a large scale [2]. Covid19 or 2019 Novel Corona virus Diseases is a large family of viruses that are phenotypically and genotypically diverse and cause disease in animals and humans. Currently, several countries have adopted new habits of "keeping your distance" and "doing activities at home". It is very difficult to predict when the Covid19 will be end and everything will return to normal [3]. Meanwhile, staying at home without any activity can cause stress, anxiety and mental stress and the best way to overcome these problems to replace any outdoor activities with some activities at home [4].

Due to this pandemic, several human activities as sports, physical activity and even some facilities for fitness have been closed to ensure mutual safety, therefore it is better to exercise at home [5]. At this time, the media to gain knowledge about good exercise has started to develop; some of them using a social media and the internet [5-7]. The use of media and the internet has increased, as well as for students so that they create virtual communities[8, 9]. With the presence of this virtual community, it is possible for individuals to communicate intensively with others without the need to meet in person. One of the best ways to keep everyone healthy and fit during a pandemic is doing the exercise, doing exercise with structured and planned movement can improve or maintain one or more aspects of physical fitness. Sports Exercise is a structured physical activity for a specific purpose, such as gaining strength in the lower limbs and reducing the risk of illness[10]. The disruption of routine physical activity and exercise can reduce physical fitness and increase the risk of infection and of course increase the co morbidity associated with the Covid19.

Strength training and exercises are performed using resistance such as self-weight to make the muscles harder and stronger. As well as resistance training for the heart, lungs and circulation to work more efficiently [11]. Associated with Covid19, evidence suggests that regular exercise can improves immune function and very useful for preventing infection [12]. Recent data appear that exercise can reduce the risk of acute respiratory distress, which is the leading cause of death in Covid19 patients. Physical activity in particular strength and cardio contributes to an overall reduction in cardiovascular risk as well as a reduction in systolic and diastolic blood pressure [13]. Strength training can be done alone at home without having to meet a lot of people with a noteworthy dose of 1-2 sets of 10 reps for beginner [14].

Home isolation is the best way to reduce the spread of the Covid19 virus, but the individual must keep doing e moderate to vigorous physical activity levels and avoid inactive behavior. A lack of physical activity potentially caused impact on heart and lung health and also cardiorespiratory system [15], so it is important to do strength training and cardio exercise. However, at this time the exercise cannot be carried out directly in the fitness center due to health reasons and physical distancing, meanwhile the facilities for exercising at home are still very limited. Therefore, this research was studied to create a product in the form of a video as an exercise guidance for each individual to practice alone at home with the right

exercise process and keep doing physical distancing, so everyone can stay active and avoid the risk of being exposed to the virus.

2. Method

The development of strength training instruction video using Design and Development method, there are consists of 6 steps, namely: (1) identification of the problem (2) describing the objective (3) product design and development (4) product testing (5) evaluation after testing (6) Conclusion .This research used Design and Development model as shown in Fig. 1.

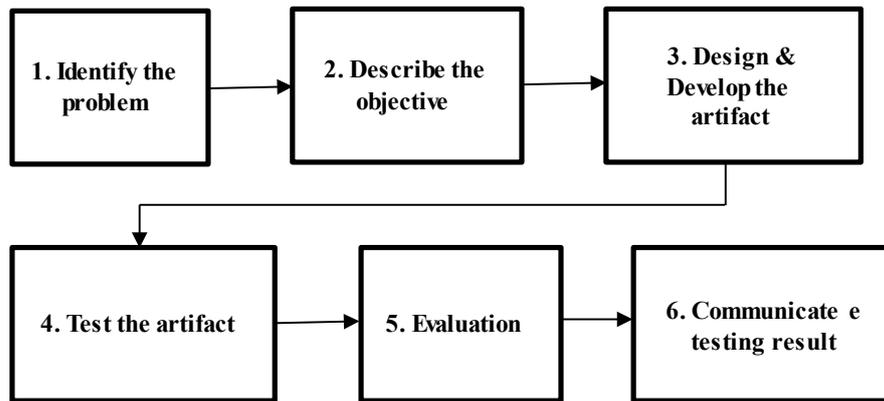


Fig. 1. Research model.

2.1. Identify the problem

The first step was to identify the problem that became the reason or background for this research. Covid19 requires people to stay at home and limit their activities outside, thereby reducing their participation in physical activities and sports. Deficiency data from previous videos and evidence regarding the current pandemic were collected and became a reference for creating media by identifying 30 videos and seeing the advantages and disadvantages of all of them.

2.2. Describe the objectives

The purpose of this research is to create an instructional video for strength training that can be used as a sports exercise medium for the virtual community of students in the Covid19 era.

2.3. Product design and development

The design and development process includes four stages, there are Information gathering stage, Planning stage, Product development, and Creating Media. In the first stage, collecting as much data as needed for this research includes the need for training manual development, media aspects in terms of renewal as well as media use and media utilization in the field. The next stage is to select video content for the formulation of strength training movement material as a guide in creating the videos. The product development stage includes designing a video, making a story board, and creating strength training materials.

2.4. Product trial

The implementation of product trials or the validation stage is the stage where the product is tested to experts. The validation process consists of two stages, first stage is related to material content; strength training for sports experts. The second stage is the multimedia expert in viewing media elements and the appearance and video of this exercise instruction. After the video was validated, a revision was carried out to test 18 students in the virtual community.

2.5. Video making process

In this section will be presented about the process of creating videos starting from the design until validation is done on sports experts and multimedia experts then tested to students in the virtual community. The development of video content consists of several stage, there are making a well-structured story board, designing snippets stage, video creating stages and the video editing process. Process of video production carried out an expert validation test, video view test, video packaging and finally the HKI registration. The process of making video content can be seen in Table 1.

Table 1. The process of making content.

No.	Process	Stage
1	Content Development	Create a Story Board
2	Video Design	Designing snippets
3	Video production process	A. Take Video B. Editing Process
4	Post – Production	A. Expert Validation Test B. Video View Test C. Video Packaging D. Registration HKI

In the process of creating this video, a script is needed for the cinematic prologue scene, opening and closing. The process of making the story board of strength training video instructions can be seen in (Table 2),

Table 2. The story board of strength training video instructions.

No.	Scene	Script
1	Cinematic Prologue	Bring up some of the places in the video. It shows models preparing to do sport such as wearing shoes and carrying the drinking water and running, then make the preparations by preparing the necessary equipment as well as performing strength training movements.
2	Opening Video of Strength Training Instructions	Hey guys, you want to be healthier and stronger? this time i am going to show you the strength training for you to exercise at home. Watch the video and do the exercise until it's done okay, let's get started.
3	Closing Video of Strength Training Instructions	Well, that's some of strength training exercise, hopefully useful for all of you okay. See you in the next video guys!
4	Opening Video of Strength Training Instructions	Hi everyone, how's it going? Hopefully always healthy and stay up to the spirit okay. Today I am still going to show you some strength training, let's get started and keep your spirits up!
5	Closing Video of Strength Training Instructions	That's some strength training movement, hopefully it is worth it. Stay healthy, wearing a mask, wash your hands and keep your distance when outside. Thank you!

2.6. Process of recording videos

This Video was shoot at Universitas Pendidikan Indonesia, from the start to the end by using Canon EOS 600D and Canon EOS 700D Cameras, tripods and microphones.

2.7. Process of editing videos

The editing process is done after the shooting in the field is finished to combine the pieces of video footage that have been taken into a solid together. Video editing is done to make the product interesting by added sounds, transitions and other image snippets to make them look better with the need for transition effects for videos. Video is edited in Adobe Premiere Pro 2019 software in its entirety until the video is ready to go live properly. The image editing process uses Corel Draw X7 software can be seen in (Figs. 2 and 3).

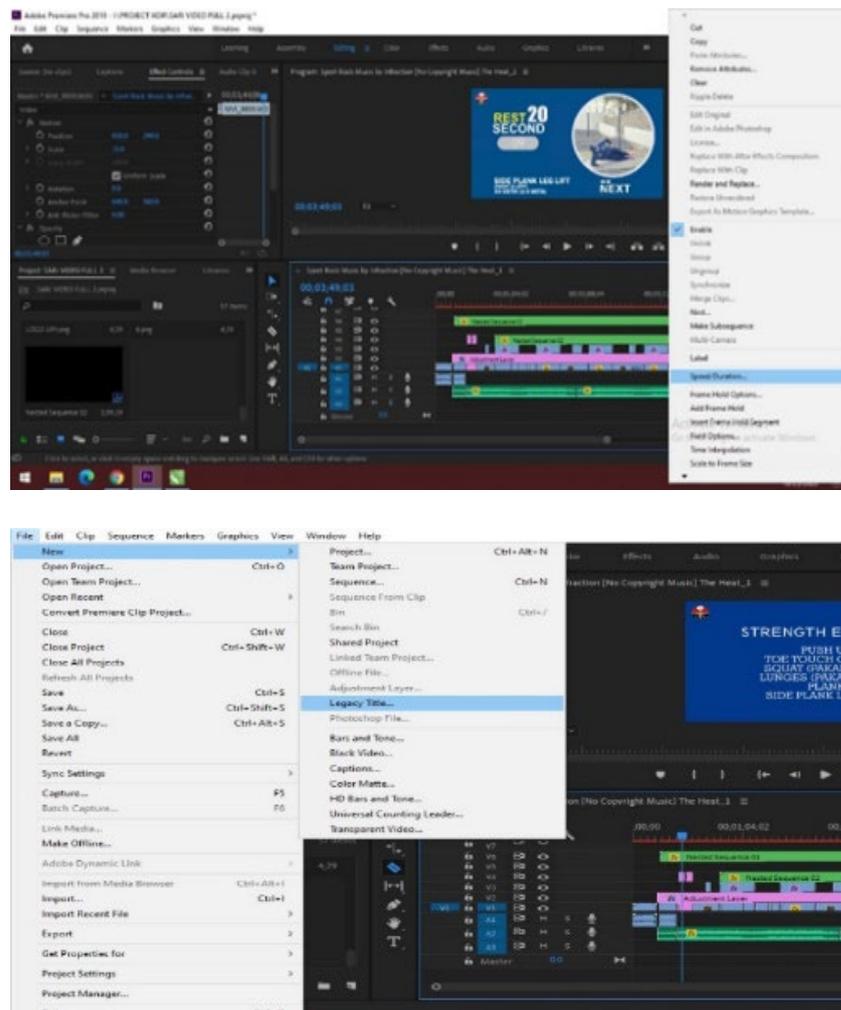


Fig. 2. Video editing stage with Adobe Premiere Pro 2019.

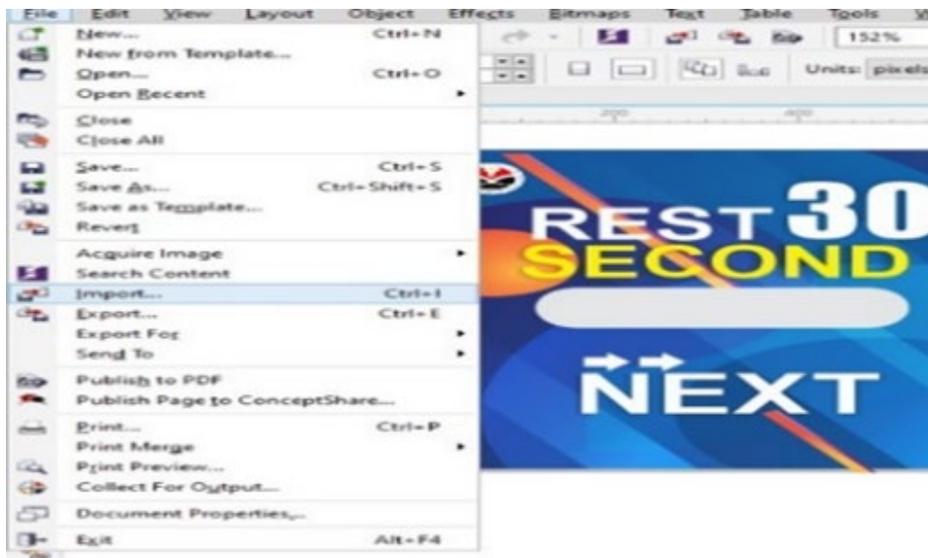
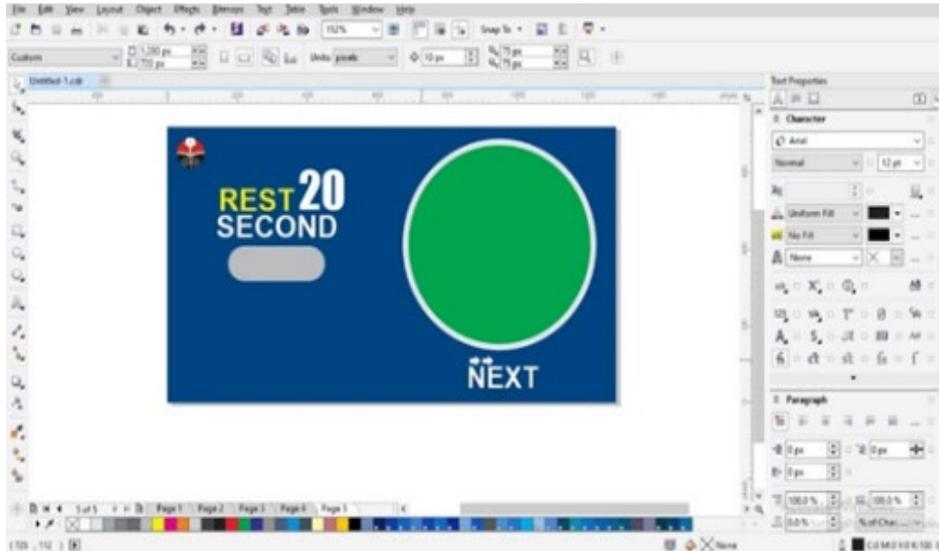


Fig. 3. Image editing stage with Corel Draw X7.

The final result is a video with duration of 11 minutes 38 seconds with several parts of the video, that is a cinematic video with a duration 1 minute 9 seconds and training instructional video with a duration of 10 minutes 29 seconds. This video was made in MP4 format (720p) with a capacity of 109 MB, this video is published on YouTube so that all students in the virtual community can access it easily. Here's a snippet from the strength training instructions video. The snippet from the strength training instructions video can be seen in Fig. 4. The results of this video begin with a few footages of strength training movements to attract the attention of the audience then proceed with introducing strength training then strength training movements are carried out from the upper muscles.

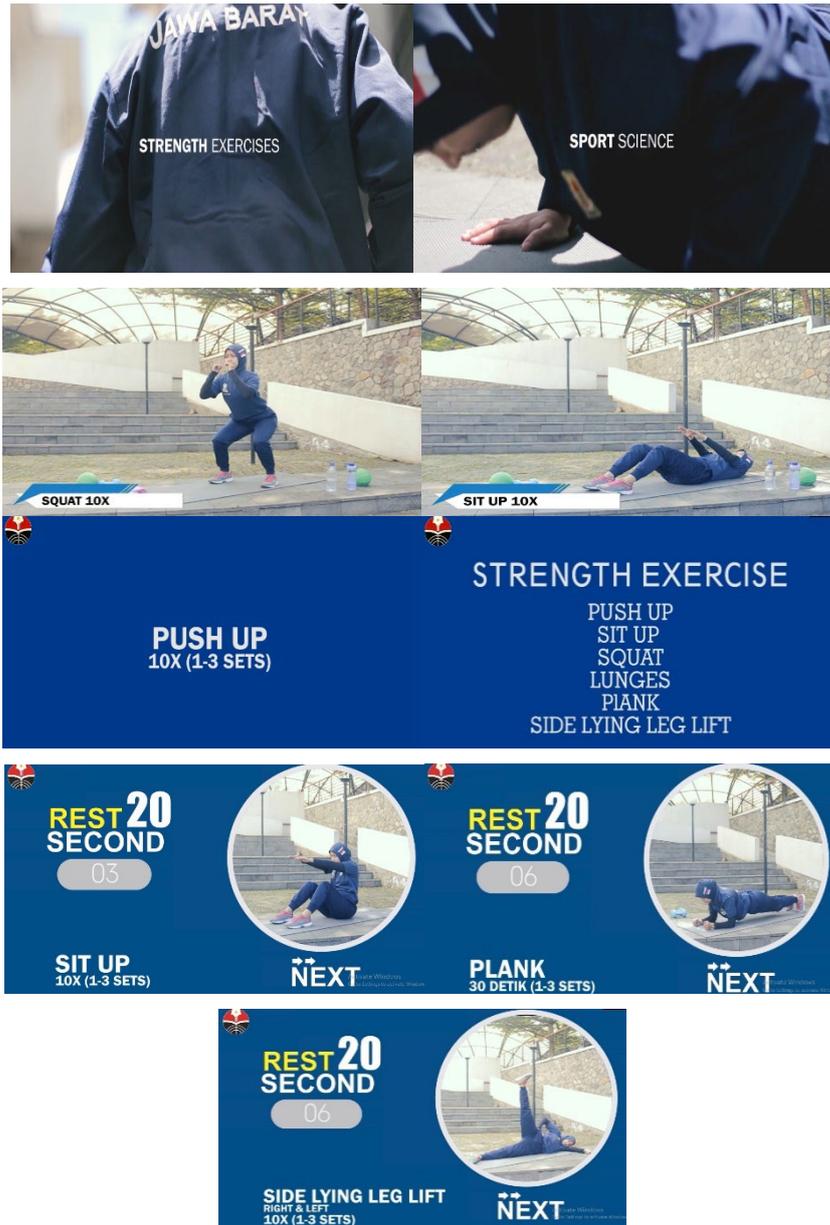


Fig. 4. Strength training instruction video.

3. Results and Discussion

3.1. Validation of sports experts

The first validation is done by Sports Experts, the validated thing is related to the Material Aspect in the selection of strength training movements and the suitability of exercise doses. The validation of sport expert showed that the material in the video is in accordance with the recommended exercise rules. The video already

contains promotive elements or invites the user to exercise at the right dose, this video also contains preventive elements or helps the user prevent the risk of disease and injury due to the wrong dose of exercise. This video helps to add user insight around strength training, this video can be a tool or media to improve the strength training for all users.

3.2. Validation of Multimedia Experts

The second validation is performed by the relevant Multimedia expert on the selection of the video display, validation is carried out by multimedia expert. There are two aspects that are given an assessment, namely the Video Display aspect and Communication Aspect. The multimedia expert validation showed that

The image quality in the video is excellent, the quality of the sound clarity in the video is excellent, the lighting quality in the video is good, the appearance of the model in the video is excellent, the clarity of the material in the video is already excellent. The results on multimedia communication aspect showed that the video is already communicative easy to understand, the video contains promotive elements in inviting the user to exercise. The video also contains educational elements, especially information in the field of sports science, the video does not contain pornographic elements or other non-moral actions. In terms of use, this video is also easy to access, suitable for watching by anyone, and participates in advancing the development of Sports Science.

3.3. Video View Test

The test was conducted on 18 students in a virtual community, the students view videos together and participate in training in the virtual community for a month in the duration of three times a week. There are two aspects that are assessed related to video products, that is the display and material aspects. The video view test result showed that. The quality of the video display was rated very good, the language used in the video and the suitability of the music selection with the video also rated very good by 8 respondents and good by another 8 respondents, while the explanation of the writing in the video only 1 person rated poorly. Overall, it can be concluded that in terms of display and material aspects, this video is categorized as very good. The result also showed that 14 respondents strongly agree that the video provides a new experience in strength training exercise, 13 participants strongly agreed that the video increases motivation and passion to exercise, while 1 respondent rated that disagreeing with the easy explanation of the material in this video. But overall aspects of the video view are rated very good.

3.4. Discussion

The product developed is an interactive video of strength training instructions for student in virtual community during covid-19 pandemic. This product is intended to provide easy access for students to practice, while increasing their participation and motivation to do physical activity.

This product is divided into 3 parts with 12 movements and combined into an instruction video. The video begins with a one-minute cinematic video clip to excite participants' passion and motivation to exercise strength training and continues with video footage of training instructions starting from low intensity and basic

techniques to increased intensity and movement. The exercise program is designed with 12 strength training movements, with 10 reps and 2 – 3 sets and 20 seconds of break between movements to increase strength [14]. The exercise for upper body muscle strength is push ups, sit ups, toe touch crunch, and planks. As well as lower body exercises are squats, lunges and side lying leg lifts.

The movement presented in the video is a basic strength training exercise for beginners, simple and easy to follow. As well as increasing the intensity of exercise this video directs the participants to perform movements by adding weights such as can dumbbell or other loads. This exercise is perfect to be done at home and it help to strengthens belly, arms, legs, glutes, chest, shoulder, and triceps. Home based strength training is easy and can be done anywhere and anytime, the Equipment is also simple and not all the movement require the equipment except with the body's own weight. The advantage of this video strength training is that it costs nothing but time and effort [16].

This video product can be an alternative problem solving to overcome the need for physical activity and maintain health during the Covid19 pandemic. Video is medium of messaging with audio media – visual or listening media – viewpoint, using this video that has creative and interactive characteristics that combine text, audio and images [17].

The advantage of this video medium is also presenting a model of strength training with an attractive appearance, accompanied by a sound that evokes the spirit of exercise. is easily accessible so that it can be followed properly and has its own appeal and can be a boost or motivate participants to exercise. This video can also reduce the saturation of exercising, especially when done together in a virtual community. During quarantine, staying active and maintain physical exercise routine will be essential for mental and physical health. Fortunately, a wide range of exercises, such as video or app equipment aerobics or strength training, can be performed at home [6].

The World Health Organization (WHO) provides recommendations for adults for physical activity (150 minutes of moderate-intensity physical activity, 75 minutes of high-intensity physical activity, or a combination of the equivalent per week). Staying at home is a must during the Covid19 pandemic, however with this strength training vide instruction it will allow everyone to meet WHO recommendations for physical activity and need to avoid sedentary behavior. In fact, several relatively simple exercises are proposed, considering the conditions of each one and the physical space in each home, they can contribute to reducing the sedentary behavior during Covid19.

4. Conclusions

The general conclusion of this study is that this strength training instruction video is excellent, valid and reliable used as a medium for exercise at home. The video contains material that is suitable for everyone, easy and safe to do, and can be done at home during the pandemic Covid19.

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