Mobile Multimedia Stop Drugs Tutorial Development

Hadi Sutopo
Faculty of Creative Industries
Institut Teknologi dan Bisnis Kalbis
Jakarta, Indonesia hadi.sutopo@kalbis.ac.id

Ridha Sefina Samosir
Information System
Institut Teknologi dan Bisnis Kalbis
Jakarta, Indonesia rhida.samosir@kalbis.ac.id

Abstract - This research is intended to develop a mobile multimedia based stop drugs tutorial. The information as a campaign to stop drugs that should be understood by people and those who want to leave his/her drugs addicttion. Stop drug information was created using a combination of ADDIE instructional development method and Multimedia Development Life Cycle (MDLC). During the Assembly stage of MDLC, the mobile application was created using Adobe Flash that was equipped with ActionScript 3.0 programming language. The research subject was "Stop Drugs" application that could be downloaded from Google Play. The data was collected through online questionnaires that were build using Google form. The research findings indicated that the mobile application should be provided with database and map on the future version.

Keyword : *drugs, education, mobile, multimedia*

INTRODUCTION

Learning is very important for human life from his/her birth till the end, because of the neccessity to adapt the environmental changes, information and knowledge should be gained every time [1]. The fast development of digital technology impacts the using of mobile applications for variety purposes, including learning, information, campaign, advertisement, etc. Using together multimedia elements in a mobile application such as images and animations that are provided with sound, video clips, and text, will be able to give clear meaning to those who need it. Vaughan stated that multimedia can bring radical changes in the learning process, from passive student learning to active student learning [2]. So multimedia can be used to inform young people that drugs is harmful for their health.

There is the fact that some of young people are used to like smoking, drinking alcohol or taking drugs. Many affects to their body, young people know that these potentially harmful substances are bad for them which make them even more attractive. They understand that it is risky and frowned upon by adults, but drugs make them feel happy, comfortable, and brave. Young people do not care that the addiction will damage their health in the future [3].

This research is intended to develop a mobile multimedia application particularly for informing that drugs harm the health and damage young generation, and then evaluate it whether achieves the objective and useful for young people. This application can be used by people especially young generation to understand how drugs are dangerous and harmful. By learning through running the mobile application, it is expected to enhance people avoid the drugs environment and the instruction for someone who is in a situation involved to drugs abuse.

A research by Powel [4] presented that many criminal offenses were affected by heroin and cocaine. Some evidence found that increasing violent crime could be caused by drugs. "The National Criminal Victimization Survey perceived more than one fourth of violent criminal assailants to be under the influence of alcohol and drugs. Most of the drug-users used to be violent economic criminal in order to support their expensive habit.

A. Drugs

World Health Organization (WHO) defines drug as a chemical substance of synthetic, semi synthetic or natural origin intended for diagnostic, therapeutic or palliative use or for modifying physiological functions of human and animal. Drug impacts directly influence social aspects of a country and physically to a human body. The drug addicted people are from all society levels. It can be understood that the world is going to be transformed into potential users of drugs with the rapid increasing of addiction. Drug addiction has grabbed not only the youth but the social leaders also. Maintaining a stable and drug-free society, people need to strengthen family and social values and religious ethics. [5]

B. Multimedia

Multimedia is a combination derived from multiple and media, while digital multimedia as any combination of text, graphic (still and animated), sound, and motion video delivered to the user by a computer [6]. Multimedia systems are used in education, presentations, information kiosks, and gaming industry. The power of multimedia allows users to interact with the some object in the application. Since interactivity is such a powerful concept, many experts in the field of multimedia consider interactivity as an integral part of multimedia.

Interactive multimedia supports the user ability to control the delivered elements and timing [7]. There are different devices to provide end-user interactivity, and almost all tools today support the use of keyboard, mouse, button, and even touch screen. Buttons are on-screen objects that will produce some response when the end user clicks the mouse or touches them.

METHOD

There are two kinds of method that are used in this research. The first method is developing stop drugs instruction or learning and then the second one is developing a mobile multimedia based application. This

research uses a combination of ADDIE model and Multimedia Development Life Cycle (MDLC) [7] as can be seen in Figure 1.
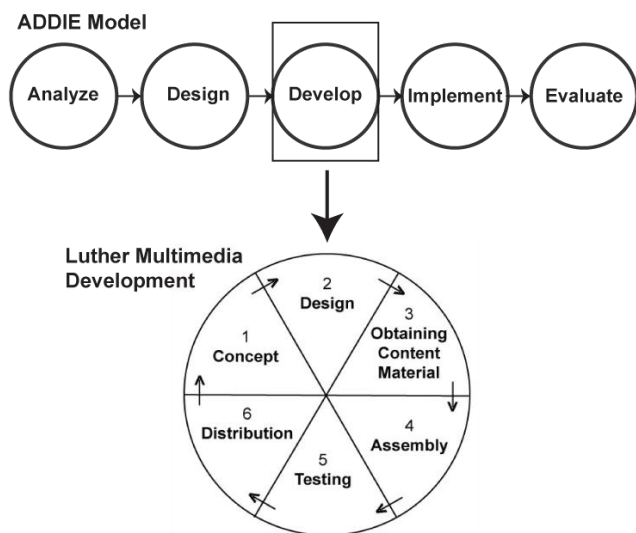

Figure 1. Research method combining ADDIE model and Multimedia Development Life Cycle according to Luther

A. Developing Stop Drugs Instruction

Designing the tutorial was required to gain a good product, so that the learning process became more effective and efficient. Different model of instructional design including ADDIE, Dick and Carey, Hannifen and Peck, Knirk and Gustafson, Jerrold Kemp, and Gerlach & Ely have developed. Although many instructional design models exist, they all contain five generic phases. These are analyze, design, develop, implement, and evaluate [8][9]. ADDIE model can be described in Figure 1 as follows: (1) *Analyze*. The objective of this paper is defined, introducing drugs impact information, content of information, audience and infrastructure; (2) *Design*. The interface design and algorithm that will be used in the tutorial are developed. Storyboard and navigation structure can be used to describe the project; (3) *Develop*. During the Develop step of ADDIE, Multimedia Development Life Cycle is used to guide what the researcher should do make a product. **[10]**. The overall of the project is built, the drugs impact information is assembled using Adobe Flash that is bundled with ActionScript programming. The application is run in the Testing phase and checked to confirm that it performs exactly what the author has intended. The system is tested to fix all the functions of application work well. After the functional testing, the application must be run on variety mobile devices; (4) *Implement*. During this step, the application is reproduced and delivered to audience for their use on their mobile devices. The distributed application file should be run on mobile devices; and (5) *Evaluate*. The application must be evaluated whether it can increase people's knowledge. This section presents method of tutorial and testing development that is used in this research.

This research is done using ADDIE model the 3rd steps that is called Develop that the product is build using Multimedia Development Life Cycles (MDLC).

B. Developing Mobile Multimedia

Multimedia Development Life Cycle (MDLC) [10], is a typical multimedia systems development, may involve the following six major steps presented in Figure 1, as follows: (1) *Concept*. The objective for the project is defined, and the type of the application is specified. The mobile multimedia based stop drugs tutorial was an interactive mobile application for all users with variety ages; (2) *Design*. This is the process of deciding in detail what will be in the project and how it will be presented. This stage includes script writng, visual design, making navigation structure and some design that is needed; (3) *Obtaining of content material.* Developer collect all multimedia object, such as images, musics, videos, and animations, that can be used for the application; (4) *Assembly.* The overall of multimedia application to inform how stopping drugs and solving its problem are generated using Adobe Flash with ActionScript 3.0; (5) *Testing*. The application is run and checked to confirm that it performs exactly what the author has intended; and (6) *Distribution*. Application is uploaded to Google Play for accessing by users.

DISCUSSION

A. Instruction Development

To illustrate how to develop multimedia application that contains information and problem solving for addicted people, there were two steps development. The first development was to define the learning objectives with its tutorial using ADDIE model, and the second one was developing multimedia application using MDLC. The tutorial involved many topics such as Overview, Category of Drugs, Drugs Effect, Detection of Drugs Addiction, Role of Society, Aspect of Law, and Rehabilitation. Developing learning material should based on the constraint and interaction between audience, content, and media [11].

The aiudience ot this tutorial was young people that was known as Gen Z. Some characterize the Millennials by their technological empowerment and preference for multitasking, more than any other modern generation, Gen Z students learn by observation and practice and not through reading and listening. Their ability to obtain information from online sources seemed impressive, thus, keeping the attention of the student and developing higher order thinking skills were critical components of successful teaching [12].

B. Multinedia Development

The second development used MDLC, starting by Concept as the first step that adapted the result of first development using ADDIE model. After all the aspect of learning was complete, in the second step that was called Design, a navigation structure and storyboard was created. Storyboard could establish lateral thought processes, helping to break down the navigation structures that were usually embedded in traditional approaches to course delivery. It provided for identifying relationships between the components, while navigation structure was essential to design an interactive multimedia application. The third step that was known as obtaining of content material, was the phase where all the data, audio, video and images for the project were collected in appropriate digital formats.

During Assembly, the fouth step, authoring application and ActionScript programming was done to develope a mobile multimedia application. ActionScript is the programming language that enables programmer to use Adobe Flash to create highly interactive, multimedia-based Web sites, product demos, teaching materials, and more [13]. ActionScript is a language that bridges the gap between what we understand and what Flash understands. Like all languages, ActionScript contains many different elements, such as words, punctuation, and structure - all of which programmer must employ properly to get the Flash project to conduct the way he or she wants it to.
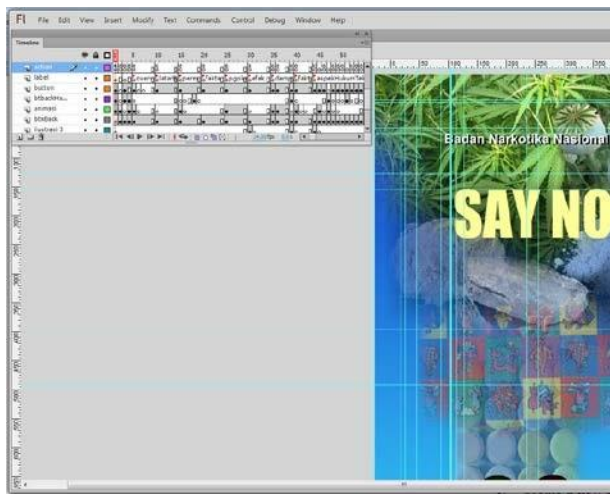

Figure 2. Stage of Flash document

Developing the application in Flash as can be seen in Figure 2, take the following steps:

1. Create a new Flash document.

2. Create animated title "Stop Drugs".

3. Create a button to be used for entering to the tutorial by first displaying the table of content, and a button to be used for exit the application. The buttons need frame script as follow:

```
on (release) {
stop();

import flash.media.SoundMixer;

SoundMixer.stopAll();
var    globalNews3DSound:globalNews3D    =    new
globalNews3D(); globalNews3DSound.play();

btnEnter.addEventListener(MouseEvent.MOUSE_DOWN,
mouseDownHandler1);
function    mouseDownHandler1(event:MouseEvent):void{
gotoAndPlay(2);
}

import    flash.events.TouchEvent;
import
flash.desktop.NativeApplication;

Multitouch.inputMode =
MultitouchInputMode.TOUCH_POINT;
btn_exit.addEventListener(TouchEvent.TOUCH_END,
exitApp);
function exitApp(event:TouchEvent):void {
    NativeApplication.nativeApplication.exit();
}
```

4. Select Control > Test Movie to run application.

The application needed many animated text and image that were created in Flash document. A sample of animated image can be seen in Figure 3, should be done as follow:

1. Create a movie clip symbol and then import an image into its stage.

2. Click the image or frame 1 > Insert > Timeline > Classic Tween.

3. Click frame 40 > Insert Keyframe. Then move the image to new location and scaled to be larger.

4. Click back the image at frame 1. Click Windows > Properties > Properties. In the category COLLOR EFFECT, select Alpha and give the value 20%.

5. Create new Layer and make keyframe at frame 40. Then create script stop() at the frame to make the animation stop at frame 40.
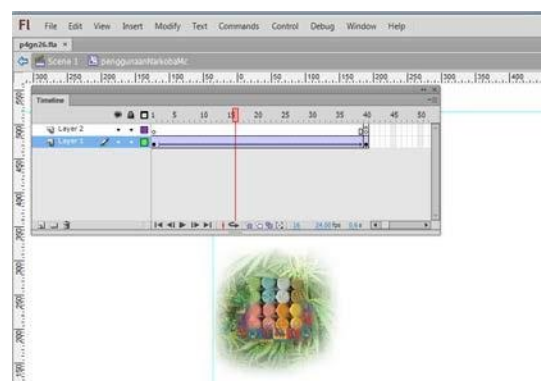

Figure 3. Creating animated amage

C. Testing

The fifth step of MDLC was Testing, the application was run and checked to confirm that it performed exactly what the author had intended. In the application, this was similar to screening, where the application or parts of it were viewed. The next Flash movie demonstrated the running of stop drugs tutorial as can be seen in Figure 4. The testing was done to confirm that the application was worth to be used at any kind of resolution and product of mobile devices.

Audience could fill the questionaire and gave comment according to their sight. There were many factors to evaluate the application as can be seen in Figure 5. Learning Content represented the content of tutorial such as Overview, Category of Drugs, Drugs Effect, Detection of Drugs Addiction, Role of Society, Aspect of Law, and Rehabilitation. As a multimedia based instructional evaluation [14], it breaks into several variables, that can be seen in Figure 5. Multimedia Object contained text, images, audio, animations, and videos, were evaluated by audience about the properness, quality, and interesting. An image was evaluated whether it supported the knowledge, the quality of image could be indicated that the image was clear and sharp, and should be intersesting. While Link and Access provided the evaluation that was given by audience about how the application easily was. Data was collected through online questionnaire that was build using Google form. The research findings indicated that the mobile

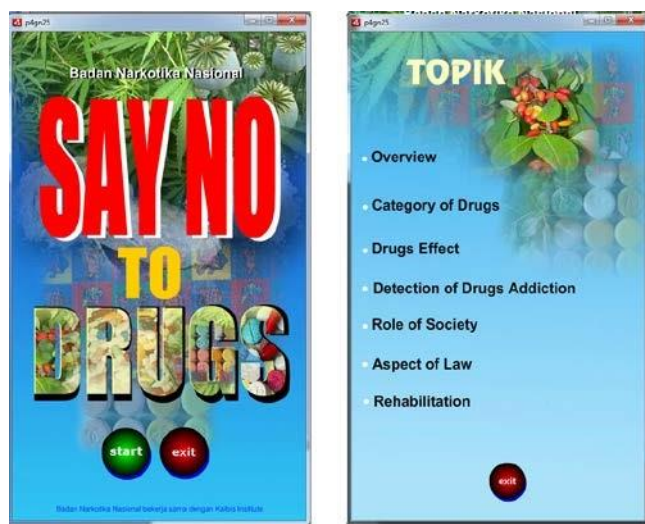application should be provided with database and map for the future version.

Figure 4. Flash movie run Stop Drugs Tutorial

Figure 5. Several variables of multimedia evaluation

D. Distribution

After the mobile game had been revised, the next step was uploading APK format file stop drugs tutorial to Google Play. People then could access the application as follow: (1) Open Play Store on mobile device; (2) Search by inputing text "ariesto artipena"; (3) Select the icon "Stop Drugs"; (4) Then install the application on mobile decice: and (5) After it was installed, klik the icon Stop Drugs to run the application.

CONCLUSION

Through this paper the development of stop drugs tutorial based on mobile multimedia has been presented, and especially using Flash with ActionScript programming to make animated, colorful, an unteractive application. The application ccould be accessed by downloading from Google Play. Some details about stop drugs tutorial that should be understood by people, how dangerous was to use drugs in their life. Online evaluation by users was done through quetionaire that was built using Google form, indicated that the application was good and they said that the application could be improved. Future research should be conducted to improve this mobile application by providing with database and map, and should be done including Implement and Evaluation phase.

REFERENCES

[1] Fischer, G. "Intelligent Systems/Tools In Training And Life-Long Learning", International Journal of Continuing Engineering Education and Life-Long Learning, [Online]. Accesed on September 9, 2016.
Available:
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.39.6714&r ep=rep1&type=pdf

[2] Vaughan, Tay. (2006). Multimedia Making It Work. Yogyakarta: Andi Publisher, pp. 234-246.

[3] Medic8. Young People and addictions - Drug Addiction, [Online]. Accesed on May 11, 2016. Available: http://www.medic8.com/drugaddiction/young-people-and-addictions.html

[4] Powel. M. A. Comprehensive Analysis of the Drug-Crime Relationship. Southern Illinois University Carbondale, [Online]. Accesed on February 27, 2012 Available: http://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1059&cont ext
=gs_rp

[5] [5] Shemul, H. T. The Impacts of Drugs on Young Generation of Bangladesh, [Online]. Accesed on August 16, 2016. Available: https://www.modernghana.com/news/211261/the-impacts-of-drugson-young-generation-of-bangladesh.html#

[6] Sfenrianto. A Model of Adaptive E-Learning System Based on Student's Motivation. Proceedings from ICCIT-09: International Conference on Creative Communication and Innovative Technology, 2009. Tangerang: CCIT Journal, 2009.

[7] H. Sutopo & W. Pamungkas. Developing Mathematics Mobile Game to Enhance Learning for Children in "2017 IEEE International Conference on Computational Science and Engineering (CSE) and IEEE International Conference on Embedded and Ubiquitous Computing (EUC)", Gungzhou, China, 21-24 June 2017. Available at https://ieeexplore.ieee.org/document/8005793/.

[8] Taylor, L et al. (2007). Educational Instructional Design Theories and Models. Place their and Simulation, p. 3, [Online]. Accesed on April 3, 2009. Available: http://www.siaa.asn.au/get/2396672209.pdf.

[9] Aldoobie, N. "ADDIE Model", American International Journal of Contemporary Research, Vol. 5, No. 6, December 2015, pp. 1-6, [Online]. Accesed on August 15, 2016. Available: http://www.aijcrnet.com/journals/Vol_5_No_6_December_2015/1 0.p df.

[10] A.H. Sutopo. Teknologi Informasi dan Komunikasi dalam Pendidikan. Yogyakarta: Graha Ilmu Publisher, 2012, pp. 128-129.

[11] T.R. Guskey. Mastery Learning. International Encyclopedia of the Social & Behavioral Sciences, 2nd edition. New York: Elsevier, 2015, pp. 752–759.

[12] R. Swanzen. Facing the Generation Chasm: The Parenting and Teaching of Generation Y and Z. International Journal of Child, Youth and Family Studies, Vol. 9. No. 2, 2018, pp. 125-150

[13] D. Ypenburg, Visual Quickstart Guide ActionScript 3.0. Berkeley, CA: Peachpit Press, 2014, p. 1

[14] H. Sutopo. "Pengembangan Model Pembelajaran Pembuatan Aplikasi Multimedia Khususnya Puzzle Game pada Mata Kuliah Multimedia," Ph.D. dissertation, Prodi Teknologi Pendidikan, Universitas Negeri Jakarta, Jakarta, Indonesia, 2009.