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Experiential Learning Model: Integration of Batik Learning Materials in Applications

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Abstract

This research aims to evaluate the effectiveness of implementing the Smart Batik Class learning application which integrates the concept of experiential learning in the Cikadu Batik workshop for high school level students. The research was conducted from October 2023 to January 2024 with a total of 30 students as respondents. The method used is quantitative. The data in this research includes testing the level of understanding through a multiple choice test, the N-Gain test to measure increased understanding, and a test of batik skills. The results show that the learning model is effective, with significant improvements in students' understanding and skills. The mean N-Gain score of 0.7753 indicates the success of the model in achieving its goals, while the batik skills test indicates that the majority of students succeeded in achieving a satisfactory level of success. This conclusion confirms that the batik learning model by implementing the Smart Batik Class learning application which integrates the concept of experiential learning is successful in increasing students' understanding and skills in batik.

Keywords: *Batik Learning, Experiential Learning, Educational Tourism*

INTRODUCTION

Art learning is currently experiencing various significant changes and transformations in response to technological developments and the needs of students. So it is not surprising that online learning platforms, educational applications and other technology-based learning tools have become an integral part of the arts learning process(Yao, 2024). In art learning, students do not only focus on academic knowledge, but must also be able to develop skills(Hersh et al., 2023). In this way, student-centered learning approaches are increasingly being implemented(Swanzy-Impraim et al., 2023). Students are expected to be the main actors in the learning process, while teachers only act as facilitators who support students' exploration, discovery and self-development and accommodate their learning styles and needs.

In fact, in art learning, students adopt more experience-based learning models. This is done so that students can be directly involved in real activities that allow them to apply knowledge in a practical context (Ma'arif et al., 2023). Experiential learning (EL) is experience-based learning(Head, 2020), so that learning activities become meaningful for students. In EL education is no longer limited to the formal environment at school, but can also be integrated into everyday life.The EL learning model offers a simple learning cycle by systematically describing a step-by-step process. This model focuses on creating learning experiences for students independently without explicit external intervention because this model can control and guide the knowledge acquisition process(Shiralkar, 2021, p. 2). Apart from that, this model also creates expertise for its users(Bennett et al., 2021, p. 2). So, students can understand the material more quickly because they are directly involved in the field. That way, knowledge retention will be produced more quickly. EL can manage emotions, build concepts in depth, introduce complex learning environments, reflect, shape students' ways of thinking and working.(Reynolds & Vince, 2007, p. 6).

That way, it is natural that ELbecomes relevant and even increasingly important in the context of arts learning. Moreover, many formal and non-formal educational institutions have adopted EL principles in facilitating student learning. Usually, EL is widely applied to learning that has projects with the aim that students can learn through direct experience(Fromm et al., 2021), apply knowledge in a practical context(Helate et al., 2022), and

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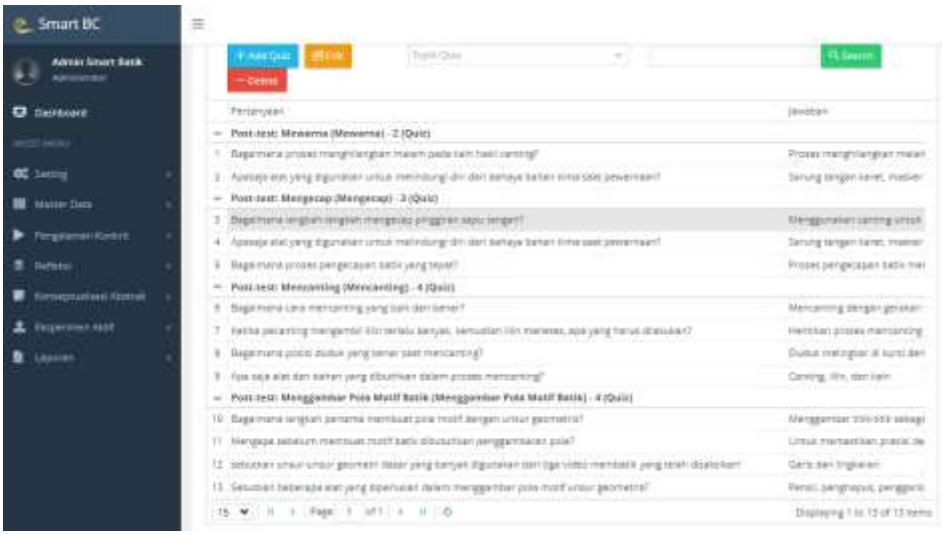
develop skills relevant to the real world. EL-based projects allow students to develop a variety of real-world skills. These include critical thinking, creativity, problem solving, teamwork, communication, and leadership skills. This happens because students don't just listen to or read about certain concepts(Alves & Putnik, 2019), but they do engage in real activities that present challenges and opportunities for learning(Bidder et al., 2019).

In learning the art of batik, students experience many learning difficulties at the stage of forming conceptual understanding and its application. Some of the material that is difficult for students to do is drawing batik motifs, canting with real lines without breaking and measuring the size of color mixtures. To facilitate these difficulties, schools collaborate with local communities (batik workshops) to organize batik learning through educational tours. The batik workshop has teaching staff who are experts in the art of batik and complete facilities to support the learning process. Instructors also have experience in teaching and guiding students in batik techniques. By collaborating with batik workshops that organize educational tours, schools can get assistance in designing and implementing effective and quality batik learning programs.

In this study, the researcher explains the EL concept which is integrated into the batik learning application with the hope that students can directly learn based on their experience in the field, not just theory in the classroom. More than that, by integrating EL into learning applications, it is hoped that after completing educational tourism activities, students can learn independently. Just like the EL cycle developed by David Colb's, this EL-based application also has 4 (four) stages in learning, namely concrete experience, reflection, abstract conceptualization, and active experimentation. In this way, it is hoped that this research will be able to reflect efforts to create a learning environment that is inclusive, innovative and relevant to future needs. By adopting an approach that emphasizes collaboration, skills, exploration, and lifelong learning, education aims to prepare students to become individuals who think critically, are creative, adaptive, and contribute positively in a rapidly changing global society.

METHOD

This research was located at the Tanjung Lesung Cikadu batik workshop, with a total of 30 Upper Intermediate Level students as respondents. The research was conducted from October 2023 to January 2024. The method used was quantitative. This research aims to measure the effectiveness of developing a batik learning application that is integrated with the concept of experiential learning. The data in this study was taken through multiple choice tests and batik skills tests. A multiple choice test was carried out to measure students' level of understanding, the pre-test was carried out before students used the learning application and the post-test was carried out after using the batik learning application which was named smart batik class.



Figures1 Test students' level of understanding through developed learning applications

Next, the pre-test and post-test data were processed using SPSS to determine the effectiveness of N-Gain. The N-Gain effectiveness testing process is used to measure how effective an intervention or learning model is in increasing students' understanding of batik learning. The maximum score range is the difference between the maximum and minimum scores obtained in the test. N-Gain values range from -100% to 100%. Where the medium category Gain is at $0.30 < g < 0.70$. A positive value indicates an increase in understanding or performance after treatment or intervention is given, while a negative value indicates a decrease in understanding.

Furthermore, after data collection is complete, the next step is to carry out an effectiveness test using the t-test. Based on the results of the t-test, interpretation is carried out to determine whether there is a significant difference between the average scores before and after implementing the learning model. If the p-value is less than a predetermined significance level (usually 0.05), then H0 is rejected and H1 is accepted, indicating that there is a significant difference between the two groups.

Next, to measure batik making skills, measurements are carried out based on scores with criteria one to three. This assessment allows a more detailed evaluation of students' abilities in making batik (Thorik, Muhammad: 2016), taking into account the various aspects of the skills involved. Each score criterion is adjusted to previously determined indicators to ensure that the assessment is carried out objectively and structured.

INDICATOR		**ASSESSMENT CRITERIA**			**SCORE**
PROCESS (60%)					
Making Batik Patterns	Flexibility of form	Score 3	:	precise curve, flexible shape, not stiff	
		Score 2	:	the curve is less precise, the shape is less flexible	
		Score 1	:	the shape is still stiff	
	Determination of form	Score 3	:	neat, very clean, and without traces of erasure	
		Score 2	:	not neat, not many scratches, but still visible	
		Score 1	:	not neat, lots of erasure marks, and dirty	
	Creativity	Score 3	:	is a student's idea based on an example	
		Score 2	:	almost the same as the example	
		Score 1	:	exactly the same as the example	
etc					

RESULTS AND DISCUSSION

Cognitive Understanding Test Results

Testing the level of understanding of batik through a multiple choice test is an important evaluation method in learning batik because it can help measure participants' in-depth understanding of the material being taught. Multiple choice tests provide a clear picture of how well students have mastered the learning material. This helps instructors or educators to know areas that need to be further clarified or emphasized in further learning. The following are the pretest and posttest results obtained:

Table 1 Pretest and Posttest Results

Learners	**COMPETENCY TEST SCORES**		**N-Gain Score**	**N-Gain Percent**
	Pre-test	**Post-test**		
1	40	90	0.83	83.33
2	40	90	0.83	83.33
3	30	90	0.86	85.71
4	50	84	0.68	68.00
5	55	90	0.78	77.78
6	40	85	0.75	75.00
7	50	88	0.76	76.00
8	35	86	0.78	78.46
9	40	98	0.97	96.67
10	60	85	0.63	62.50
11	65	90	0.71	71.43
12	40	90	0.83	83.33
13	40	86	0.77	76.67

14	35	88	0.82	81.54
15	55	95	0.89	88.89
16	50	80	0.60	60.00
17	55	90	0.78	77.78
18	45	88	0.78	78.18
19	45	87	0.76	76.36
20	40	80	0.67	66.67
21	40	95	0.92	91.67
22	40	90	0.83	83.33
23	45	85	0.73	72.73
24	35	85	0.77	76.92
25	40	85	0.75	75.00
26	40	88	0.80	80.00
27	45	90	0.82	81.82
28	50	87	0.74	74.00
29	50	88	0.76	76.00
30	55	85	0.67	66.67

To ensure the effectiveness of the model developed, an N-gain test was carried out to measure the increase in students' understanding after following the batik learning model based on the smart batik class application. Here are the results:

Table2. N-Gain Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_skor	30	.60	.97	.7753	.08076
Ngain_persen	30	60.00	96.67	77.5256	8.07617
Valid N (listwise)	30				

Based on the table above, it can be concluded that the batik learning model based on the smart batik class application is effectively used at the Cakdu Batik Studio for high school level students, this is proven by the mean value of the N-Gain score (0.7753) which is higher than the reference value, namely 0,6. This shows that the model implemented has succeeded in achieving its objectives.

Furthermore, in the table above it is also explained that the percentage of the mean N-gain percent value, namely 77.5256%, is also higher than the reference value, namely 76%. Thus, it can be concluded that the batik learning model based on the smart batik class application has exceeded the established standards. Moreover, the comparison between the mean N-gain value and the reference value not only shows the overall effectiveness of the learning model, but also the effectiveness in using the model.

Next, to measure the increase in student learning outcomes, a T-test was carried out. Here are the results:

Table 3. T-Test Test Results

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretes	45.00	30	8.200	1.497
	Postes	87.93	30	3.903	.713

Paired Samples Test

		Paired Differences					t	df	Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			One-Sided p	Two-Sided p
Pair 1	Pretes - Postes	-42.933	9.139	1.668	-46.346	-39.521	-25.732	29	<.001	<.001

Based on the picture above, it can be concluded that the average mean for the pre-test was 45.00, while the post-test was 97.93, which means there was an increase in batik learning outcomes for students by 42.933.Thus, the learning model used has succeeded in achieving the desired level of effectiveness or even exceeding the set standards. This shows that the learning model can be considered successful in the context of the evaluation provided.

Batik Skills Test Results

The practical batik performance test is an important step in the batik learning process because it can show students' ability to apply the theoretical knowledge learned in a practical context. Through practical performance, students are encouraged to be actively involved in the learning process because they have to apply students' knowledge and skills directly, which can increase students' understanding of the material.

Table 2 Results of Batik Making Practice

STUDENTS	PROCESS (60%)								RESULT40%				Total	Score
	Making Batik Patterns					Coloring & Lorod								
	Creativity	Determination of form	Flexibility of form	Wax maturity	Kebersihan	Color density	Color evenness	Cleanliness (after lorod)	Neatness	Cleanliness	Creativity	Creativity		
1	3	2	2	1	1	2	2	2	3	2	3	3	26	66.67
2	2	2	3	2	2	2	2	1	2	3	3	2	26	66.67
3	2	2	3	3	2	2	2	3	2	3	3	3	30	76.92
4	3	2	2	3	3	2	2	2	2	2	3	2	28	71.79
5	3	3	2	2	3	3	1	2	3	2	2	2	28	71.79
6	3	3	2	2	3	3	3	2	3	2	3	2	31	79.49
7	2	3	3	2	2	2	2	3	3	3	3	2	30	76.92
8	3	2	2	2	2	2	3	2	2	2	3	3	28	71.79
9	3	2	2	3	3	3	3	2	2	2	3	3	31	79.49
10	3	3	2	2	3	1	3	3	3	2	2	3	30	76.92
11	3	3	2	2	3	2	3	3	3	3	2	2	31	79.49
12	2	3	3	2	2	1	1	3	3	3	3	2	28	71.79
13	3	2	2	2	2	3	2	2	2	3	3	3	29	74.36
14	3	3	3	3	2	3	3	3	3	3	3	3	35	89.74
15	2	3	3	2	2	3	2	3	2	2	3	2	29	74.36
16	2	3	3	2	2	2	1	3	3	2	3	2	28	71.79
17	2	2	3	3	3	1	2	2	2	2	2	2	26	66.67
18	3	3	3	3	3	2	2	1	3	3	2	3	31	79.49
19	3	2	3	3	3	2	2	3	2	2	3	2	30	76.92
20	3	3	3	3	2	2	2	3	2	3	3	2	31	79.49
21	2	2	3	2	2	2	1	2	2	3	3	3	27	69.23
22	3	2	3	2	3	3	2	2	3	2	3	2	30	76.92
23	2	3	3	3	2	3	2	1	2	3	2	2	28	71.79
24	2	2	3	3	2	1	1	2	2	3	2	2	25	64.10
25	3	3	3	3	2	3	3	2	3	2	2	2	31	79.49
26	2	3	3	3	2	2	1	3	2	2	3	3	29	74.36
27	3	3	2	2	2	2	1	3	3	3	3	2	29	74.36
28	2	2	2	3	2	1	3	2	2	3	3	3	28	71.79
29	3	2	3	3	3	1	2	2	3	3	3	3	31	79.49
30	3	3	3	3	3	1	1	2	3	3	3	3	31	79.49

Based on the results of the batik practice carried out, it can be concluded that the average score obtained by students was 81.20. This score indicates that the majority of students succeeded in achieving a satisfactory level of success in learning to make batik. This shows that the batik learning carried out at the Cikadu Batik studio, with the help of the smart batik class learning application, is able to facilitate students' learning effectively. Even

though there were several obstacles faced during the learning process, especially at the coloring stage where the average student score was 2.0, students were still able to complete the learning optimally.

CONCLUSION

The conclusion from the evaluation of batik learning carried out using the level of understanding test, N-Gain test, and batik skills test shows that the batik learning model based on the smart batik class application is effectively used at the Cikadu Batik Workshop for high school level students. Analysis of competency test scores shows a significant increase from pre-test to post-test, with a mean N-Gain score of 0.7753 which is higher than the reference value. This indicates that the learning model has succeeded in achieving its goals. In addition, the percentage of the mean N-gain percent value also exceeds the reference standard, indicating the overall effectiveness of the learning model and in its use.

The batik skills test also showed that the average score of students in batik practice was 81.20, indicating that the majority of students managed to achieve a satisfactory level of success. Even though there are several obstacles faced during the learning process, such as at the coloring stage, students are still able to complete the learning well.

Based on this conclusion, it can be concluded that batik learning based on the smart batik class application by integrating the EL learning model has succeeded in achieving the desired level of effectiveness or even exceeding the set standards. This shows that this learning can be considered successful in improving students' understanding and skills in batik.

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