Design of Learning Media Graphic Design through Android Technology-Based

Asrul Huda, Nelda Azhar, Almasri, Radinal Fadli

Abstract: ***Based on observations implementation of learning Graphic Design indicated only limited by using print module media, with lecture methods and guided practice and have not used learning media with android technology. This study purpose to improve student learning by: (1) Producing learning media Graphic Design based through Android Technology. (2) Producing Graphic Design learning media through Android Technology -based that valid in Informatics Engineering Education Study Program, Faculty of Engineering, Padang State University. This research is a Research and Development Research. This study refers to design of development research with 4D development model. This 4D model consists of 4 stages, namely, Define, Design, Develop, and Disseminate. Validity test analysis applied by using validity coefficients Akik v. The results of this research are learning Graphic Design through Androidtechnology -basedthat valid with validity value 0.835 for media aspects and 0.863 for material aspects. The result is developed media is state valid so that it can be used for learning graphic design in Informatics Engineering Education Study Program, Faculty of Engineering, Padang State University.***

Index Terms: Graphic Design; Android technology; Learning Media

I. INTRODUCTION

Education is a conscious and planned effort to realize learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and State (Law No. 20 of 2003). Based on Education For All Global Monitoring Report 2012 issued by UNESCO every year and contains the results of monitoring global education, from 120 countries Education Development Index (EDI) Indonesia in 64th position. The results of PERC (Political and Economic Risk Consultancy) survey and UNDP (United Nations Development Program) stated that the Education system in Indonesia was in worst position in Asian region (from 12 countries surveyed by PERC). This shows that the quality of education in Indonesia is low.

The indication low quality of education in Indonesia also find in average learning result that still low so that there needs an effort to improve learning result. One of way to improve learning result is to use learning media. Learning media are tools and materials used for learning purposes in an effort to improve learning result(Susilana, 2011). Educational media has a purpose to resolve various problems, including: communication problem, limited classrooms, passive student attitudes, less student observations, less specific nature of learning objects so it is not possible to learn without media, isolated learning places and so on.

Media is anything that can be used to transform messages from the sender to the recipient socan stimulate thoughts, feelings, attention and interests and attention of students so that learning process occurs. Media is important to be used in teaching and learning, because by using media, it expected to help teacher in teaching subject matter. Lecturers must be more wise and precise in choosing media will be used. One of most effective media used is electronic media, such as: computers, radio, OHP, and others. This media can also be used in certain places, such as in areas where there is electricity. In village areas where there is no electricity, the solution can be used by manual and simple media.

Based on the description that has been explained, researchers intend to develop and validate learning media of Graphic Design through Android Technology-Based in Informatics Engineering Education Program, Faculty of Engineering, Padang State University.

II. LITERATURE REVIEW

Android is a mobile telecommunications device that is widely used today. The mobile devices used as learning media is not a new one in education world, the use of mobile devices asmedia in learning process is often known as Mobile Learning (M-Learning). Mobile learning is a learning process carried out by utilizing features offered by mobile devices (Traxler, 2006). Android has several features such as large storage media, wide screen size, messaging, camera, video, multimedia, multitouch, multi tasking, flash support, and many others. All features that Android have, the teacher in teaching can use Android as media in delivering subject matter to students. Through this technology in learning process will become more interesting.

Learning media is always develop every year, because each media has weaknesses so that the use of new media discovery and development needs to be used. To achieve goals of learning curriculum in teaching and learning process it is necessary to support good media and teaching materials, namely teaching materials that are able to attract students' interests, in accordance with times and not appropriate with curriculum.

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Graphic design is defined as application of art and communication skills for business and industrial needs. These applications can include advertising and selling products, creating visual identities for institutions, products and companies, and graphics environment, information design, and visually perfecting messages in publications (Suyanto, 2009).

The abundance of features that can be run by Android, so thatlearning media through Android-based is appropriate to attract students' attention in learning, because nowadays smartphones have become the most popular gadget or device for various people, especially students. Besides that, learning media throughAndroid-based can be accessed only with one device that can be taken anywhere and can be seen at any time.

III. METHODOLOGY

A. Types of Research

This research used research methods and development. Research and Development is a process or steps to develop a new product or perfect an existing product, which can be accounted (Syaodih, 2011).

B. Development model

This study uses a development research design with 4D development model. This model consists of 4 stages, namely, Define, Design, Develop and Disseminate (Trianto, 2012).

C. Development Procedure

1) Defined

The define phase aims to defined learning requirements that include five main steps, namely needs analysis, student analysis, task analysis, concept analysis, and formulation of learning objectives.

2) Design

The design stage purpose to design learning media, the four main steps taken are: standards of test preparation, media selection, and preperation of beginning design (See Figure 1)

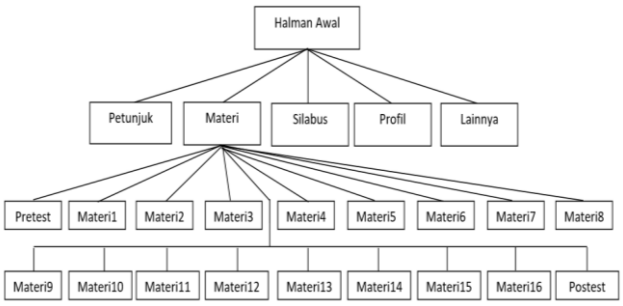

Fig 1. Structure of graphic design learning media applications

3) Development

The development stage purpose to produce a developed learning media, carried out through two steps: assessment of media experts and assessment of material experts.

4) Spread

The dissemination phase aims to spread products by promoting development products so that they can be accepted by users, whether individuals, groups or systems.

IV. RESEARCH RESULTS AND DISCUSSION

The research resultsthat have been applied are learning media Graphic Design through Android Technology-basedthat valid in Informatics Engineering Education Study Program, Faculty of Engineering, Padang State University. The following are design results of learning media Graphic Design through Android Technology-based.

A. Homepage

The start page displays an icon animation that describes the material to be studied. Then in this opening page there is also "continue" button that will direct the user to instructions page. (See Figure 2)

Fig 2 The initial page of graphic design learning media

The continue button script is as follows:

```
btlanjutkan.addEventListener(MouseEvent.CLICK,
fl_ClickToGoToNextScene);
function
fl_ClickToGoToNextScene(event:MouseEvent):void
{MovieClip(this.root).gotoAndPlay(1, "petunjuk");}
```

B. Instructions for use

Usage instructions menu that explains the function of each button on learning media so that it can help the user to run media. (See Figure 3)

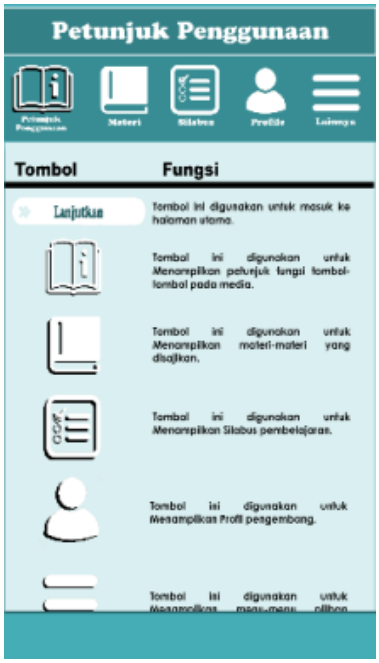

Fig 3. Instruction for use Menu

in instructions menu there is button togo to material menu, syllabus, profile and, more. The script button togo in menu is as follows:

```
btmateri.addEventListener(MouseEvent.CLICK,
fl_ClickToGoToNextScene_14);
function
fl_ClickToGoToNextScene_14(event:MouseEvent):void
{MovieClip(this.root).gotoAndStop(10, "materi");}
btsilabus.addEventListener(MouseEvent.CLICK,
fl_ClickToGoToNextScene_15);
function
fl_ClickToGoToNextScene_15(event:MouseEvent):void
{MovieClip(this.root).gotoAndStop(1, "silabus");}

btprofil.addEventListener(MouseEvent.CLICK,
fl_ClickToGoToNextScene_16);
function
fl_ClickToGoToNextScene_16(event:MouseEvent):void
{MovieClip(this.root).gotoAndStop(1, "profile");}
btlainnyapet.addEventListener(MouseEvent.CLICK,
clikloadmc);
```

C. Material

The material menu displays a selection of learning materials consisting 16 materials that students will learn (see Figure 4)

Fig 4. Material Menu

Script buttons to go in each materials are as follows:

```
btmat1.addEventListener(MouseEvent.CLICK,
fl_ClickToGoToNextScene_43);
function
fl_ClickToGoToNextScene_43(event:MouseEvent):void
{MovieClip(this.root).gotoAndStop(1, "materi1");}
```

D. Syllabus

The syllabus menu describes the competencies and material that students will learn with the Grafis design learning media through Android technology-based. (See Figure 5)

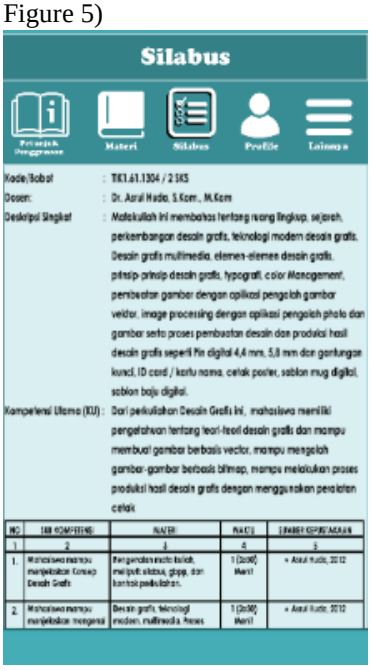

Fig 5 Syllabus Menu

E. Profile

Menu that describes theprofileof developers applications in Grafis design learning media through Android technology-based. (See Figure 6)

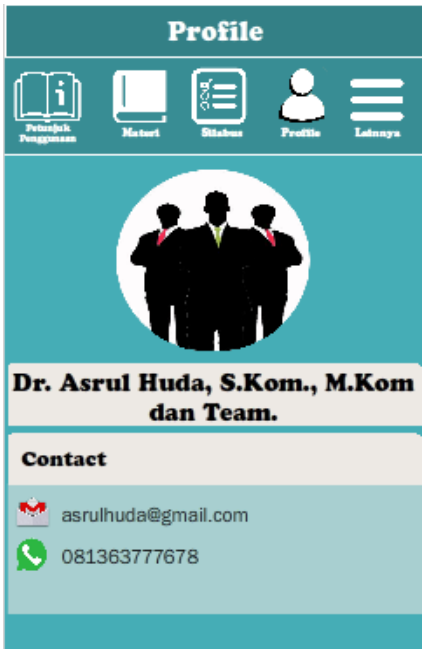

Fig. 6 ProfileMenu

F. Others

The other page is a page that displays some additional application services such as to download user guide, rating application on playstore, and to close the application. (See Figure 7)

Fig 7 Other Menu

The script buttons on other menu are as follows:

```
btdwpetunjuk.addEventListener(MouseEvent.CLICK,dwpetunjuk);
function dwpetunjuk(event:MouseEvent):void
{var url:URLRequest = new URLRequest("https://drive.google.com/file/d/1AmPfzMXkcLAJaHctZ3OMKXrsVSr37TiV/view?usp=sharing");
navigateToURL(url, "_blank");}
btkeluar.addEventListener(MouseEvent.CLICK,exit);
function exit(event:MouseEvent):void
import flash.system.fscommand;
import flash.desktop.NativeApplication;
fscommand("quit");
NativeApplication.nativeApplication.exit();
```

G. Data Description Test validity

The media that has been designed then validated. Validity was applied on media aspects and material aspects, media validity was analyzed by used Aiken's V validity coefficient. Aiken's V formula was used to calculate Content Validity Coefficient which was based on an expert panel assessment of n people on an item regarding the extent to which item represented measured (Saifuddin, 2014). The validity results test are summarized in table 1.

Tabel 1. Validation Results of Graphic Design Learning Media Through Android Technology-Based

No.	Validator	Koefisien Aiken's V	Classification
1	Media Expert	0.835	Valid
2	Material Expert	0.863	Valid

The analysis results of validity test by media experts obtained an average aspect of 0.835> 0.667, the validation results with material experts obtained an average of 0.863> 0.667. So, Based on results of data analysis, the learning media graphic design through android technology-based is declared valid.

V. CONCLUSION

Based on the research results on development of learning media graphic design through Android technology- based, the following conclusions are obtained:

1. This research has produced a learning media for graphic design through Android technology-based in informatics engineering study program on engineering faculty of Padang State University.
2. Learning media graphic design through Android technology-based that developed has been declared valid, with aiken's V coefficient of 0.835 for media aspects, and 0.863 for material aspects.

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Asrul Huda is currently working at, Universitas Negeri Padang. Indonesia, as Senior Lecturer. Experienced in Technical Vocational Education and Training, especially in Electrical Engineering, since 2010 until now. Currently has a degree of Doctorate in Universitas Negeri Padang. Indonesia. Research interest includes TVET, Multimedia Graphic Design, Educational Research. Having 17 Publications in Journals. Completed 12 projects and has a vast experience in the field of Multimedia and Graphic Design.

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