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The Improvement of Learning Media in Batik Technology Using Adobe Flash

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***Abstract*—This research was aimed to 1) improve learning media using Adobe Flash in Batik Technology course as an instructional form for The Fashion Design Education program, 2) know the feasibility of the Adobe Flash as a learning media Batik Technology course. Using R&D (Research and Development) approach, this research was completed by modification of the Improvement Stage of Slotnick (1986: 218 – 232) and Szymanski (1988: 148). Media improvement was completed by three steps i.e. 1) Need analyses, 2) Product design, and 3) Evaluation. This improvement effort was done due to the Adobe Flash has not used for learning media of Batik Technology. As data resources, samples were determined by purposive sampling method, by 5 persons for small group and 20 for large group. Data analysis was finished descriptively using numeral percentage. The research results were 1) Learning media of Batik Technology which has improved by Adobe Flash Cs4 in accordance with the learning need and syllabi, 2) Learning media of Batik Technology was validated by media and content experts and was declared worth in content, feature, and programming. The media expert have assessed and stated that the media was very reasonable (4,29) and content expert stated that the media was reasonable (4,00). Evaluation was done by limited feasibility test and trial widely. Limited trial was tested to small group resulted value 3,29 therefore the media was stated very reasonable. The evaluation continued by trial widely and got value 4,44 so the media was indicated very reasonable as well. Accordingly, we conclude that the improvement of learning media Batik Technology proper to use as learning media in Batik Technology**

Keywords—Learning media of Batik Technology, Adobe Flash

I. INTRODUCTION

Indonesian Batik was decided by UNESCO as a heritage of culture humanity on October 2, 2009, covering the technology and the motives. The value of batik culture was expressed in patterns, styles, and distinctive patterns that show the origin, history, social relationships, and the way of life of a society. As part of Indonesian traditional textile handicraft, batik is dependable strategic industry as the largest export product of non oil and gas sector *(www.bakrie-brothers.com/news)*. As a cultural heritage, batik is an invaluable asset, so it becomes a mutual obligation to maintain and preserve it. Batik handicrafts when handled and managed properly and professionally, has the potential and a bright prospect as a commodity of non-oil and gas exports (Pemda DIY, 2003).

Yogyakarta as a city of batik, well known both nationally and internationally. Yogyakarta as a local government committed to preserving and lifting batik as a commodity to penetrate global market. Batik is a work of art that can be widely used either as a fashion material or interior materials. In the history of batik has penetrated various times, because it able to adapt various influences that at the same time give a distinctive style of local culture. Various nations have developed batik art, such as Malaysia, Japan, India, China, and Thailand. However, the international community recognizes that Indonesian batik has historical value, cultural value and richness of decoration. Thus not excessive if batik was made an identity by Indonesian nation.

The Fashion Design Education Program, Faculty of Engineering, Yogyakarta State University conducts batik technology courses with 2 credits of practice to support the competence of graduates. Although as a practical course, learning is equipped with theory to support the practice with basic concept of batik, typical motifs of Indonesian batik, materials, tools, and various techniques of making it (write, stamp, and *colet*). Therefore, the theoretical learning needs interesting media, easy to use and in accordance with the demands of science and technology development.

Batik learning theory has used the worksheet as a media. Limitations of the worksheet as a learning media allegedly less interesting and challenging. Batik theory learning computer-based media using Adobe Flash software is very likely developed because the facilities are available. Computer-based media allows students to learn accordance to their ability and respective speed, can be used anytime, anywhere, and the content can be repeated many times. In addition, the appearance of computer-based media is more interesting because there are components of color, music, and animated graphics (Hujair Sanaky, 2009). Thus the achievement of learning becomes more optimal.

As the technology developed, the types of educational media becomes more varied and innovative. Azhar Arysad (2011: 29) classified educational media into 4, namely: printing technology, audio visual, computer, and print and computer combined technology. Technology is able to combine various media under computer control. Application of this technology is called CAI (Computer Assisted Intruction). The advantages of CAI for students are: 1) can learn according their ability and speed to understand of information, 2) can control the learning activities, and choose the sequence of learning activities, 3) can

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republish the necessary information, so that the effectiveness and efficiency of learning can be achieved , 4) can provide feedback, 5) can provide automatic learning result score, 5) integrate various components of color, music, animated graph (Hujair Sanaky, 2009).

Adobe Flash is a program which is designed by using professional standard authoring tool application program to create interactive and dynamic website animations and bitmaps. Flash has capabilities to create 2-dimensional animation, so that it widely used as animation on the website. This application can be used for animation logo, movie, game, website navigation, animation button, banner, interactive form stuffing, e-card, screen saver. In Flash, there are various animation making techniques, action script facilities, filters, custom easing and FLV playback facilities to include videos. Adobe flash software has advantages: 1) flash file end result has a small size after publish, making it easier to save the file; 2) able to import almost all image files from audio files so that presentations become more alive; 3) able to create file (*. Exe) so it can run on any PC without having to install first; 4) the presentation font will not change though the PC, so the presentation will run using any computer; 5) the operation is very easy. As for the lack of adobe flash software are: 1) there is an action script, a complicated programming language so everyone can not create the media; 2) the manufacture of media that takes relatively long time.

From the benefits have explained before, learning media using Adobe Flash software will be developed through this research. Utilization of media developed, is expected to increase the motivation and independence of students to study batik technology. Further, batik capabilities and skills can support the student's skills in the field of fashion while conserve the batik as a cultural national asset.

II. METHOD

Media development is done by two stages, developing media products and feasibility testing. The development model refers to Lee and Owen's procedures as:

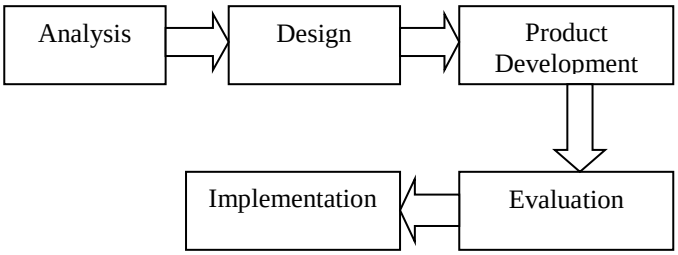

Fig. 1. Development procedure (Lee and Owen,2004:161)

Media development are done by following steps: 1) Analysis: analysis requirement is done to know what is needed to learning. Analysis requirement is done by observation in the field and through literature review 2) Design: Preparation of design product media. Media is designed to contain components: identity, video, images, subject matter, learning strategies, and references. While the design products media elements include: flow chart structure, storyboard, and image or animation elements 3) Development: is the production stage according the planned design. Assembling of various media elements into one media then it is ready to use; 4) Evaluation: conducted by asking the opinion from content experts and media experts. The next step is conduct a two-stage experiment in a small group trial with 5 students and a large group trial with 20 students. Based on the opinion of Arikunto (2002) to determine the number of large group trial samples was 20% of 102 students, obtained the number 20.4 and rounded down to 20 students; And 5) Implementation: Implementation of instructional media based on adobe flash cs4 on batik technology learning.

III. RESULT AND DISCUSSION

Research has produced learning media that have been tested. The learning facilities are available for Batik laboratory and Chemical Laboratory. The laboratory is supported with sufficient equipment for 20 students.

A. RESULT

1. The development of learning media for batik technology
   Stages of learning media development are:

   a. Analysis

   The requirement of learning media development is done by analyzing semester lecture plan (RPS), learning achievement (CP), media that have been used, and implementation of learning strategy. Other information related to more interesting material presentation and motivate student to learning. Achievement from the subject is a student can make a blouse / casual with batik tulis technique. Media that will be developed is expected to support learning achievement.

   b. Design

   Preparation of design begins with the identification of material according to the RPS. The source of study are taken from books, internet, and worksheet. The good media of presentation material will improve the user understanding. The collected materials are selected according to the RPS. Then, the display is designed, forming the program structure which is consist of materials, pictures, video, and storyboard making.

   c. Product development

   Products are developed with page creation and assembly, text writing, navigation button creation, image creation, animation creation, audio creation, and video creation. Learning media are produced using Adobe Flash, Adobe Photoshop Cs, and Adobe Illustrator Cs. The product is assembled with adobe flash program and supporting programs like adobe photoshop, adobe illustrator, and other supporting software.

   The content of batik learning technology media is shown as follows: 1) Main page; The main page consists of material menu, photo album menu, video album menu, usage instructions and music player menu. The main

page layout is arranged to attract the students; 2) Usage instruction: The instruction to use the batik learning technology media is expected to assist the user to learning media operation; 3) Main Content menu

The main content contains (1) the understanding and history of batik, and the types of batik motifs, (2) tools and materials for batik manufacture, and (3) the *batik tulis* making process.

Here is the main material menu view :

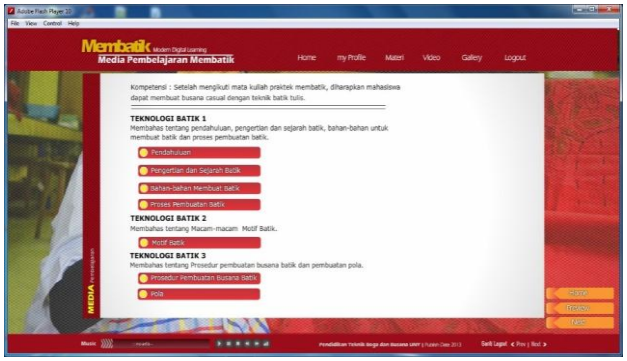

Fig. 2. Material menu view

Photo album menu contains about the photographs of batik technology with various techniques and image explanations.

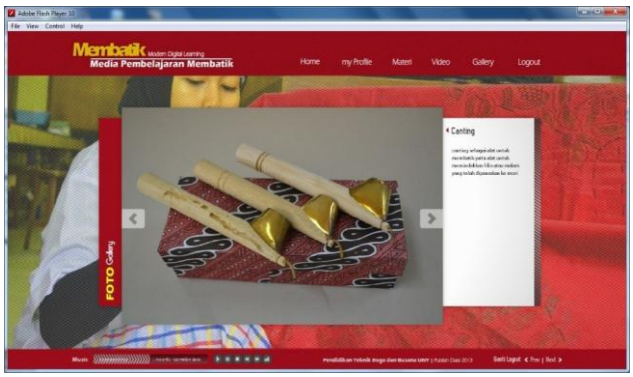

Fig. 3. Photo album view

Video album menu contains videos of making batik from design to *nglorod*. In the video gallery there are videos that can help students go deep into the material. Here is a picture of the video album menu view:

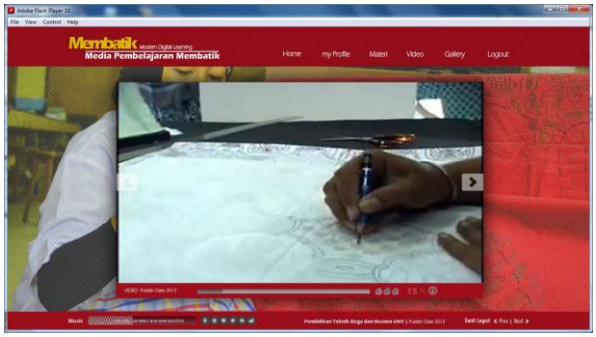

Fig. 4. Video menu view

In the creator profile there is a thank-you note to the helpful person and the author's profile which is includes name, photo, fashion design education program, faculty of engineering, email address, and date of making this learning media.

d. Evaluation

Evaluation have conducted to validate by requesting expert opinion to judge by using range of score 1 to 5. Experts who asked his opinion is a lecturer who handled batik technology course as a material expert, and 2 competent media experts. After evaluation and media has feasible declared then tested.

Small-scale trials were conducted on 5 students of batik technology who were selected randomly. The trials were enabled to determine the feasibility of media according to the students. If there were unproper things, they would be revised before being discussed in the larger groups. Large group trial is intended to determine the feasibility of batik technology learning media according to the assessment of batik technology course students.

2. Feasibility Media learning

To find out the feasibility of batik technology learning media there are several tests conducted, consist of:

a. Expert Assessment

Media experts who became the validator of this research is a lecturer of Fashion design Education. Data were obtained by giving a questionnaire that states the aspects of display and program. Assessment of media experts obtained an average score 4.29 with very good criteria. Thus the product is feasible to use. The first validator's suggestion is, compile the storyboard more details. The second validator suggested that the writing technique must be improved. The media has fixed in accordance with the suggestion and has declared eligible.

The material expert gives the judgments on the learning content. The results of the expert assessment of the material on the developed product of learning aspect obtained an average score 4 with good criteria so that no need to improve.

b. Trial Data

Assessment results from small group trials on display aspects and learning materials obtained an average score 3.92. The improvements after the trial is setting the location of the button so that it is easier to operate.

The results of the large group trial assessment on the aspects of display and learning materials obtained an average score of 4.44. After the pilot phase of large groups of the field can be concluded that the learning media is feasible to use.

B. DISCUSSION

The results of the assessment of media experts were analyzed and used as a foothold to revise the learning media products of batik technology developed. Assessment done on display aspect and programming obtained average 4,29. Based on the conversion to quantitative data onto qualitative data including the category is very good. In detail from the 18 items of indicators obtained: 5 indicator points (27.78%) is considered good, 13 point indicator (72.22%) is considered very good. Here is a graph of expert media judgment.

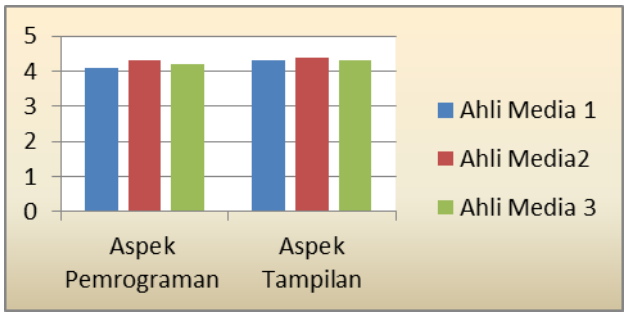

Fig. 5. Graph of media expert judgment

The suggestion of a media expert's validator is to complete the storyboard according to the number of files. The other correction has done is writing procces. Video impressions are fixed so that they are more adequate.

The result of the assessment of the material expert on the learning aspect and the learning material aspect has obtained by the average 4. Based on the conversion to quantitative data onto qualitative data including good category. In detail of the 16 items of indicators on the learning aspect and learning materials aspect obtained good judgment without revision.

Small groups assessment on the display aspect obtained an average scores 3.92. Based on the conversion to quantitative data onto qualitative data including both categories. In detail from the 25 points of the indicator is obtained: 1 indicator (4%) is sufficient, 2 indicators (8%) is very good, 22 indicators (88%) good. Based on observations we knew the student response in small group trials, enthusiasm in paying attention to learning is high. The motivation to learning is indicated by the desire to operate the media, although it is still difficult. The revision after a small groups trial is replacing the button and make it easier to operate.

Small groups trial results were analyzed and used to determine the feasibility of developed products. Assessment on display aspect and learning material obtained an average scores 4.44. Based on the conversion to quantitative data onto qualitative data including excellent category, 7 items (28%) with good assesment, 18 points (72%) with excellent assessment.

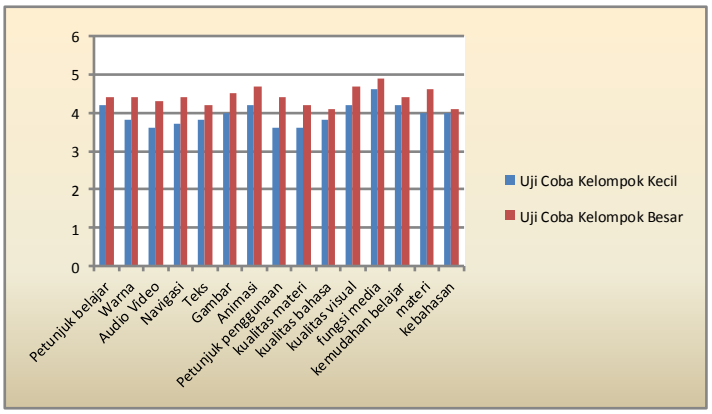

Fig. 6. Graph of assessment of small group and large group trials

Based on the observation of student responses, large group trials show that students are more concentrate using batik technology learning media. Moreover the students are more motivated to follow the learning process and don't meet the difficulties in the operation of learning media. Suggestions and comments on large-scale trials are: 1) Media, images, designs are very interesting and easy to understand; 2) the videos on this show are very interesting and can motivate the users; 3) videos are very helpful on the learning process and not boring; 4) increase learning insight; 5) is a good and interesting media; 6) explain the understanding of learning materials; 7) this media is very well used in the learning process, because it is very interesting.

IV. CONCLUSION AND SUGGESTION

A. CONCLUSION

Based on the data research results can be concluded, media improvement was completed by three steps i.e. 1) need analyses, 2) product design, and 3) evaluation. With the stages that has produced an interesting learning media product and proper to use it on learning batik technology subject.

The research results were 1) Learning media of Batik Technology which has improved by Adobe Flash Cs4 in accordance with the learning need and syllabi, 2) Learning media of Batik Technology was validated by media and content experts and was declared worth in content, feature, and programming. The media expert have assessed and stated that the media was very reasonable (4,29) and content expert stated that the media was reasonable (4,00). Evaluation was done by limited feasibility test and trial widely. Limited trial was tested to small group resulted value 3,29 therefore the media was

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B. SUGGESTION

In the development of learning media should be done by considering the stages procedurally starting from analysis requirement, making design, production, and evaluation. At the stage of the making design should be consulted to the experts because the results will be better. Once completed through the above mentioned stages, new learning media can be used widely. This learning media contain only one batik making technique, namely batik tulis. Therefore, in order to be utilized more widely, this learning media needs to be equipped with other batik-making techniques. However, developed media has been declared eligible to be used, so it can be used as a batik technology learning media courses.

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