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Application of Project Based Learning Model (PjBL) in Learning Design Digital Based Batik Basic Motives at Vocational Schools

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Abstract

Early learning about the introduction of batik to students is very appropriate that batik is not forgotten. Learning the making of basic batik motifs in vocational school (SMK) students is a form of batik conservative activity for children. Learning in vocational students about making digital-based batik basic motifs is very appropriate because it is to equip additional hard skills when they graduate as one of the opportunities to work and become entrepreneurs skills. Learning models are needed in a lesson so that goals can be achieved. The appropriate learning model and in accordance with the characteristics of vocational or vocational education, namely PjBL. This model can provide learners with a learning experience in producing a work. In addition, as a learning support, a learning media is needed, the media used is the CorelDraw graphic design application software, which is a computer application software that can be used as a learning medium in making digital-based batik motifs. SMK students can create various types of basic batik motifs using this application software. The tools or menus contained in the CorelDraw graphic design application software are able to assist students in making basic designs of batik motifs. The results showed the effectiveness of the use of graphic design application software CorelDraw in the basic learning of graphic design class ten RPL expertise competency in making digital-based batik basic motifs using the PjBL model of 81.09%.

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INTRODUCTION

Batik is a handicraft made from white cloth with the desired pattern drawn by the maker. With several special processes, the batik cloth has various motifs and colors. According to Asti and Arini (2011) based on its etymology and terminology, batik is a series of words mbat and tik. Mbat in Javanese can be interpreted as ngembat or throwing repeatedly, while tik comes from the word point. So, making batik means throwing dots repeatedly on the cloth. There are also those who say that the word batik comes from the word amba which means wide cloth and the word dot. This means that batik is the dots drawn on a wide fabric medium in such a way that it produces beautiful patterns.

Batik is a handicraft product with high artistic value and has been part of the culture of the Indonesian State, especially in Java for a long time. In the past, Javanese women made batik skills by writing directly on a blank sheet of cloth and with the development of information technology, batik making was able to use the stamp / computer technique. According to Lisbijanto (2013) explains that there are three types of batik according to the manufacturing technique, namely: (1) written batik; (2) Stamped batik; and (3) Painted Batik. Hand-written batik is made manually by hand with the canting tool to imprint the night on the batik pattern. Stamped batik is made by using a stamp or some kind of batik motif stamp made of copper. A painted batik is made by painting a motif using a wax on a white cloth. Written batik is one of the batik techniques that has a batik process (written batik), skills in designing image motifs, if students use it, the batik process (written batik) will not be carried out properly. In making written batik, expertise and experience, thoroughness, patience, and a long time in the process are needed, Chairullah (2018).

Batik is a human heritage for the world's oral and non-material culture from the Indonesian nation which has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) since 2 October 2009. As the successor to the next generation, students should be able to recognize and learn how the batik process is made. According to Handayani, (2016) in his research entitled the influence of adolescent interest in the use of batik on the preservation of holy batik stated that from 72 respondents that the interest of adolescents in using batik towards batik preservation was seen from the interest variable obtained by a percentage of 84% while the conservation variable was 82.5%. These data indicate that the response to use in the form of interest and preservation of batik among adolescents is currently very good. However, according to Suliyanto, et al. (2015) stated that the younger generation does not want to become batik craftsmen because their income is uncertain, they do not have artistic taste, and do not have enough capital. These are also obstacles that must be overcome immediately so that batik is not put aside and will disappear in the future.

The younger generation or those who are currently millennials should be able to become the nation's next generation who are able to preserve batik as a cultural heritage of the Indonesian nation. According to Nurcahyanti et al, (2019), there are two methods of approaching the millennial generation to batik, namely a direct approach through social media socialization and digital applications and an indirect approach through the active involvement of the millennial generation in various forms of activities involving batik as a topic and supporting elements. Batik can increase the sense of water to the younger generation because they feel they belong and are proud of the cultural heritage of their own country. According to Suryaningsum, et al. (2019) states that the cultivation of a sense of love for Indonesian batik also contains elements of state defense, archipelago batik is one of the strengths of state defense so that it is important for state life. According to Damayanti, (2018) states that batik activities can increase children's artistic creativity. The value of creativity will increase when the child starts by making a batik pattern tau pattern as desired. The child will try

to draw some of the patterns or motifs that they want.

A batik cannot be separated from the batik making process itself. Batik craftsmen must have Human Resources (HR) so that they are able to produce quality batik. According to Widiastuti, et al. (2019) to achieve quality human resources for batik craftsmen, motivation, increased competence, skills certification, best practices and exhibitions are needed. The younger generation or what is often referred to as millennials today needs an insight into how to make batik motifs in order to increase human resources and preserve batik culture in the younger generation. Schools as educational institutions have an important strategy and role in the preservation of batik in the younger generation. School as a second home to gain knowledge on the need for academic and non-academic activities based on batik preservation. This wax drop batik learning can be used as an alternative to learning simple batik. Wax drop batik is a technique of making batik on cloth using wax droplets as a color barrier and a medium to produce a substitute motif for canting, Prayitno (2019).

Learning Basic Graphic Design in the 10 grade SMK Software Engineering Skills Competencies, teachers as educators can take advantage of learning activities as well as introduce and preserve batik to students. In learning Basic Graphic Design, students are required to be able to use the Garfis Design application software to create digital-based designs. Traditional batik skills can be given to students by providing computer graphic insights in making batik motifs, Photoshop graphic design application software can be used as a learning medium that can simplify and simultaneously utilize information technology in increasing student creativity, Ernawati (2015).

According to Suhud and Firtiansyah, (2017) states that by utilizing Photoshop and Adobe Flash Professional graphic design application software, you can create multimedia-based learning media in batik offering. The development of technology and information should be able to facilitate the making of batik motifs digitally. In the era of the industrial revolution 4.0, it is very appropriate to use technology and information as a supporting medium for making batik motifs. The development of the D'Batik application is able to increase the productivity of making batik motifs for IKM Batik Semarang actors. The D'Batik application has features that simplify the process of making batik motifs, including making lines, curves and repetitive motifs, reflections, and diamond drop patterns, Wibawanto and Nugrahani (2018). In addition, the learning media for batik in the form of educational comics with elements of stories, illustrations, materials and language styles for junior high school students also contain the values of attitudes, knowledge and skills about batik needed by junior high school students, Permatasari (2015)

The process of learning to make batik using graphic design application software makes it easier for students to make batik motifs. However, guidance, direction and motivation for students is very important given by teachers in Teaching and Learning Activities (KBM) in the classroom, Sunaryo and Rahmawati (2012). In addition to students being able to use application software in practicum activities, direction and guidance are needed so that creativity in making motives in students can grow and develop. In teaching and learning activities, of course, an effective and efficient learning model is needed so that students can receive the material provided by the teacher. In learning batik, of course, the teacher must have a good learning model so that students are able to have skills in making batik motifs. The direct instruction learning model is effective for improving batik skills, the PjBL learning model can provide learners with learning experiences in producing a work.

According to Jalinus, Nabawi, & Mardin (2017) the PjBL model can increase students 'learning activities so that they get real learning experiences according to existing problems and needs and increase students' productive competence. Students can identify and formulate problems, design project work teams, make

project proposals and realize what has been designed in project proposals and report the results of project work. The PjBL model can have a positive effect in the knowledge aspect for project design and production topics so that the PjBL model can then be carried out further research to test its effectiveness in improving twenty-first century learning skills, See, Rashid, & Bakar (2015). The PjBL model can help students collaborate, cooperate and take responsibility, understand the conditions of group members, communicate ideas and manage time in making digital book projects, Dewi (2015).

Based on this background, the author uses the CorelDraw graphic design application software as a learning medium for making digital-based batik motifs in vocational high schools and uses the PjBL learning model for the learning process. The purpose of this study is to determine the effectiveness of using CorelDraw graphic design application software in the basic learning of class ten RPL skills competencies in the PjBL learning model, and to determine the results of student skills in using CorelDraw graphic design application software, especially in the field of designing digital-based batik motifs.

METHOD

This research was conducted using the Classroom Action Research method by applying the PjBL learning model which consists of planning, implementation, practicum and evaluation stages. This research was conducted at SMK Ibu Kartini Semarang on the Competency of RPL for Basic Graphic Design Subjects. The research period was carried out in the Even Semester of the 2019-2020 Academic Year from January to April 2020. The research subjects were students in grade 10 (ten) in the RPL 1 and RPL 2 classes as many as 55 students / respondents. The object observed is psychomotor skills in digital-based batik, so the tool used is a computer or laptop that has been installed by the CorelDraw graphic design application software.

There are two instruments used in this research, namely: 1) learning tools consisting of lesson plans, modules/jobsheets, and student worksheets; and 2) The data collection instrument consisted of a psychomotor skills test and observation sheets. The data that the researchers obtained were in the form of student activities in the batik process using the CorelDraw graphic design application software.

1. Batik Skills Test

The batik skill test is carried out by evaluating the results of the batik which is carried out 2 (two) times based on predetermined indicators.

2. Observations

Observations are made to determine the learning process has gone according to what was planned, thus the researcher prepares observation sheets for students. The observation sheet has been adjusted by the researcher to the lesson plan that has been made. Furthermore, the results of the data obtained by the researcher were descriptive analysis.

RESULTS AND DISCUSSION

This research was conducted at SMK Ibu Kartini Semarang Class Ten RPL Competency Skills RPL 1 and RPL 2 Academic Year 2019-2020 as many as 55 students / respondents using the PjBL research model. The research period is from January to April 2020, the following is the discussion:

a. Planning Stage

This activity contains the teacher's presentation to students for socialization related to the contents of the module / jobsheet to be worked on. Students are asked to prepare practicum equipment such as a computer / laptop with the CorelDraw graphic design application installed.

b. Practicum Implementation Stage

This activity contains student practicum activities, students do practicum according to instructions and material in the module / jobsheet provided by the teacher. Students use a computer / laptop with the CorelDraw graphic

design application installed to digitally create batik motifs.

c. Observation Stage

This activity contains teacher observations during practicum and completion of practicum. Practical activities are already in the module / jobsheet provided by the teacher. The teacher observes based on the previous observation sheet.

d. Evaluation Stage

This activity contains assessing the final results of the digital-based batik motivational designs that have been made by students. The teacher provides an evaluation of the assessment based on the assessment sheet that has been made previously. The results of the evaluation of the assessment are used as a reference to assess the effectiveness of the CorelDraw graphic design application software as a learning medium in making digital-based batik motifs.

Based on the module / jobsheet created by the teacher, students make five kinds of basic batik motifs using the CorelDraw graphic design application software. Five kinds of basic batik motifs in pictures one to five below.

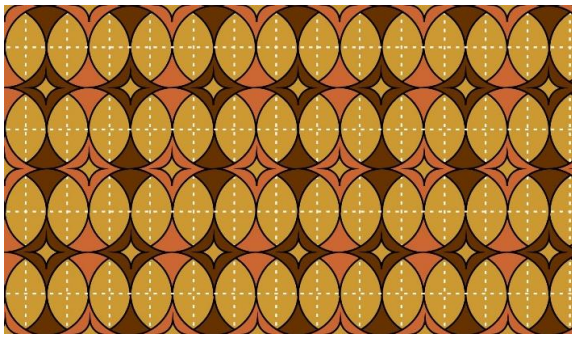

Figure 1. The First Basic Batik Motive

Figure 2. The Second Basic Batik Motive

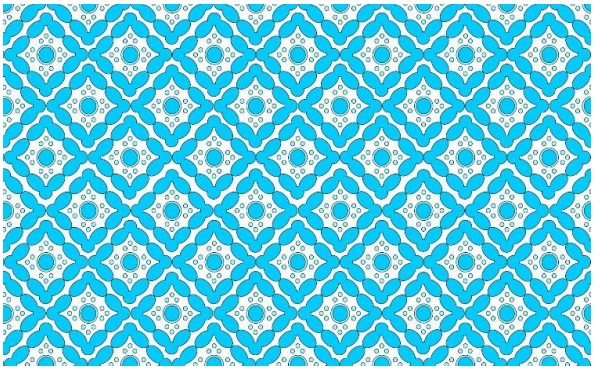

Figure 3. The third basic batik motive

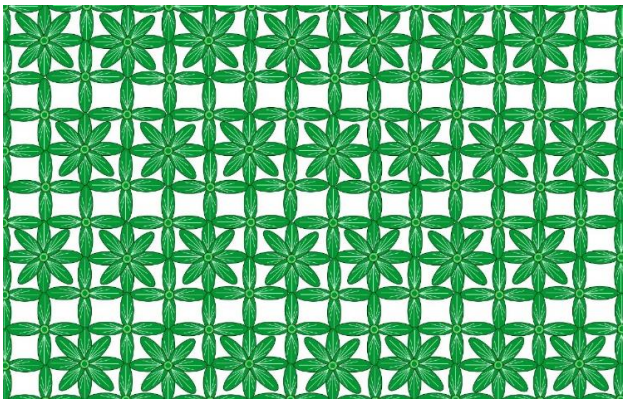

Figure 4. The fourth Basic Batik Motive

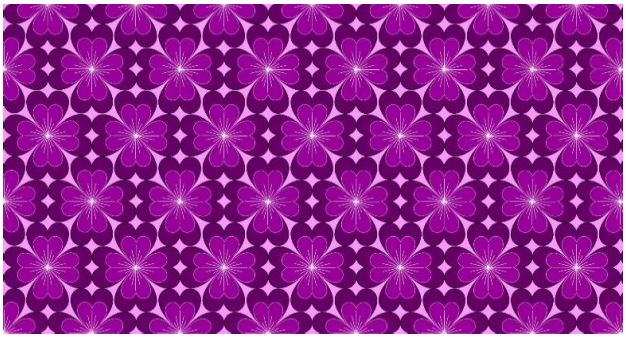

Figure 5. The Fifth Basic Batik Motive

Based on the five basic motives of digital-based batik, all 55 students of grade ten RPL 1 and RPL 2 SMK Ibu Kartini Semarang can use Coreldraw graphic design application software on their respective laptops / computers, but some are in the very category. good, good, good enough and not good. The results of practicum making digital-based batik basic motifs carried out by 55 RPL students were obtained according to table 1.

Table 1. Results of practicum making digital-based batik motifs

Type Motive	Rating Category			
	Very Good	Good	Passably	Deficient
First Batik	25 students	10 students	5 students	15 students
Second Batik	38 students	10 students	5 students	2 students
Third Batik	18 students	15 students	2 students	20 students
Fourth Batik	20 students	8 students	15 students	12 students
Fifth Batik	27 students	20 students	5 students	3 students

Based on table 1 it can be analyzed that the highest number of students who can make basic designs of digital-based batik motifs is very good category in the second type of motif, then the good category is in the fifth type of batik motif, the category is quite good in the fourth batik motif and the category is good enough. less good at the third type of motive. While the lowest number of students who can make basic designs of digital-based batik motifs is very good in the third type of motif, then the good category is in the fourth type of batik motif, the category is quite good in the third batik motif and the category is less good in the type of motif second

Based on the effectiveness level test, it was stated that the effectiveness of the use of the CorelDraw graphic design application software in the tenth grade basic learning of graphic design competency with RPL expertise in making digital-based batik motifs was 81.09%. The statement is based on the following calculations:

$$PK\ (x) = \frac{Many\ Students\ Complete}{The\ number\ of\ students} X\ 100\%$$

$$PK(First\ Batik) = \frac{40}{55} X\ 100\% = 72.73\ \%$$

$$PK(Second\ Batik) = \frac{53}{55} X\ 100\% = 96.36\ \%$$

$$PK(Third\ Batik) = \frac{35}{55} X\ 100\% = 63.63\ \%$$

$$PK(Fourth\ Batik) = \frac{43}{55} X\ 100\% = 78.18\ \%$$

$$PK(Fifth\ Batik) = \frac{52}{55} X\ 100\% = 94.54\ \%$$

$$PK(average) = \frac{72.73 + 96.36 + 63.63 + 78.18 + 94.54}{5}$$

$$= 81.09\ \%$$

Based on table 1 it can be explained that tenth grade students of RPL 1 and RPL 2 SMK Ibu Kartini Semarang for the 2019-2020 academic year can make digital-based batik basic motifs using the CorelDraw graphic design application software. However, based on final observations and evaluations, they are grouped into four types, namely very good, good, good enough and not good. Coreldraw, a graphic design application software, helps students create digital-based batik motif designs. In the CorelDraw application software, there are several tools that are used to make lines, dots and others to make batik isens. Besides that, there are several commands in the CorelDraw application software that make it easier to duplicate several motifs so that students don't make them repeatedly. Students only make one motif which can then be reproduced easily and quickly.

Some students who have used the CorelDraw application software have no difficulty in making basic batik motif designs because they already know the names and functions of the tools in the application. Students who are using it for the first time experience problems not knowing the names and functions of the tools in the application. The impact is that students need a long time to complete the basic design of batik. The level of creativity of children also affects the kinds of creations of the basic motifs of batik produced. Because students can create forms and use elements of color in the basic motif designs of batik.

The existence of a module / jobsheet that has been provided by the teacher makes it easier for students to understand the tools in the CorelDraw application software. The module / jobsheet provides basic materials for using the application. In addition, there are step-by-step instructions for using the tools. The level of

effectiveness of using the CorelDraw application software is based on the average effectiveness of 81.09%. This means that the CorelDraw application software is effective in supporting students in making digital-based batik motifs.

CONCLUSION

Tenth grade students of RPL 1 and RPL 2 SMK Ibu Kartini Semarang for the 2019-2020 academic year can make digital-based batik basic motifs using the Coreldraw graphic design application software in the PjBL learning model. The highest number of students who can make basic designs of digital-based batik motifs is very good category for the second type of motif, then the good category is in the fifth type of batik motif, the category is good enough for the fourth batik motif and the poor category is in the second type of motif. -three. While the lowest number of students who can make basic designs of digital-based batik motifs is very good in the third type of motif, then the good category is in the fourth type of batik motif, the category is quite good in the third batik motif and the category is less good in the type of motif. second. The level of effectiveness of using the CorelDraw application software using the PjBL learning model is based on an average effectiveness of 81.09%. This means that the CorelDraw application software and the PjBL learning model are effective in supporting students to make digital-based batik basic motifs. This research can be developed by making other batik motifs, and can be applied to students of the Vocational High School for Fashion Design Skills as students engaged in fashion modeling.

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