DEVELOPING E-MODULE OF PATTERN CONSTRUCTION IN FASHION DESIGN STUDY PROGRAM AT STATE UNIVERSITY OF MEDAN

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Abstract

The learning program with the E-module construction is one of the good strategies in learning activity. So, knowing the development of e-module can provide benefits for knowledge, technology, skill, disciplinary attitude, and work ethics for students in the Fashion Design Education Study Program in dealing with the revolution 4.0. The first criterion is the aspect of student success in meeting curriculum demand and the achievement of graduates oriented to the working world like the success and competence of students on performance abilities in accordance with the standards of learning outcome. The research instruments used in the study were the student response instrument to e-module and learning outcome instrument. The data analysis technique used was descriptive and inferential statistical data analysis. Based on the results of the study, the use of e-module of pattern construction on competency has drawn pattern, changed pattern according to design, it obtained criteria score very well, the material expert gave the criteria 89,5 (very good) and media expert response gave 86,67 (well). The results of student response to the e-module of Pattern Construction in criteria was 90,54 (strongly agree). The module could attract attention, increase learning interest, increase motivation and presented attractive appearance. So e-module is stated to be effectively used as learning media for pattern construction. Student learning outcome on e-module of pattern construction with an average result was 81,25 (high category).

Keywords: *Development, Pattern Construction Module, Fashion Design, and State University of Medan*

INTRODUCTION

An electronic module or e-module is a display of information in book format that is presented electronically by using hard disk, CD, or flashdisk (Ardiansyah, 2016). In accordance with the development of era, teaching materials are not only from book but also can be taken from the internet or from other sources in the form of journals, articles and electronic books (e-books) in order can make it easier for students to access various materials to be studied. E-module (electronic module) is an electronic version of a module that can be read on computer and it designed with the necessary software. E-module is learning tool or tool that contains materials, methods, limitations and ways of evaluating that are designed systematically and attractively to achieve the expected competency according to the level of complexity electronically. (Wijayanto, 2016)

There are several factors that can affect student learning including, student internal factor, student external factor, and approach to learning factor, namely ethnic learning includes the strategy, model, and media used (Shah, 2009). The independent or internal learning model is useful to improve the constructivity that is constructed based on 4 stages of learning, namely: (a) independent, (b) interested, (c) involved, and (d) self-directed (Rahmana, 2016). Therefore, a teacher or lecturer who is able to make teaching materials are needed such as through the development of a website-based e-module that is suitable to use as a learning media (Taufik, 2018). In this regard, the lecturer has a role in the learning process, namely 1) as a learning resource, 2) as a facilitator, 3) as a manager, 4) as a demonstrator, 5) as a supervisor, 6) as a motivator (Sanjaya, 2010).

Achievement of student learning outcome that had not been maximized is due to the low learning outcome of self-construction pattern that include physiology, interest, talent, and motivation factor. In addition, external factors are often happen because learning model, learning media, learning facility and infrastructure, learning resource, approach, technique, tactic used during the teaching and learning process are not appropriate. However, based on the observation, the low learning outcome is due to lack of media use. Students are always conditioned to accept information as it is, so students become passive and wait to be given information without trying to find the information needed. This makes the learning atmosphere less attractive and communicative, so students are less motivated to learn and difficult to understand each step in Construction Pattern course.

Pattern Construction course is continuous learning from a complex whole with learning characteristic that requires students to do work step by step so as to realize the learning objective, for example for the basic drawing pattern that is done by utilizing media handout and only focus on lecturers when learning takes place. However, students have not been able to understand clearly and are unable to repeat the process correctly. Therefore, by guidance to conduct research and to make instructional media is very necessary. Referring to the acquisition of learning outcome, then to achieve the expected learning outcome, learning must be carried out optimally so all indicators are achieved. This is not only supported by lecturers who can create conducive learning for student. Improvements are also needed in the learning process so students are more motivated and more active in learning Pattern Construction in order students easily understand the material and improve learning outcome. One of the efforts that can be done is to use learning media. The use of instructional media is expected to help lecturers in delivering subject matter so learning activity can run effectively and efficiently and students can more easily understand the concept of pattern construction learning.

Learning media is defined as anything that can convey and channel messages from planned sources so as to create a conducive learning environment where the recipient can carry out the learning process efficiently and effectively (Munadi, 2011). Thus, the purpose of using media in the learning process is to make learning process to be effective and efficient. The use of instructional media allows students to adjust the speed in mastering learning unlike the direct learning method which generally makes the speed of understanding learning material determined by the lecturer, so it appears that instructional media is very influential in the effectiveness and efficiency of learni.

With the use of e-module, it is hoped that students will be easy to understand the material, so they will achieve the expected educational goal. The effectiveness of learning in the presence of e-module can be repeated at home by online because the module is a presentation of information in the form of integrated text, images and sound so it becomes effective and efficient (Handoyo, 2003). Module can stimulate the human senses and it is very influential on student learning outcome because approximately 90% of learning outcome is obtained through sense of visual, 5% through the sense of sound and the other 5% through other senses (Munir, 2008). Thus the display of the learning module that is packaged becomes more interesting because there are pictures of fashion patterns in it. Through the Pattern

Construction module, it is hoped that students' interest in learning will increase and be motivated to participate in learning.

LITERATURE REVIEW

a. Fashion Pattern Construction

Fashion Patterns is pieces of paper that is prototypes of clothing parts or sewing products. Pattern is a piece of cloth or paper that follows the size or shape of a particular body (Pratiwi, 2001). This statement is supported by the opinion of Muliawan (2002) which defines as pattern of sewing or as piece of cloth or piece of paper used as an example to make cloth when the material is cut. The pattern is used as an example so error do not occur when cutting fabric. Beside of using homemade pattern, people can sew at home by using ready-made pattern (finished pattern) published by women's magazine. Previously, the basic pattern could be divided into several types based on the manufacturing technique, parts, method and type.

While the basic pattern according to its parts can be divided into 3 types, namely: a) Basic Pattern of the Body, namely the body pattern starting from the shoulder, neck to waist. The basic pattern of the body is divided into two, namely the pattern of the front and back of the body, b) the basic pattern of the skirt, the basic pattern from the waist down to the knee or up to the ankle, and c) the basic pattern of the arm, namely the pattern of part upper arm to elbow, wrist or to the desired arm length limit (Pratiwi, 2001).

b. The Effectiveness of the Use of E –Module

Effectiveness is a learning process with regard to path, effort, technique, and strategy used in achieving goal optimally, precisely, quickly, and subsequently as a guide to the achievement of a goal (Sudjana, 1990). Thus explained that effectiveness shows more on specific result, namely effectiveness shows success in term of whether or not the target is achieved. For lecturers the effectiveness of learning is a measuring tool to assess the success of the teaching and learning process that has been done while students have an interest in knowing the effectiveness in order to measure how far students master the material taught by the lecturer. Lecturers must pay attention to various things that can affect achievement by conducting evaluation so they can know students' ability on how they received the material that has been presented.

Achievement of the objectives are in the form of increased knowledge and skill as well as the development of attitude through the learning process that educates through improving aspect of knowledge, skill, attitude, achievement and students' behavior. Accurate measurement of achievement is very important, because lecturers cannot help students effectively if they do not know the skills and knowledge mastered by students and what material is difficult and be the problem. Student achievement is intended in order knowledge and skill can be mastered by students as a result of experience. The factor that influence effectiveness include the ability of lecturers to use learning media (Surahhmad, 1994). The use of instructional media is influenced by factors of purpose, student, situation, facility and the teacher. The better and more appropriate the use of method and media, the more effective the achievement of the goal set, so it achieves better learning outcomes. Effective learning is determined by its use. Therefore, the learning process shows a high percentage of student involvement in the right time, then the achievement of goal is obtained with a good student attitude. Thus it can be said that the effectiveness of the learning objectives process right on target in accordance with the objective set.

The implementation of e-module is learning material that is designed systematically based on a particular curriculum and is packaged in a web-based electronic form and makes it easy to learn independently because it is can access online (Purwanto, 2007). The meaning of e-module is a kind of unity of planned learning activities, designed to assist students in achieving learning goal (Sudjana, 2002). E-module is utilized in order they are able to contribute in the context of improving learning outcome. Achievement of goal is an effect of how e-module is. According to Russell (1992) that the principle of e-module in learning activity can be used independently. Therefore, e-module is arranged in line with

competency standard and learning objective, thus the module is very realistic. The result of the study showed that e-module is effective to use in learning activities, it is evidenced from the student learning outcome that there is an increase result before student uses e-module. Students who learn by using e-module more motivated and the result is better compared to student learning outcome before using e-module (Sekar, 2016)

METHODOLOGY

This research used research and development (R&D) in the course of Construction Pattern of Fashion Design Education Study Program or the development of the Dikc and Carry Model. By conducting preliminary research which included: (a) identification of learning needed and determining subject competency standards; (b) conducting a learning analysis, (c) identifying student characteristics; and (d) writing basic competencies and indicators, (e) writing reference test, (f) developing learning strategies that are realized in the form of syllabus and learning design; (g) developing learning material.

The development steps were; 1) Potential and Problems; Research departs from the potential and problems that exist in learning, potential is something that when utilized can add value, 2) Gathering Information; shown factually, then information needs to be collected as material for planning the product, 3) Product Design, 4) Design Validation; is a process of activities to assess the product design, in this case is new teaching method rationally and effectively. Product validation is carried out by several experts to evaluate the product designed, each expert is asked to assess the design, so further weaknesses of the product can be identified, 5) Design Improvement; After the product design is validated with experts, it is known the weaknesses and then tested to see the weaknesses of the product to be repaired, 6) Product testing; product that has been developed is tested first to find out the weaknesses to be revised. 7) Mass Production; If the production is declared effective in further testing, mass production is carried out.

The instruments in this study include (1) questionnaire needs for lecturer and student, (2) questionnaire for material experts; used to obtain data about the quality of learning material and the aspect development of the learning delivery system, (3) questionnaire for learning design expert; used to obtain data about the quality of learning and technical design in the form of learning design of Construction Pattern, (4) observation test sheet; which is used to obtain data about the learning outcome of Construction Pattern. Data analysis was performed on the initial data obtained and on the data validation result of the initial product development by expert team. The data analysis technique used was descriptive data collection as it is without intended to make conclusions that apply to the public or generalization (Sugiyono, 2010). In e-module necessary analysis phase, researcher describes the material needs of the Construction pattern. In the validation phase of initial product development by expert, researcher describes the result of research and validation from experts of feasibility of learning design.

FINDING AND DISCUSSION

The result of the need analysis showed that from 3 lecturers (98%) answers that e-modules had never been developed, and the needs analysis data for 31 students of semester 1 at fashion design study program (51%) stated that they strongly agreed if e-module was developed for construction pattern learning. In basic competency, changing blouse pattern according to design, changing shirt pattern according to design, changing skirt pattern according to design, is the main subject in the pattern construction course.

The result of data from media expert and material expert on each aspect of the overall assessment are determined by the score, then analyzed to determine the feasibility of developing e-module. As for the percentage of the assessment result of media experts as follows: aspect of the appearance of e-module,

aspect of efficiency, and aspect of technical quality, the effectiveness of e-module is summarized as follows;
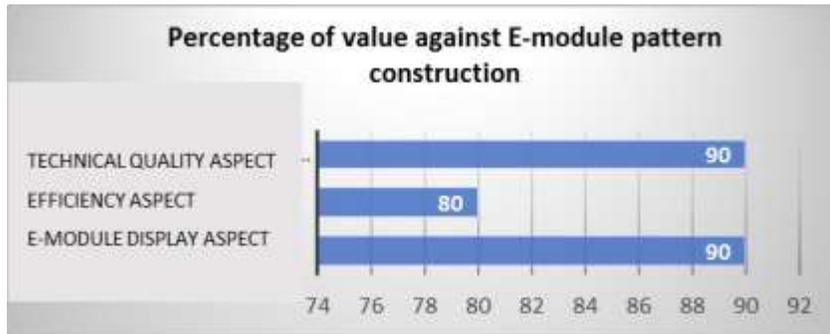

Figure 1: Percentage result of the assessment of the pattern construction E-Module.

Based on the assessment of the media expert, it is said that the development of the e-module construction pattern was very good and feasible to use in the learning process but there were some suggestions and input to improve the feasibility of the module product. The results of the analysis of suggestions and input put suggested by the media experts as follows: 1) Selection of the image is not right, 2) Need to add instructions for using e-module, 3) In the reference menu, it is better to not use the points for bibliography, 5) Adjust image layout, font and arrangement on e-modul product.
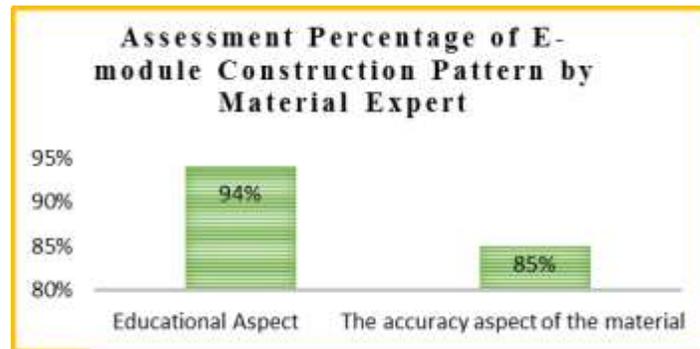

Figure 2. Percentage of E-Module Construction Pattern assessment by material expert

The expert content of the material said that the Pattern Construction E-module was considered to be very good and feasible to be used in learning activity,but there were some suggestions and input to improve the feasibility of the e-module product. The analysis of suggestions and input put suggested by learning material expert as follows: 1) The lines in the pattern are still less visible clearly in the application of drawing pattern, 2) The way of making pattern is good but the application is not right. 3) Before the pattern making application is displayed, the design analysis should be explained first.

The result of the analysis of small group trial data on each aspect of the overall assessment is determined from the average score in each category, then analyzed to determine the deficiencies of the e-module product.
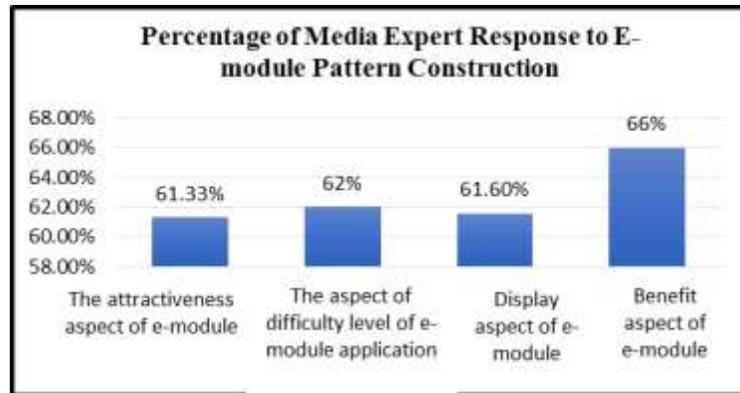
Figure 3. Percentage of assessment of Media Expert response to Pattern Construction e-module

The result of the assessment of the Construction Pattern E-Module showed that the product being developed was still in sufficient criteria so the development is continued in the group trial while in the second revision.
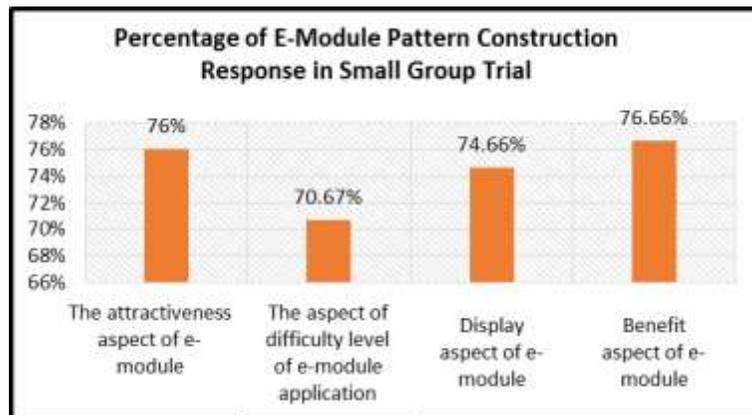

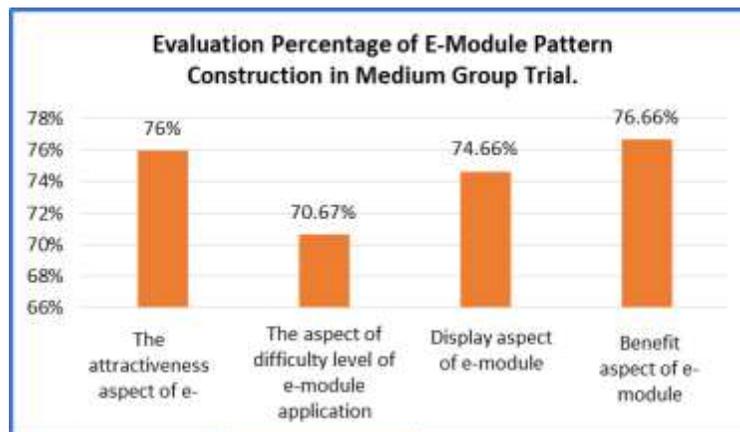Figure 4. Percentage of response to Construction Pattern E-Module in Small group trial.

Figure 5. Percentage of response to the Pattern Construction E-module in the Medium group trial.

The results of the assessment of the Pattern Construction E-Module as a whole were agreed so it could be continued in the field trial, which was conducted on 31 students who took the Pattern Construction course in each aspect of the assessment described in table 5 below.
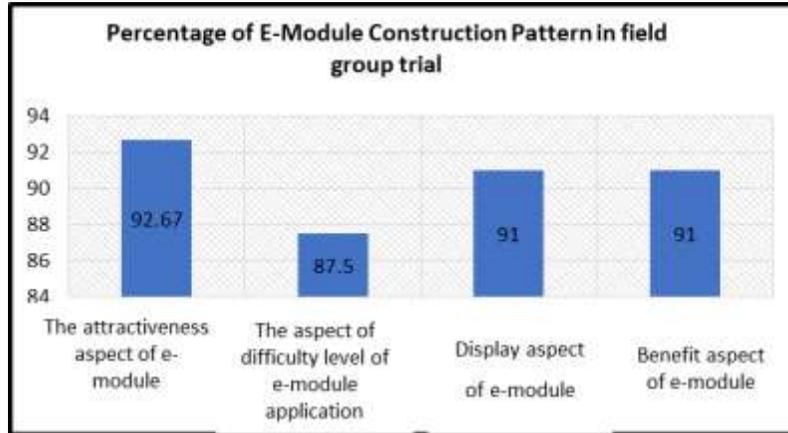

Figure 6. Average assessment of response to the Pattern Construction E-module in field group trial.

The result of the assessment of the development of e-module at Construction Pattern course in general with the value of response from students strongly agreed so there is no revision made. This can be seen from the small group trial, medium group trial and large group trial which have increased from student response in the figure below.
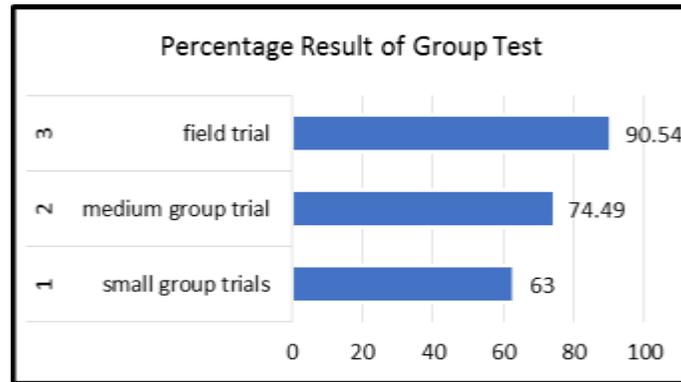

Figure 7. Percentage Result of Group Test

The result of the analysis of the effectiveness test data conducted to find out whether the product made was feasible to use as learning media or not. The effectiveness test is carried out on students and lecturers of Pattern Construction course. Based on the result of the analysis of the effectiveness of the test data on students and lecturers, it was concluded that the development of the construction pattern E-module to use in learning activity was very effectivel, so motivating students in learning led to increased learning outcome.

Table 1: The result of revised data from media expert

No	Comment	Suggestion for improvement
1.	Image selection must be good.	Changed the selection of pictures to make it looks clearer.
2.	Need to add instruction to use the module.	Added instruction to use the pattern construction e-module.

No	Comment	Suggestion for improvement
3.	Use clearer animated image and text.	Change the animation to make it clearer and in order students not confuse
4.	In the reference menu, it is better not to use bullet points for the bibliography.	Changed by using bullets.
5.	Adjust the layout of image, letter and the arrangement of e-module learning media product.	The layout of the image and writing is change to be clearer of material presentation.

Table 2: The result of revised data from material expert

No	Comment	Suggestion for improvement
1.	The lines of the pattern are less and clearly seen in the module result.	Display module result is enlarged and added to the color of the module.
2.	The construction pattern e-module is good but the letter in the module is too small, it should be enlarged.	Added button to the module application and at the learning process give students the opportunity to work on pattern according to time.
3.	Before e-module is applied to pattern making, an analysis of the design is explained first.	Added design drawing and analytical narrative to the e-module application before the pattern making process.

The e-module development stage is designed and produced the initial product in the form of the construction pattern e-module, with the steps for developing modules and an outline of media program, starting from determining the title, purpose and main points of the material, e-module drawing and design. One of the psychological principles in making media is content organization, (Arsyad, 2013). In this e-module, the content was to change the pattern according to the design, changed the pattern of the shirt according to the design, changed the skirt pattern according to the design. Furthermore, Asan Baker Kanbar (2018) explained that e-learning for students becomes a place of communication between student, teacher and family. When its effective usage can help students in learning difficulties of the material, making e-learning expensive, because the manufacturing process is expensive and must be trace (Huda Basloom, 2018 and Mazen Ismaeel Ghareb, 2018 and Syahril 2018). So in the development of e-module arranged in flow diagram, the order of presentation of learning materials starts from the core competency, basic competency, indicator, goal, learning outcome, tool and material to make pattern, the contents of the material from each sub competency, namely the basic pattern material, shirt pattern, skirt pattern, and blouse pattern, way of making pattern, evaluating learning and summary.

Based on the result of data analysis conducted, it is stated that the pattern construction e-module is included in a good classification, it meas that it is appropriate to be used as a learning media. The feasibility here is that e-module has met the characteristics of interactive multimedia. One of the characteristics of e-module is self instructional, this is to support the realization of production and efficiency target that must be met by the garment industry and the fashion industry in order can get maximum profit.

Clothing pattern is shape or picture of component or part of clothing based on predetermined size. In the picture, the pattern consisted of straight line, curved line, and other sign or image, such as button mark, dart mark, pleated mark, direction of the fiber (base line), etc. The pattern that needs to be considered is the grading point and curve point (Miyoto, 2011). It was concluded that e-module was suitable to use in the learning process of student pattern construction. This is in line with research conducted by Ampera (2015), in which the study developed learning pattern for pattern making, it is stated that learning media is appropriate as a learning medium.

CONCLUSION

The conclusion in this study included the developing module with material making pattern of competence changing pattern in accordance with the design. From the result of the validation by two media experts, it is obtained good criteria while the result of the validation by two material experts received good assessment and included as good material. The result of student respond about the pattern construction e-module was good and they strongly agreed that the e-module attracted attention, increased interest in learning, motivated students and looked interesting so the media is declared effective as a learning media used in construction pattern learning activity for students.

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