SIMULATION APPLICATIONS DEVELOPMENT MULTIMEDIA INTERACTIVE AND PROCUDERES LEARNING PROVIDE RED CROSS YOUTH (PMR) LEVEL WIRA FIRST AID BASED ANDROID

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ABSTRACT

Delivery method in Red Cross Youth (PMR) organization in Purwakarta is still using lecture method and usually use the tools in the form of guide books. This delivery method is too elusive for the members because the combined practice is only carried out once in a month, it makes the members is difficult to remind the materials. The other causes, the guides of every school do not utilize the learning that is based on technology.

Information Technology in general has become inseparable part of innovative products and applications that support the training field. One of its implementation is the process is the practice of exercises Extracurricular PMR assisted with information technology, this is known as simulation. Linked with the current era of information computerization, android operating system on smartphones has grown rapidly. With the advantages that possessed by this android smartphone make it more flexible in its use.

Based on the results of research and calibration, Simulation Applications Multimedia Interactive and Procuders Learning Provide PMR Level Wira First Aid Based Android can provide convenience and learning to members of PMR for to material learning and Procuders Learning Provide First Aid anytime and anywhere.

Keywords: Red Cross Youth (PMR), Simulation, Interactive Multimedia, Android.

1. INTRODUCTION

Red Cross Youth (PMR) is one of the extracurricular associated with the humanitarian field. Red Cross Youth (PMR) activities related to distribution, the development and application of helping behavior of students. Factors declining interest of students to participate in extracurricular activities PMR is a lack of awareness for the participating rescue and help people who need help because of a lack of knowledge and skills in the field of Red Cross Youth (PMR), the members of PMR less creative in understanding the material and dependence coaches with very large, the supervisor of PMR underutilization of learning to use technology, and other factors due to the provision of material monotonous and practice less attractive than the supervising PMR.

Pursuant to the problems that have been described, for it will be built a solution in the form Simulation Applications Multimedia Interactive and Procuders Learning Provide PMR Level Wira First Aid Based Android so that the application is expected to provide solutions to the problems.

1.1 *Red Cross Youth (PMR)*

Red Cross Youth (PMR) is a container cultivation and development of PMI Youth members, PMR is found throughout the PMI (district / city) in Indonesia. The members of PMR is one of the strengths of PMI in carrying out humanitarian activities in the field of health and disaster preparedness, promoting seven (7) principles of the Red Cross / Red Crescent, and to develop organizational capacity of PMI.

Inside the standardization of training for PMR there are 7 (seven) the material to be controlled by members of PMR, among others: Red Cross Movement, Leadership, First Aid, Sanitation and Health, Adolescent Health, Disaster Preparedness, Blood Donors. Each material and activities are interrelated, when learning of disaster preparedness will also learn about first aid in injury or illness due to flooding, sanitation and clean water, learn to apply the seven (7) principles and leadership if succor, etc.

1.2 *Instructional Media*

The word "media" comes from the latin and is the plural form of the word "medium", which literally means "an intermediary or an introduction".

Instructional media must meet several requirements of which must be able to increase the motivation to

learn. The use of instructional media has the goal to motivate students. Also the media should also be able to stimulate students to remember what they have learned in addition to providing students and provide new learning stimuli. Good media will also enable students to provide feedback, besides reciprocity also encourage students to practice correctly.

1.3 *Multimedia*

Multimedia can be regarded as a new form in the manufacture of computer programs with penggambungan more than one media. According to Turban "Multimedia is a combination of at least two media input or output of the data, this media can be audio (voice, music), animations, video, text, graphics and images".

There are four essential components of multimedia, namely:

1. *There should be a computer that coordinates what is seen and heard that interact with users*
2. *There must be a link that connects users with information*
3. *There should be a navigation tool that guides guides*
4. *Multimedia provides a place to gather, process, and communicate information and ideas of users.*

Multimedia is composed of several elements, namely text, voice (audio), pictures (image), video and animation. Here's the explanation.

1. *Text*
   Text is a combination of letters that form a word or phrase that describes an intent or learning material that can be understood by those who read it.
2. *Figure*
   The picture is something that is in the form of lines (Line Drawing), circle, box, shadow, color and so on are developed with menggunankan software to multimedia can be presented more interesting and effective.
3. *Animation*
   Animation is a display that combines media text, images and sound in the activities of the movement.
4. *Audio*
   Audio is the variety of sound in digital form such as sound, music, narration and so on that could be heard for purposes of background sound, delivering a message of grief, sadness, excitement and variety of adapted to the situation and conditions.
5. *Video*
   The video is basically a tool or medium that can menunjkan a simulation of real objects. Video as a digital media that shows the order or sequence of moving images and can provide illustrations or fantasy.

1.4 *Interactive Multimedia*

Interactive multimedia is the utilization of a computer that can create a dynamic and prentasi interatif by combining text, images, audio, graphics and video with combine links and tools that allow users to interact.

Interactive multimedia models consist of:

1. *Drills Model*
   Model of the drills is one of computer-based interactive learning model (CBI) which aims to provide a more concrete learning experience through the provision of training exercises to test the ability of problem students through speed solve the given program.
2. *Tutorial Model*
   The tutorial model used in the teaching and learning Process by using software in the form of a computer program which contains the subject matter.
3. *Simulation Model*
   Simulation Model is one of learning strategies that aim in concrete experience of paint through the creation of a clone-clone bentk experience that approached the atmosphere without the risk.
4. *Instructional Games Model*
   Model of Instructional Games need not mimic reality but can have a character that provides an enjoyable challenge. Model of Instructional Games can be used as power plants motivation with degrading way competed to achieve something.

1.5 *Dimensions (2D)*

2D animation technique is a type of animation that has properties visually flat. When viewed from a technical manufacturing, there are two ways, namely manual and computer. Animation technique manual or commonly referred to as cell animation is animation technique oldest age. This animation technique allows animators to create an image on a sheet celuloid (transparent sheets) are layered. Due to advances in technology now animator no longer make the traditional animation with celuloid sheet, but can use plain paper that will be scanned (scan) and then in color by using a computer. 2D computer animation technique is a technique of animation created with the help of a computer (software) and still rely on the ability to draw the pages. Thus distinguishes between traditional 2D animation with CGI (Computer Generated Imagery) is medium.

1.6 *Android*

mobile devices which was first developed by a company called Android Inc.

The advantages of belonging to android are as follows:

1. *User Friendly - Very easy just by studying computer operte few days even a few hours, and is also attached to the Android running on Smartphones.*
2. *Notifications - You very easily get notifications from android smartphone by setting some Email account, SMS, etc.*
3. *Display - In terms of display, Android not less good from his Apple IOS, android from scratch because it almost brings the IOS technology, it's just this version of cheapness.*
4. *Open Source - The operating system is indeed made open source by its creator, because Linux kernel-based.*
5. *Application - For your application to be served millions of interesting applications options from free to paid, and you can download it at Google's Play.*

Lack or weakness of android itself is as follows:

1. *Update System - To perform the update system is not easy, you have to wait from each Vendor to release an Update to the latest version.*
2. *Battery Quickly runs out - This often occurs if you turn on the data plan and use the widget as well as applications that run in excess.*
3. *Loading or Lag - in fact if this has something to do with the specification of each device, but there are times when the Android is not friendly with some applications due to Ram or Processors that are inadequate.*

1.7 *Likert Scale*

Likert scale is a psychometric scale used in the questionnaire and is one technique that can be used in the evaluation of a program or policy planning. Rensis Likert has developed a scale to measure people's attitudes in 1932 which is now known as the Likert scale. Likert scale is a scale that can be used to measure attitudes, opinions, and perceptions of a person or group of people about a symptom or phenomenon.

2. *THE CONTENT OF RESEARCH*

2.1 Procedure In Progress

Prior to designing the system, the need for an analysis of the running procedures, aiming to evaluate the fault to be repaired, where these procedures would be a reference to made into an application simulation android-based. Here are some of the procedure of the joint exercise extracurricular Red Cross Youth (PMR) in Red Cross Indonesian (PMI) Purwakarta.

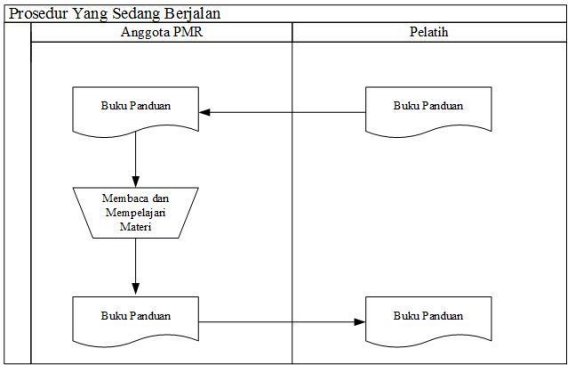


Figure 1. *Learn Material Flowmap*

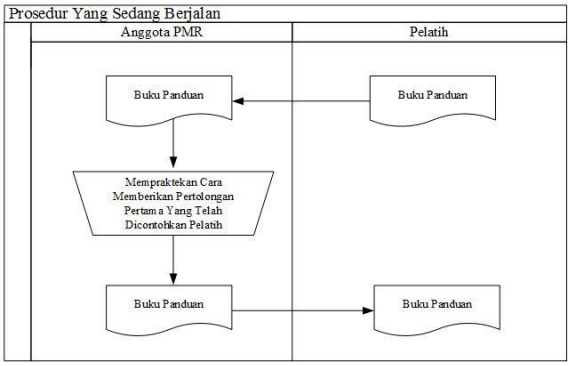


Figure 2. *Practice Flowmap*

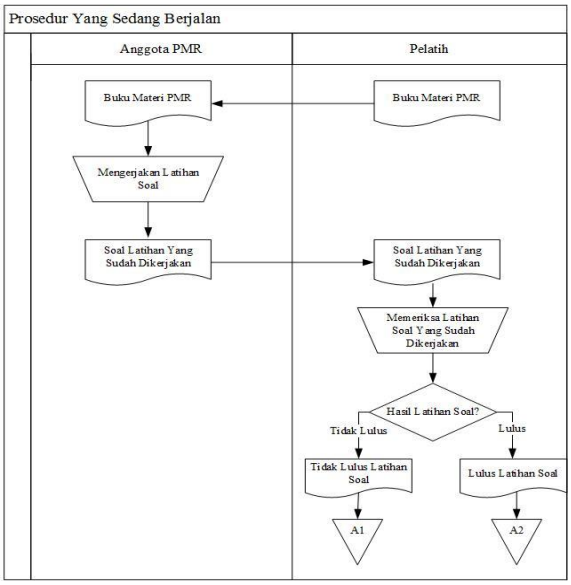


Figure 3. *Exercises Flowmap*

Description:
A1: Archive of results do not pass the exercises
A2: Archive of results pass the exercise

2.2 The Proposed System Procedure

After making an analysis of the running procedures, and required an analysis of the system to be proposed, which aim to give advice as a reference for creating an application simulation learning android-based.

To find out the flow of the proposed system procedures for exercise Red Cross Youth (PMR) in Purwakarta, it will be described in the form of flowmap on figure 4.

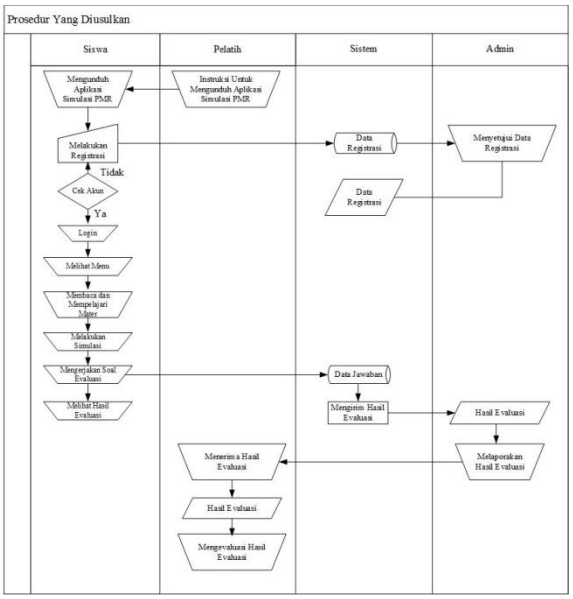


Figure 4. *The Proposed Procedure Flowmap*

2.3 Multimedia Application Built Analysis

Simulation applications multimedia interactive and procuderes learning provide red cross youth (pmr) level wira first aid based android an application that contains the material concerning the procedure of providing first aid in which the application is built with the purpose for to provide convenience and knowledge to the students to learn the material and this PMR training activities anytime and anywhere. So it will create an interactive learning media for teaching methods and simulation, where students can easily learn the procedures for providing first aid.

2.3.1 Description Of The System

The system that will be built have two users namely admin as the provider and students who take extracurricular Red Cross Youth(PMR) as a user of the system, each have different access rights. For it is necessary a security mechanism by providing different Logging facilities. The facility is used as verification of access rights of the user students who take extracurricular Red Cross Youth (PMR) and admin in system. Verification is used there are two i.e. username and password, which the user name that is used for students who take extracurricular Red Cross Youth (PMR) wear the students who take extracurricular Red Cross Youth (PMR) and username for admin to wear your admin username.

On the simulation applications multimedia interactive and procuderes learning provide red cross youth (pmr) level wira first aid based android conveying message (learning and simulation) regarding the procedure of providing first aid, so it takes learning and simulation interactive so users can understand what is being delivered. The form of learning:

1. *This application combines some elements of multimedia such as text, images, animation, audio and video that are packed in a scene.*
2. *In this application the user will be more interactive because the learning method using simulation.*
3. *Use this app to be flexible because it uses the concept using the Android platform.*
4. *The application will be made to have two systems namely frontend and backend. Here is a picture of the flow of the system that will be created can be seen in Figure 5.*

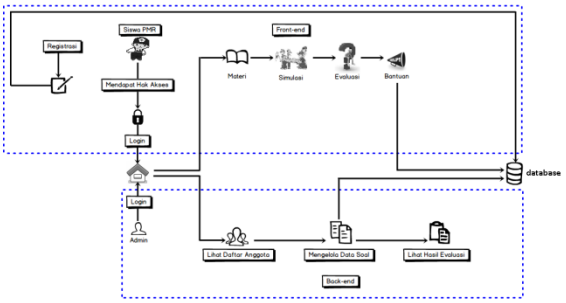


Figure 5. *System Groove*

2.3.2 The Description Of The Concept Of Applications Built

Simulation applications multimedia interactive and procuderes learning provide red cross youth (pmr) level wira first aid based android an application that can be used to provide facilities and knowledge to students who take extracurricular Red Cross Youth (PMR) for to learn the material procedures for providing first aid at any time and anywhere. The description of the concept of applications built canbe seen in Table 1.

Table 1. *The Description Of The Concept Of Applications Built*

Item Build	*Description*
Tide	*Simulation Applications Development Multimedia Interactive And Procuderes*

	Learning Provide Red Cross Youth (PMR) Level Wira First Aid Based Android
User	*The students joined extracurricular Red Cross Youth (PMR) and admin*
Figure	*The existing image in the application that is being built is a real picture and picture illustrations are tailored to the fact*
Material	*The materials applied into applications is the material that was provided to the instructor for the students joined extracurricular Red Cross Youth (PMR)*
Audio	*Audio in-built application adapts to the animations and simulations*
Animation	*Animation in the application that is being built is a 2D animation*
Interactivity	*Interactivity in the application is reading the material, reading, perform simulation and do exercise problem*

2.4 Learning And Simulation Method Analysis

Interactive multimedia learning relies on learning methods are used. The development of this application using learning methods and simulation.

2.4.1 Learning And Simulation Analysis

Learning Simulation Method is an artificial situation that resembles the condition of a real situation. The following is the format on motode simulation on the simulation applications multimedia interactive and procuderes learning provide red cross youth (pmr) level wira first aid based android.

On multimedia learning was designed some simulations to give more understanding to the materials taught them:

1. *Cardiac Pulmonary Resuscitation*
2. *Artificial Respiration*
3. *Aid Scorch*
4. *Aid Poisoned*

2.5 Testing

Software testing is the stage to find the mistakes and flaws in the software that is built so that it can be known whether the software meets the criteria in accordance with purpose or not. As for the testing method used in this software is perangkatl black-box method. Black-box testing focuses on the functional requirements of the software. Black-box testing methods it consists of two stages of testing that is the stage of alpha testing and beta testing stages.

2.5.1 Alpha Testing

Alpha testing is testing the functional development environment, held in by a set of users who will be using the software. Construction of the party stood for and noted those errors or problems perceived by the user. alpha testing is done on *simulation applications development multimedia interactive and procuderes learning provide red cross youth (pmr) level wira first aid based android, i.e. scenario test cases and test results as well as the conclusion of testing.*

2.5.1.1 Testing Scenario

Scenario testing exposed the sequence and it tested testing was done on the "Simulation Applications Development Multimedia Interactive And Procuderes Learning Provide Red Cross Youth (PMR) Level Wira First Aid Based Android". As for the scenario that is done can be seen in Table 2.

Table 2. *Test Scenario PMR Members*

Test Components	***Testing Scenario***	***Types Of Test***
Openning Of The Menu	*Select :Sign In" Button*	*Black Box*

2.5.1.2 Case And Result Test

The following is the case to test the software already built using the method based on the black-box testing scenarios table 3 have been made before.

Table 3. *Case And The Result Of Testing The Menu Opening*

Cases And Test Results (Normal Data)			
The Test Scenario	***The Expected Results***	***The Observations***	***The Test Results***
Select "Sign In" Button	*Display the menu "Home"*	*Enter the menu "Home"*	*[√] Successfully [ ] Not Successful*

2.5.2 Beta Testing

Beta testing is the testing that was done objectively where testing is done directly to the respondent by way of providing a questionnaire or interview on the prospective users of the software to be built.

2.5.2.1 Interview

The interview was conducted on users who have their user admin types. As for the results of the interviews have been conducted with Mr. Drs.H.Aep Rusjaman Kartiwa, M.Si, as prospective users with the admin user types. Below is a table of questions and answers interview with admin can be seen in Table 4.

***Table 4.** Interview With Admin*

No	Questions And Answers
1	**Question:** *Is this application is easy to use?*
	Answer: *Pretty easy to use, because it is an interesting and interactive tampilanya which does not deny the application to use.*
2	**Question:** *Does this application gives the knowledge about the how to give first aid?*
	Answer: *Yes, because through this application the members of PMR knowing the material and how to give first aid.*
3	**Question:** *Whether this application can be used anytime and anywhere?*
	Answer: *Yes, because this application is easy to use by members of PMR anytime and anywhere.*

2.5.2.2 Questionnaire

A questionnaire given to some prospective users of the software to be built. questionnaire be tested to 20 the members of PMR in Sukatani-Purwakarta example the taking of the sample.

***Table 5.** Result Of Questionnaire PMR Members*

No	QUESTION	ANSWERS				
		SS	S	RG	TS	STS
1	Is this application is easy to use?		13	7		
2	Does this application gives the knowledge about the how to give first aid?	2	17	1		
3	Whether this application can be used anytime and anywhere?	1	15	4		

The following percentage of the results of the questionnaire questions the members of PMR:

1. *First Question*
   Is this application is easy to use?

***Tabel 6.** Percentage Of Questionnaire PMR Members Questions First*

Question	No	Description	Answers Of The Respondents	Score	Percentage (%)
1	1	Sangat Setuju	0	0	**(73/100) *100%= 73**
	2	Setuju	13	52	
	3	Ragu - Ragu	7	21	
	4	Tidak Setuju	0	0	
	5	Sangat Tidak Setuju	0	0	
Total			**20**	**73**	

The results of a percentage of the first question is as much as 73% of the respondents with 20 members of PMR from 100% expeccted. Thus the calculation value means the members of PMR agrees that this application is easy to use. The following scale of assessment results the first question indicated in Figure 6.

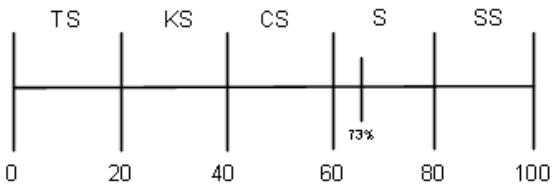


Figure 6. *the first Question the results Scale*

2.5.3 Conclusion The Results Of The Testing

1. *In Conclusion Alpha Testing*
   Based on the results of the alpha testing with test cases using the method of Black-box then can be drawn the conclusion that the Simulation Applications Development Multimedia Interactive And Procuderes Learning Provide Red Cross Youth (PMR) Level Wira First Aid Based Android there is no error processes and functionally running as expected. But it does not cover the possibility of errors can occur at the time the application is used in the real environment..
2. *In Conclusion Beta Testing*
   Based on the results of the beta test can be taken in conclusion, namely:
   a. *From the result of interview with admin in the organization PMI Purwakarta, it can be concluded that the application of this learning is easy to use, provide knowledge about how to provide first aid and can be used anytime and anywhere.*
   b. *From the results of a questionnaire given to members of PMR, it can be concluded that the members of PMR argues strongly agree that application it gives knowledge about how to give first aid. As well as the members*

of PMR argue agree that this application is easy to use and can be used anytime and anywhere.

CONCLUSION

After going through stage – the stage of analysis, design, implementation to testing, it can be inferred that from research entitled "Simulation Applications Development Multimedia Interactive And Procuderes Learning Provide Red Cross Youth (PMR) Level Wira First Aid Based Android" to provide convenience to members of PMR in understanding the material and procedures for providing first aid PMR level wira based android anytime and anywhere.

In the Simulation Applications Development Multimedia Interactive And Procuderes Learning Provide Red Cross Youth (PMR) Level Wira First Aid Based Android still far from perfect and said there were still many shortcomings. Therefore, the need for development and refinement to meet user needs are growing. As for the suggestions to the development of applications that have been built in the future are as follows:

1. *The choice of colors for the application to be seen in contrast, font size in the application enlarged for easier reading.*
2. *The addition of the way delivery of material that currently only text-shaped into the form of file.pdf, that is equipped with multiple images.*
3. *Need additional simulation and additioanal evaluation questions.*

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