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The implementation of resource-based learning to improve creativity in developing Yogyakarta batik motif

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Abstract. This study aims to 1) investigate the implementation of Resource-Based Learning (RBL) in Batiking Course, and 2) identify RBL's impacts on students' creativity in developing the motifs of Yogyakartan batik. The method employed in this study was Classroom Action Research proposed by Kemmis and McTaggart, involving a cycle of planning, observing, and reflecting. This research was carried out in Fashion Design and Hospitality Education Department, Faculty of Engineering, Yogyakarta State University in the 2017/2018 academic year, from January to June 2018, with 36 students from Fashion Design Study Program participating as the research subjects. The instruments were tested for content validity and the items proved properly designed, while the reliability was assessed using Cronbach's alpha, resulting in an alpha value of 0.525, showing that the instrument items could be used. The obtained data were analyzed using descriptive statistics. The results of this study show that 1) the implementation of RBL in Batiking Course has been carried out in 2 cycles, consisting of Introduction, Main Activities, and Closing, and 2) in the Pre-Cycle, Cycle I, and Cycle II phases, the mean scores of the students' creativity are 29 (less creative), 37 (creative), and 47 (very creative) respectively. Therefore, the number of creative students in this implementation has increased from only 28% to 94%.

1. Introduction

The Fashion Design Education Study Program of Yogyakarta State University offers a Batik Technology course with 2 credits of practice to enhance the graduates' competences. Even though this course is a practical one, the teaching and learning process is accompanied by supporting theories, including the basic concept of batik, Indonesian batik motifs, materials for batiking, tools for batiking, and techniques in batiking (*tulis*, *cap*, and *colet*). Theory mastery will determine the students' learning achievement in this Batik Technology course.

In fashion design field, creativity is something that each graduate must possess for their competences are the realization of their ability and creativity. Munandar defines creativity as an ability to elaborate ideas [1]. Batik is a work of art that has been recognized by the world as the cultural heritage of the Indonesian people. Prasetyo asserts that batiking is one of the ways in making clothing materials that refers to a coloring technique using *malam* (wax) [2]. Susanto classifies batiks based on their motifs: geometric and non-geometric [3].

Nowadays, batik is used in not only formal events but also any non-formal occasions. Besides, batik is one of creative industries that need to be developed through innovations, particularly through motif variations that can always meet the market's demand. To do so, the Fashion Design Education students must possess extensive knowledge of batik motifs. This knowledge can be acquired if they use various resources in learning, thus adding inspiration to the making of their work.

However, there are still many students who are reluctant to look for learning resources about batik, particularly about the motifs of Yogyakartan batik, causing their works to be very simple. This condition certainly hinders the learning process. Therefore, this study tries to overcome this problem by implementing Resource-Based Learning using both mass and electronic media as the learning resources.

Beswick in Seel [4] affirms that Resource-Based Learning (RBL) involves students' active participation with the use of varied resources (books, journals, newspapers, multimedia, websites, societies, people) to eventually motivate them to learn by trying to find as much information as possible. RBL is not the only method implemented at schools for there are some other methods available. RBL is only an example of those methods so that there is no need to eliminate the other methods. Nasution mentions the characteristics of RBL as follows: (1) RBL makes use of any information resources as learning resources, including audio-visuals, and gives chances to the students to plan their learning activities by taking into account the available resources [5]. By this description, it does not mean that lecturing method can be eliminated; instead it can be combined with other methods to reach a certain purpose; (2) RBL displays a wide variety of learning resource, including resources from societies, human environments, museums, organizations, printed materials, libraries, audio-visual tools, etc. The students must be taught the techniques for doing field work and making use of libraries and reference books, so that they can be more confident in learning; (3) RBL aims to change the students' passiveness in learning traditionally into active learning by paying more attention to interests and involvement in the learning process. For this purpose, the materials taught should be more meaningful and varied; (4) Unlike any other conventional methods that require the students to learn monotonously, RBL supports the use of varied materials, methods, and communication medium that eventually will increase the students' learning motivation; (4) RBL lets the students to learn on their own pace and capability; (5) RBL offers more flexibility in terms of the time and space for learning; (6) RBL encourages the development of students' confidence in learning that is expected to be able to support a lifelong education.

In all this time, the students' works are assessed only based on the final product of their works so that the expected competences cannot be achieved. In this study, the students' works are evaluated through a portfolio assessment beginning from the very first time they start their works until they finish it. This method allows direct correction when there is a mistake made by the students in any stages of the learning process. The implementation of portfolio assessment can intensify the collaboration and communication between a student and the other student, a student and his/her teacher, a teacher and the other teacher, and between the portfolio developer and the teacher. Through the implementation of RBL and portfolio assessment, it is expected that the students' insight into batik will be wider so that their creativity in developing batik motifs can be stimulated and the desired competence can be achieved. The purposes of this study are to implement Resource-Based Learning in Batiking Course and to improve the Fashion Design Education students' creativity in developing the motifs of Yogyakartan batik.

2. Method

This study was a classroom action research, referring to the Kemmis and McTaggart's model that includes a cycle of planning, observing, and reflecting. The subjects of this study were 36 students of Fashion Design Education Study Program enrolling in Batik Technology Course in the 2017/2018 academic year.

The Planning phase was the initial mechanism focused on the preparation of everything needed in this study, both the things related to the subject matter and the research design with its technical administration. The second phase, Observing, was the phase in which RBL was implemented and its implementation was observed, and the students' learning activities were assessed. The last phase, Reflecting, was an evaluation phase intended to assess the learning achievement, viewed from both the process and the final product perspectives.

2.1 Research Instruments

The instrument used to obtain data in this study was test. The test administered in this study was a psychomotor test that assessed the students' creativity in designing Yogyakartan batik motif. Table 1 presents the items assessed to measure the students' creativity in designing batik motifs.

Table 1. The Instrument Blueprint

Variable	Indicators	Sub-Indicators	Item Numbers
Creativity in designing batik motif	a. Novelty	a. Novelty in the process, technique, material, and concept in designing batik motif.	1,2,3,4,5
		b. Creating original and germinal product.	6,7,8,9
	b. Solution	a. Product meaningfulness: the motif can be applied for practical use.	10,11,12
	c. Elaboration and synthesis	a. Complexity: Different motifs are combined into a coherent unity.	13,14,15
	Total		15

2.2 Instrument Validity and Reliability

Content validity was carried out in this study to ensure the feasibility of the instruments. The instrument validators were three lecturers of Batiking Course. The feasibility formula and the results of the assessment from the three validators are presented in Table 2 and 3.

Table 2. Instrument Feasibility Criteria

Scores	Categories
8 -15	Feasible
1- 7	Unfeasible

Table 3. The Results of the Instrument Validity Assessment

Validators	Scores	Categories
1	15	Feasible
2	15	Feasible
3	15	Feasible

The above results indicated that the instrument was feasible to be used to assess the students' creativity in designing a batik motif.

Meanwhile, the instrument reliability was assessed using Cronbach's alpha formula. Sumintoro and Widhiarso set a coefficient interval for reliability [6], as shown in Table 4.

Table 4. Reliability Levels

Coefficient Intervals	Reliability Levels
< 0.11	Useless
0.11 -0.20	Depending on the circumstances
0.21 – 0.35	Useful
> 0.35	Very Useful

The reliability calculation resulted in a coefficient of 0.525, meaning that the instrument was very useful. The target of this study was that 80% of the total number of the students were creative in designing Yogyakartan batik motif.

2.3 Data Analysis

In this classroom action research, the obtained data were analyzed using descriptive statistics. A frequency distribution was constructed by determining the interval class based on a normal curve. The level of tendency was identified using the Mean Ideal (Mi).

$$> (Mi + 1.5\ SD) \qquad = \text{Very Creative} \qquad (1)$$
$$Mi\ \text{up to}\ Mi + 1.5\ SD \qquad = \text{Creative} \qquad (2)$$
$$Mi\ \text{up to}\ (Mi - 1.5\ SD) \qquad = \text{Less Creative} \qquad (3)$$
$$< (Mi - 1.5\ SD) \qquad = \text{Not Creative} \qquad (4)$$

3. Result and Discussion

3.1 A Description of the Research Implementation

This study was carried out in three meetings. The students were already given a prior explanation regarding the issues related to the Batiking Course, especially about the types of batik motifs: primary, secondary, or *isen-isen*.

3.2 The Implementation of Resource-Based Learning

3.2.1 Pre-Cycle

3.2.1.1 Planning. The study began with a coordination among the researcher team (the course lecturers and the researchers), discussing the research materials, grouping, RBL implementation plan, and instrument development. This discussion resulted in the following agreement: (1) In developing the Yogyakartan batik motif, the students did a stole making. There were 8 groups consisting of 5 students each; (2) The learning model implemented by the course lecturer was the conventional one; (3) Research instruments were developed to evaluate the process and results of the research.

3.2.1.2 Implementing and Observing. In the implementation phase, the students were not grouped. They were observed when doing some exercises; (1) Introduction: The lecturer described the learning objectives, motivated the students by asking some questions about batik motifs, and gave a brief description of the subject; (2) Main Activities: Using a conventional teaching model, the lecturer delivered the learning materials and gave a job sheet to the students. Then he/she gave some examples about how to design primary, secondary, and *isen-isen* motifs. At the end, the students were instructed

to develop a motif that would be implemented in a stole; (3) Closing: The students submitted their work, and the lecturer gave comments about it.

3.2.1.3 Reflecting. The observation results indicated the following problems: (1) many students could not develop a motif yet; (2) many students were not confident of their work; (3) the classroom was quiet at the beginning of the task assignment, but noisy at the end; (4) the assessment results showed that many students did not do the task seriously.

Based on the reflection results, the conventional learning model was then substituted with Resource-Based Learning.

3.2.2 Cycle I

3.2.2.1 Planning. This phase focused on the preparation of everything needed in this study, including the research issues, research design, and the technical administration. In general, the activities integrated in this preparation stage included preparing the learning resources and developing the research design.

3.2.2.2 Implementing and Observing. This phase was the implementation of observational learning method using printed materials such as books and magazines, and at the same time it was also an assessment stage of the learning activities. In details, these are the observed activities: (1) the lecturer gave a brief explanation about the new learning method and stated the learning objectives to be achieved through that method; (2) the lecturer delivered the whole materials and gave a job sheet to the students; (3) the students were divided into 5 groups; (4) each group was instructed to design a batik motif to be applied in a skirt by referring to Yogyakartan batik motifs; (5) each group did the task and created a way to make the desired design; (6) at the end, each group presented their work in front of the class.

3.2.2.3 Reflecting. From the learning process in cycle 1, the following reflection can be drawn: (1) some students could not develop a motif yet; (2) some students were not confident of their work; (3) the classroom was quieter, and the discussion could start to run; (4) the groups were not so heterogeneous that there were groups of which works were already good and there were groups of which works were still not good enough; (5) after being assessed, half of the students were able to develop a motif; (6) the learning resources were still limited to printed materials so that the students' creativity could not be developed maximally.

Based on the reflection results, the existing weaknesses were to be eliminated and the implementation of Resource-Based Learning was to be maximized.

3.2.3 Cycle II

3.2.3.1 Planning. After analyzing the reflection results from Cycle I, this phase was the very first mechanism focused on the preparation of everything needed in this classroom action research, including the things related to the subject matter, research design, and its technical administration. In this cycle, some improvements were made, like making the groups more heterogeneous and widening the learning resources to the Internet. Each group was given intensive guidance during the learning process.

3.2.3.2 Implementing and Observing. In this phase, the students' learning process were observed and their works were assessed.

3.2.3.3 Reflecting. In this cycle, some students had already been able to develop batik motifs, they were more confident of their works, the classroom atmosphere was calmer, and the discussion could run well.

Based on the results of this reflection, the research was ended for the learning process had run well, and most students had already been able to develop Yogyakartan batik motifs.

3.3 The Improvement in the Students' Creativity in Designing Yogyakartan Batik Motifs Pre-Cycle.
In this pre-cycle, the students' creativity in developing Yogyakartan batik motifs was not as expected yet. The data analysis resulted in a mean score of 29, a median of 28, and a mode of 28.

Table 5. Creativity Improvement Scores

NO	Scores	Criteria	Pre-Cycle		Cycle 1		Cycle 2	
			FREQ.	%	FREQ.	%	FREQ.	%
1	46-60	Very Creative	-	0	4	11	18	50
2	31-45	Creative	10	28	22	61	16	44
3	16-30	Less Creative	26	72	10	28	2	6
4	1-15	Not Creative	-	0	-	0	-	0
		Total	36	100	36	100	36	100

In the Pre-Cycle phase, only 10 students (28%) were creative, while the rest 26 students (72%) were less creative. Therefore, the students' creativity in developing Yogyakartan batik motifs in this phase was categorized as "less creative".

This condition urged the researchers to implement group investigation learning model. The cycles implemented in this model aimed to improve the learning quality as shown in the students' creativity in developing the motifs of Yogyakartan batik.

3.3.1 Cycle I. The results of the observation showed that there had been improvements in terms of the students' enthusiasm and interest in completing their tasks, and likewise in their mastery of the learning materials. The descriptive statistics calculation resulted in a mean score of 37, a median of 30, and a mode of 30. As shown in Table 5, the students' creativity had increased by 44% as 4 students (11%) were very creative, 22 students (61%) were creative, and 10 students (28%) were less creative.

3.3.2 Cycle II. Based on the observation undertaken in this cycle, some improvements had been achieved, like in the smoothness of the learning process, the students' enthusiasm in completing their tasks, and their interest in making a more interesting design. In addition, the students' mastery of the learning materials in this second cycle was much better than that of the first cycle. The descriptive statistics calculation resulted in a mean score of 46, a median of 48, and a mode of 48. As presented in Table 5, the students' creativity from the Pre-Cycle, Cycle I, to Cycle II had increased by 72% as 18 students (50%) were very creative, 16 students (44%) were creative, and 2 students (6%) were less creative.

3.4 Discussion.

The implementation of Resource-Based Learning in Batiking Course began with the pre-cycle of the implementation of conventional model to measure the students' creativity in developing Yogyakartan batik motifs. In the main activities, the lecturer presented the materials and gave examples, and the students were asked to develop batik motifs. After the assessment process, it was concluded that the learning implementation was less effective. It was shown by the fact that many students could not develop the batik motifs yet, some students were not confident of their work, the classroom atmosphere was calm at the beginning but noisy at the end, and most students' works were not seriously made.

By considering those reflection results, the conventional learning model was replaced by Resource-Based Learning. In Cycle I, the students were exposed to such resources as books and magazines related to batik motifs. In the materials presentation phase, the lecturer gave a brief description of RBL, including the intended learning objectives. The lecturer presented the whole materials and distributed a job sheet to the students. The students were divided into five groups. Each group was given a case to solve: developing a Yogyakartan batik motif to be applied in a skirt. Each group worked together to find a way to develop the desired design. After they finished developing their motif, they had to present their work in front of the class. Through this learning model, there had been some improvements: some students had not been able to develop a batik motif yet, many students were not confident of their works, the classroom atmosphere was calmer, the discussion started to run well, the groups were not heterogeneous, and the learning resources were limited to printed materials.

This unsatisfactory result urged the researchers to continue the study to Cycle II and add the Internet as an additional learning resource. The class began with an explanation on how to use the Internet to develop a motif. The lecturer then distributed a job sheet to the students and gave a brief explanation about the motifs suitable for a dress. In this cycle, the learning process was similar to that of the first cycle. However, for an improvement, the Internet was used for reference and the groups were divided heterogeneously. In this cycle, some students had been capable of developing batik motifs and were more confident of their works. Moreover, the learning atmosphere was calmer, and the discussion has run well. More than half of the students could develop a motif well. This cycle had resulted in the desired improvements so that the study was discontinued.

In the pre-cycle phase, only 28% of the students were creative in designing the Yogyakartan batik motif. Most students produced common and unartistic motifs with uninteresting color compositions and through improper procedures. The students had difficulties in differentiating secondary motif from *isen-isen*. Susanto defines secondary motif as a motif that completes the primary motif, while *isen-isen* is a motif that fills in the empty field in the cloth [3].

For this condition, the researchers found it necessary to implement Resource-Based Learning in order to improve the learning quality as seen the students' creativity in developing Yogyakartan batik motifs. In the first cycle, 4 students (22%) were very creative, 22 students (28%) were creative, and 10 students (72%) were less creative. Therefore, in average the students were already in "creative" category. This improvement could be seen in the unique and artistic motifs they produced. The color composition they used was better and they had developed the motifs in a proper procedure. However, the students still had a problem in giving the right title for the motif.

To achieve better improvements, the researchers continued the study to Cycle II. In this cycle, as many as 18% of the students (50%) were very creative, 16 students (44%) were creative, and 2 students (6%) were less creative. From the Pre-Cycle to Cycle II, an improvement in the students'

creativity as much as 72% was achieved. The motifs they developed were unique and artistic; the color composition they applied was harmonious; the title matched the motif; and the motifs were developed through a proper procedure. This study has shown that Resource-Based Learning can improve the students' creativity in developing Yogyakartan batik motif.

4.   Conclusion

The implementation of Resource-Based Learning in Batiking Course bagan with Introduction stage: the lecturer gave a brief description of RBL and stated the learning objectives to be achieved through this model. In the Main Activities stage, the lecturer presented the materials, showed how to make use of the available learning resources, divided the class into several groups, assigned a task for the students, and asked the students to develop a batik motif to be presented in front of the class. Finally, the Closing stage was for evaluating the students' works as well as the learning process.

In the Pre-Cycle, Cycle I, and Cycle II phases, the mean scores of the students' creativity in developing Yogyakartan batik motif were 29 (less creative), 37 (creative), and 47 (very creative) respectively. Therefore, the number of creative students in this implementation had increased from only 28% to 94%.

5.   References

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