

Comparison Between Project Based Learning Aided “Edmodo” and Conventional Learning For Learning Outcomes of Two Dimensional Animation Techniques (Experimental Eleventh Grade Students of Vocational High School Batik 2 Surakarta)

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ABSTRACT

This research is aimed to find out: (1) the differences learning outcomes between project based learning aided edmodo model and conventional learning (2) the effectiveness of using project based learning model to increase learning outcomes of two dimensional animation techniques. This research used quasi experimental with pretest-posttest control group design. The population of this research are students of class XI 1 and XI 3 multimedia program of Vocation High School Batik 2 Surakarta with 70 students. The technique of data collection used test to find out cognitive value and observation to find out affective and psychomotor values. The data analysis used were t-test formula and gain index analysis. The result showed that : (1) there was difference learning outcomes between project based learning model and conventional learning model at eleventh grade students of vocational high school Batik 2 Surakarta which shown by $t_{count} = 4,435$ cognitive, $t_{count} = 2,175$ affective, $t_{count} = 2,344$ psychomotor were bigger that $t_{table} = 1,995$. (2) project based learning is more effective than conventional learning model to increase learning outcomes of two dimensional animation techniques which shown by gain index analisys, at experiment class obtained 0,587 and control class obtained 0,369.

Keywords: project based learning model, edmodo, learning outcomes

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1. INTRODUCTION (10 PT)

Nowadays the learning model has an important role in the learning process, the learning model used should be in accordance with the objectives to be achieved, with the suitable learning model, the students are expected become active and can affect the learning outcomes of students. Project-based learning model is a learning model that provide opportunities for teachers to manage learning in class by involving project work. Project work is a form of work that contains complex tasks based on questions and problems that are very challenging and guide students to design, solve problems, make decisions, conduct investigative activities, and provide opportunities for students to work independently according to Made Wena [7].

Based on the observations result in SMK Batik 2 Surakarta majoring in Multimedia at the time of learning two dimensional animation techniques, researcher still found one-way teaching and learning activities which seen from there's no interaction when the teacher taught. Students are less active in the learning process because teachers only use conventional learning model.

Based on that problems, this study aims to (1) find out the differences in learning outcomes between project-based learning aided “edmodo” and conventional learning (2) measure the effectiveness of project-based learning models in improving the learning outcomes of two dimensional animation techniques students of class XI Multimedia SMK Batik 2 Surakarta

Literature Review

There are several relevant studies to the topics in this research such as, Movahedzadeh, Farahnaz. Et al. (2014) in the study students showed improvements in the areas of confidence, technical skills laboratories, and interest in STEM related fields and most importantly, students showed high levels of performance and satisfaction.

Furthermore, in a study conducted by Dewi [2] entitled “The Effect of Project Based Learning on Learning Motivation, Creativity, Critical Thinking Ability, and Cognitive Ability of Class X Biology Subjects in SMAN 1 Batu” in the study it can be concluded that the project based learning can improve critical thinking skills and cognitive abilities.

In a study conducted by Anjar Aji [5] it can be concluded that the use of project based learning models is more effective than teacher centered learning in increasing the cognitive, affective and psychomotor values of students.

2. RESEARCH METHOD

The research method used in this research is Quasi experimental with pretest-posttest control group design [6]. In this study the sampling technique is random sampling with a cluster approach. The population in this study were students of class XI MM 1 and XI MM 3 Multimedia Expertise Program in SMK Batik 2 Surakarta with a total of 70 students. Data collection techniques in this study use tests and observation sheets. Data analysis technique used is t-test [1] and gain index analysis [4].

Table 1. Research Design

Class	Pretest	Treatment	Posttest
XI MM 1	T ₁	P ₁	T ₁ P ₁
XI MM 3	T ₂	P ₂	T ₂ P ₂

Based on the table above, groups are divided into 2 as experimental class and control class, where the experimental class is class XI MM 3 and Class XI MM 1. Before giving treatment, the researcher first checks the balance of the initial ability of the two classes. To check the initial ability, the researcher gives a measuring instrument in the form of pretest in both classes. After that the experimental class was given project based learning aided edmodo, and in the control class conventional learning was given conventional learning. Data retrieval techniques in this study use test and observation sheets. After the two classes were given treatment in the form of different learning models, both classes were given posttest.

3. RESULT AND ANALYSIS

3.1. RESULT

In the results of this study, students get learning outcomes in three domains, namely, cognitive, affective and psychomotor. In the cognitive domain, values are taken from multiple choice tests, while for affective and psychomotor values using observation sheets.

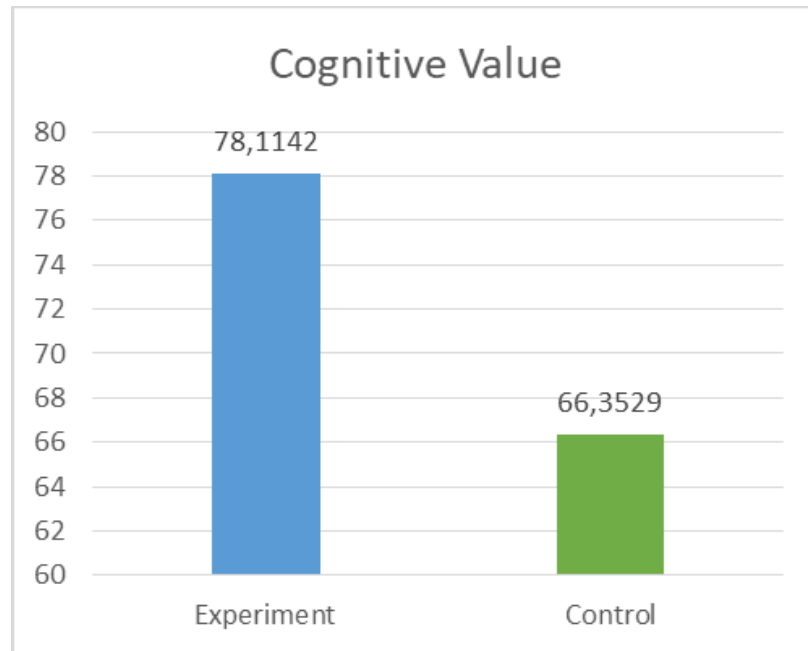


Figure 1. Comparison of Average Cognitive Values Histogram

From the figure above it can be seen that, the experimental class that uses project based learning model aided edmodo gets the average cognitive value of 78.1142 and the Control class that uses conventional learning gets an average value of 66.3529.

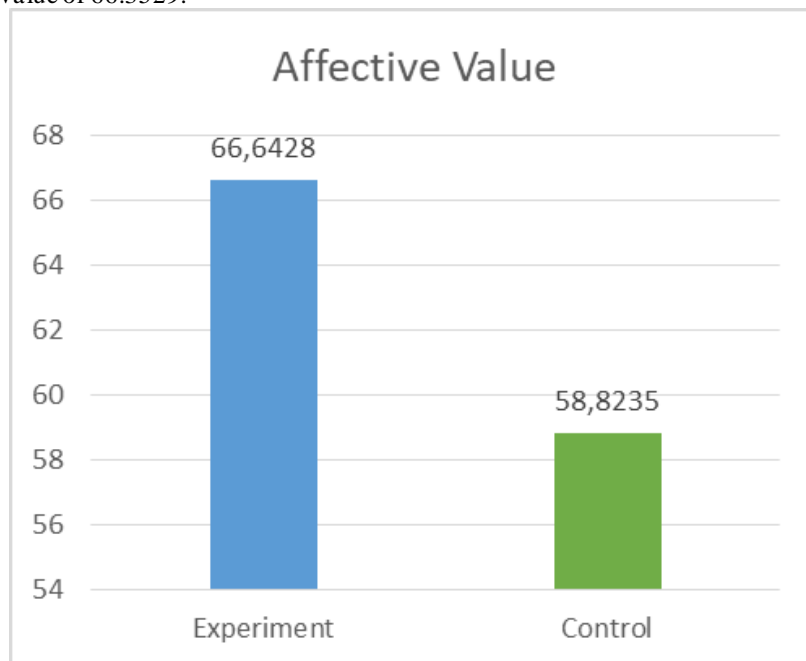


Figure 2. Comparison of Average Affective Values Histogram

From the figure above it can be seen that, the experimental class that uses project based learning model aided edmodo gets the affective average score of 66.6428 and the Control class that uses conventional learning gets an average value of 58.8235.

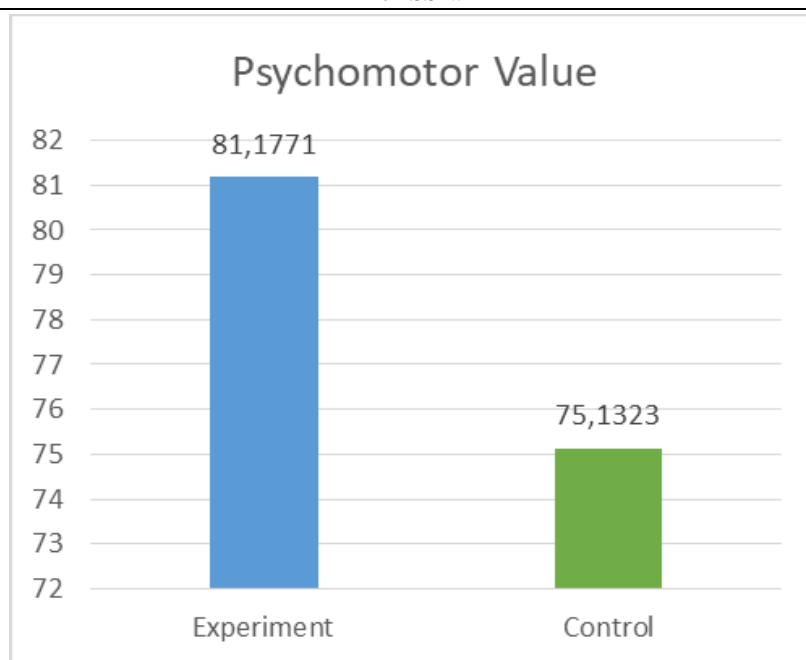


Figure 3. Comparison of Average Psychomotor Values Histogram

From the figure above it can be seen that, the experimental class that uses project based learning model aided edmodo gets the affective average score of 81.1771 and the Control class that uses conventional learning gets an average value of 75.1323.

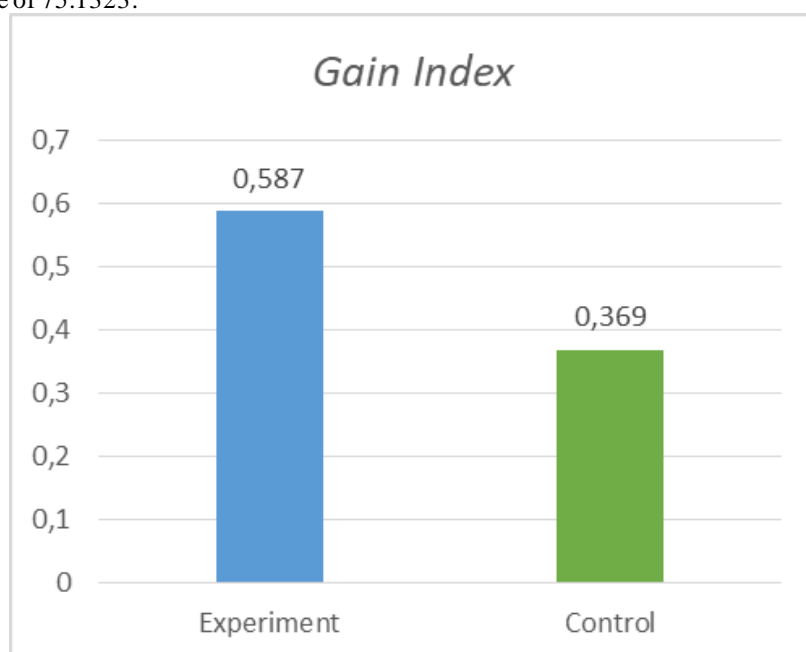


Figure 4. Comparison of Gain Index Value Histogram

From the figure above it can be seen that, the experimental class that using project based learning model aided edmodo got an average index gain value of 0.587 and the Control class which uses conventional learning get the index gain value of 0.369.

3.2. ANALYSIS

The first hypothesis states that " There's Difference in Learning Outcomes of Students Who Get Project Based Learning Aided Edemodo with Conventional Learning in the Subject of Two Dimention Animation Techniques on Class XI of SMK Batik II Surakarta. Based on the data obtained in this study, the results of the hypothesis test are known that, if $t_{count} > t_{table}$ then the null hypothesis is rejected, meaning that there is a difference or can be said to be significant. [1].

Table 2. Analysis T-Test Result of Learning Outcomes

Parameter	Competency	T values		Conclusion
		t_{count}	t_{table}	
Learning Outcomes	Cognitive	4,435	1,995	H_0 rejected
	Affective	2,175	1,995	H_0 rejected
	Psychomotor	2,344	1,995	H_0 rejected

From the analysis result that obtained shows the magnitude $t_{count} = 4.435$ with a significance level of 0.05 and $t_{table} 1.995$. Test criteria if $t_{count} > t_{table}$ then H_0 is rejected, so it can be concluded that there are differences in learning outcomes between the use of the project based learning model aided "Edmodo" with the use of conventional learning in the cognitive domain

From the analysis result that obtained shows the magnitude $t_{count} = 2.175$ with a significance level of 0.05 and $t_{table} 1.995$. Test criteria if $t_{count} > t_{table}$ then H_0 is rejected, so it can be concluded that there are differences in learning outcomes between the use of the project based learning model aided "Edmodo" with the use of conventional learning in the affective domain.

From the analysis result that obtained shows the magnitude $t_{count} = 2.344$ with a significance level of 0.05 and $t_{table} 1.995$. Test criteria if $t_{count} > t_{table}$ then H_0 is rejected, so it can be concluded that there are differences in learning outcomes between the use of the project based learning model aided "Edmodo" with the use of conventional learning in the psychomotor domain

The second hypothesis states that "The Effectiveness of the Use Project Based Learning Models Aided "Edmodo" in Increasing the Learning Outcomes of Two dimension Animation Techniques on Class XI SMK 2 Batik Surakarta

The results of the gain index analysis in the experimental class using the edmodo-assisted project-based learning model of 0.587 with the medium criteria. While the control class using conventional learning is 0.369 with the medium criteria. So it can be concluded that learning using the project based model aided "Edmodo" is more effective than learning using conventional models

4. CONCLUSION

Based on the results of the data obtained in this study, then it can be concluded as follows: (1) There are differences in the learning outcomes of two dimension animation techniques in multimedia class between students that using project based learning model aided "edmodo" and conventional learning model in terms of cognitive, affective and psychomotor values. (2) The use of project based learning model aided "Edmodo" is more effective than conventional learning models in improving the learning outcomes two dimension animation techniques on 11th grade students SMK Batik 2 Surakarta

With this research, (1) the results of this study can be used as a reference to improve learning outcomes and student activity. (2) the teacher can consider project based learning aided "edmodo" to be used as recommendation in an effort to improve learning outcomes two dimension animation techniques.

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