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## **Interactive Multimedia: The Benefits In Batik Art Learning**

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### **Abstract**

Many people believe that interactive multimedia can create the potential for a high-quality learning environment. However, in fact, many teachers at the primary school level have not used interactive multimedia in the batik learning. From the data in primary schools in Semarang, most teachers have not implemented interactive multimedia in batik learning. This study aims to explain the effectiveness of interactive multimedia use in batik learning. The quantitative method was an experimental method. The sampling employed cluster random sampling techniques, from SDN Sekaran 01 as an experimental group involving 26 students and SDN Sekaran 02 as a control group involving 27 students. The data collection techniques employed tests, non-tests, t-test data analysis and N-Gain. The results indicated that interactive multimedia was effective in terms of the average test result of the experimental group 79.19 and the average control group 73.20. The result of N-Gain experimental group was 0.21, included in the low category and the N-Gain of the control group was 0.38, included in the medium category; therefore, interactive multimedia can be applied in batik learning activities.

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## INTRODUCTION

Many people believe that interactive multimedia can create a high-quality learning environment. Interactive multimedia is directed so that students are actively involved in learning activities. (Cairncross and Mannion, 2001). Multimedia is useful for offering experiences, and able to encourage students explore students' perceptions (So, Chen and Wan, 2019). The experience gained from multimedia can provide long-term memories for students (Kirschner, Kester and Corbalan, 2011). Multimedia can also improve student achievement in learning activities (Cai and Cai, 2018). Multimedia is an effective learning that involves multidimensional, which consists of audio, visual, audio-visual, application and internet media (Gao et al., 2017). Introduction to videos and visual images can improve students' understanding and activity in learning (Xu et al., 2017). The needs of multimedia in art learning activities have a useful contribution to learning success. The use of multimedia can affect the quality of art learning to be high. Interactive multimedia can broaden students' knowledge from low to high, in learning activities can improve students' understanding through both visual and verbal information. Learning activities involve the interaction between visual, audio, audio-visual, and video media (Konert, 2014).

The use of multimedia in art learning can increase the appreciation level so as to broaden knowledge, experience and artistic skills. The principle of interactive multimedia learning is motivating students to be interested in art. What is seen is a visual image to study contents in a multimedia presentation (Butcher, 2014).

However, in fact, many teachers at the primary school level have not used interactive multimedia in the batik learning. From the data in SDN Sekaran 01 and SDN Sekaran 02, most teachers have not implemented interactive multimedia in batik learning. The data on observation of batik learning was the teachers have not implemented interactive multimedia to support the process of batik learning. The media used by the teachers were still limited to visual and textual form, there was no concrete explanation on the techniques of how to make batik. This phenomenon affected the low achievement of student learning outcomes below the minimum learning mastery criteria. During the learning process, students less understood the concept of batik, the origin of batik, batik materials, batik techniques, batik coloring both of natural and chemical colors, and students did not know how to make batik.

Moreover, batik is introduced in school learning. In these learning activities, interactive media are needed to support learning activities. Batik learning activities can create students to be creative, imaginative, and skilful (Mason, Nurharini and Estiastuti, 2019)

To overcome the aforementioned problems, the solution is implementing interactive multimedia in batik learning. In the application of interactive multimedia, students are introduced to the concept of batik, the origin of batik, kinds of batik, batik materials and batik coloring, batik techniques and the process of making batik. The display of interactive multimedia include text or concept of batik, real and clear pictures, videos about making batik. The display can help teachers transfer knowledge and improve students' skills in participating batik learning.

Batik needs to be preserved and developed in learning activities, this is because batik has become a part of human life. Batik is a form of visual art on the textile materials produced using traditional drawing techniques from Indonesia. For Javanese people, batik is a traditional cloth that holds a cultural identity. (Eny Kustiyah, 2017).

## METHOD

The quantitative method was an experimental method. The experimental method was employed to find out the effect of certain treatments on the other variable under controlled conditions. In this study, the sample of this study was grade 5 with cluster random sampling techniques consisting of 26 students of SD Negeri Sekaran 01 as an experimental group and 27 students from SDN Sekaran 02 as a control group in the 2018/2019 school year. Therefore, the total sample was 53 students.

The techniques employed in this research were: 1). Tests to measure students' abilities in learning as an evaluation of learning activities to make batik, 2). Observation by observing things simultaneously, recording as a material for analysis, 3). Documentation through records of important events, writings, pictures, or monumental works from someone, as well as photos of activities and videos.

The analysis of student learning outcomes was used to determine the mastery of learning in the cognitive domain by using multiple choice tests. The test results were checked and then given a value (score). The test item for correct answer scored 1 (one) and incorrect answer scored 0 (zero). Student scores were obtained by the following formula:

$$N = \frac{B}{N} \times 100$$

Note:

B : number of correct item  
N : number of test items

The analysis of student learning outcomes for skill aspect was through performance tests. The test results were checked and then given a value (score). Excellent criteria obtained a score of 4 (four), good criteria obtained a score of 3 (three), sufficient criteria obtained a score of 2 (two), and low criteria obtained a score of 1 (one).

$$N = \frac{B}{N} \times 100$$

Note:

B : number of correct item  
N : number of test items

**RESULT AND DISCUSSION**

**Cognitive Learning**

The results of batik learning were obtained from cognitive and skill scores. Cognitive learning results were obtained by giving pretest and posttest to students both in the experimental class and in the control class. In the cognitive aspect, the tests were in the form of multiple choice questions. The pretest and posttest questions were given in the experimental and control class. Before the test, the questions in the form of multiple choice were tested for validity, reliability, item discriminating, and level of difficulty.

**Table 1.** Results of Reliability Test of the Trial Test

N	Conclusion	Criteria
32 0.873021 0.349	Reliable	High

**Table 2.** Pretest Learning Results

No	Interval	Cognitive Pretest			
		Control Class		Experimental Class	
		F	%	F	%
1.	93-100	0	0	0	0
2.	85-92	0	0	0	0
3.	72-84	3	11.11	6	23.07
4.	64-71	8	29.62	8	30.76

5.	56-63	13	48.14	11	42.30
6.	48-55	2	7.40	0	0
7.	40-47	1	3.70	1	3.84
Total		27	100	26	100
Complete		8	29.63	17	65.38
Incomplete		19	70.37	9	34.62
Highest		83		83	
Lowest		46		40	
Average		63.62		65.15	

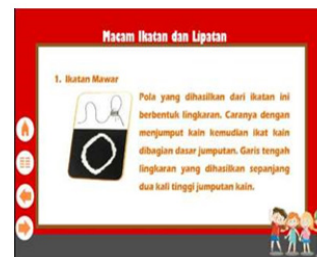
**Table 3.** Posttest Learning Results

No	Interval	Cognitive Pretest			
		Control Class		Control Class	
		F	%	F	%
1.	93-100	0	0	1	3.84
2.	85-92	3	11.53	5	19.23
3.	72-84	13	50	14	53.84
4.	64-71	4	15.38	6	23.07
5.	56-63	5	19.23	0	0
6.	48-55	1	3.84	0	0
7.	40-47	1	3.84	0	0
Total		27	100	26	100
Complete		19	70.37	22	84.61
Incomplete		8	29.63	4	15.38
Highest		86		96	
Lowest		46		66	
Average		71.29		78.80	

The interactive multimedia used in batik learning can be seen in the following figures.



**Figure 1.** Cover of interactive multimedia



**Figure 2.** Conceptual materials in the media



Figure 3. Materials on making batik



Figure 4. Materials on how to make batik

### Skill Results

Besides from cognitive learning outcomes, the effectiveness of interactive multimedia can be seen from the results of learning skills. The results of learning skills were obtained from the performance scores of students making batik.

Based on the results of student skills, the students were able to be creative in making various kinds of bonds, students were able to make batik neatly and students were able to combine ties with the volume of shapes, colors to produce a balanced and harmonized batik. The results of student work can be seen in the following picture.

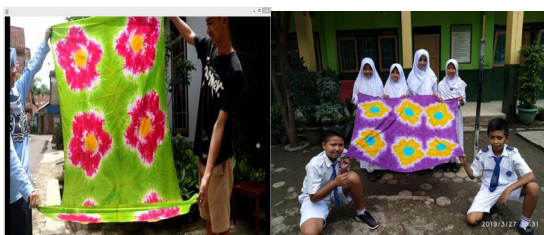


Figure 5. Students' creativity in making batik

Based on the obtained results, there are differences in learning outcomes between the experimental class and the control class. Interactive multimedia can improve student learning outcomes in the experimental group. Students can understand more about the concept of batik art, students can be skilful in making batik, as well as being creative in making batik designs. To better understand the materials, interactive multimedia contains the needed stimulus so that students are

more creative and think at a higher level. The interactive multimedia used in learning has clear instructions so that there are learning and interactions and makes it easy for users to operate the media. (Hu *et al.*, 2014). The use of interactive multimedia can improve student skills and experimental group learning outcomes higher than the conventional learning (Wiana, 2018).

Interactive multimedia means that the learning process is created by the interaction between teacher and students, students and students, as well as students with the environment, students with learning media. Interactive multimedia makes it easy for teachers to transfer material to students by fostering an attitude that is always eager to pay attention to any information conveyed by the teacher through interactive multimedia.

### CONCLUSION

The implementation of interactive multimedia in batik art learning shows that interactive multimedia is very effective. It can be inferred from the average value of the posttest learning outcomes in the experimental group is 79.19, while the average control group was 73.20. The difference in the average posttest cognitive and skill scores of the two groups is 5.99. Therefore, it can be concluded that the average learning outcomes of making batik in the experimental class are higher than the average learning outcomes of the control class.

Hypothesis testing using Independent Sample T-Test reveals the score of  $t = 3.017 > t_{table} = 2.007$ . The data analysis results show that  $H_0$  is rejected, and  $H_a$  is accepted; thus it can be concluded that interactive multimedia is more effective than the conventional model.

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