

## **BLENDED LEARNING MODEL TO IMPROVE STUDENTS' LEARNING INDEPENDENCE ON VISUAL PROGRAMMING COURSE**

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**Abstract-** This research aims at finding out the improvement of student learning independence (KBM) through blended learning. The research method employs quasi experimental with design. There are 23 students of Information Technology Education that divided into two sample groups, experiment class and control class as the research subject. Experiment class was treated nonequivalent pre-test and post-test and given blended learning, while the control group was given conventional learning. The research instrument consists of preliminary competence test (KAM) and questionnaire of student learning independence. The data are analyzed quantitative descriptive. The research result shows that student learning independence in blended learning class does not improve better than the one which get conventional learning.

**Keyword:** blended learning, learning independence

### **I. INTRODUCTION**

There is a great demand for independence and if it is not responded properly, it can create an unfavorable impact on the psychological development of students in the future. Students are required to be independent in order to complete the task of further development. To be able to be independent, students need opportunities, support and encouragement in order to achieve their independence.

Beni S. Ambarjaya (2012: 122) [1] stated that Independence is very important because independence is a personal attitude that is needed by every student. Students who have learning independence are able to analyze difficult problems, are able to work individually or work with groups, and have willingness to express ideas.

In fact, the student learning independence is very decreasing recently. This is based on Nursa'ban (2013) research [2]. which shows that in the first cycle the average student learning independence is only 47 while Zumbrunn (2011) [3] stated that the teacher / lecturer should carry out a learning process that can facilitate students

to have learning independence. It means that lecturers should design a learning that can encourage students to be independent in learning.

Based on the previous studies, it can be seen that the research on student learning independence through blended learning applied in higher education especially in Department of Information Technology Education has not been conducted yet, Therefore, research needs to be carried out to see an improvement in the learning independence of information technology education students through blended learning.

There are several indicators used to measure student learning independence. They are as follows; (1) building learning initiative; (2) diagnosing learning need; (3) setting the target or learning goal; (4) monitoring, managing, and controlling; (5) seeing difficulties as challenges; (6) utilizing and searching the relevant resource; (7) selecting and applying learning strategy; (8) evaluating learning process and result; (9) performing self efficacy. Those nine factors will be used as

indicator of learning independence in this research.

The research objective is to find out whether the improvement of students learning independence treated by blended is better than the ones who treated by conventional learning.

Based on the previous observation result in the Department of Information Technology especially in Visual Programming Course in which students learning independence is considered still low. It can be seen from the followings: 1) There is 25 % of 23 students able to complete the assignment individually, 2) there is 33% of 23 students able to solve their problem, 3) there is 37% students who believe in their choice, 4) and there is 5 % student who can manage themselves.

One of the lessons that can improve student learning independence is blended learning. This is in line with the research results conducted by Ismaniati (2015) [4] that blended learning can improve student learning independence in the lecture process.

## II. THEORETICAL REVIEW

Blended Learning is a learning that combines face-to-face learning and electronic learning (e-learning) (Torrao, 2007) [5]. Whitelock and Jelfs (2003) [6], provide several definitions of blended learning: (1) a combination of traditional learning with a web-based learning approach, (2) a combination of media and tools in the e-learning environment, (3) a combination of several learning approaches, the use of learning technology.

From some of those definitions above, it can be concluded that blended learning is

learning that combines face-to-face learning and internet-based learning. Through e-learning students are trained to learn independently. Students can strengthen their knowledge by finding their own knowledge they need through internet facilities with teacher's instruction.

By utilizing internet facilities, students can access learning resources anywhere and anytime. Nevertheless, face-to-face meetings are also required to bring lecturers closer to students. In addition, monitoring toward student responses can also be observed and given feedback.

Various studies have been conducted to examine the implementation of blended learning, including research conducted by Sari (2013) [7] which applying blended learning in Accounting Department. The results of her study concluded that blended learning strategy succeeded in increasing learning independence by 72.8%. Meanwhile, the results of Sahin's study (2010) [8] stated that students' learning abilities are better after blended learning implemented.

## III. RESEARCH METHOD

The research method used was Quasi Experiments. It employs the pretest and posttest class. The experimental design can be presented as follows:

$$\frac{O \ X \ O}{O \ \quad O}$$

Note:

O : Pretest and posttest KBM

X : Blended learning

The subjects of this study were students in the even semester of the 2018/2019 academic year in the Department of Information Technology Education at the

Faculty of Humanities, Education and Tourism. There were 23 students involved in this study; 11 students belonged to experimental class people and 12 students belonged to control class. Before the study was carried out, the two classes were first tested for equality. The selection of the experimental class and the control class was carried out randomly. The instrument of learning independence questionnaire used a valid questionnaire with a few modifications.

The results of the student learning independence questionnaire data were analyzed using inferential statistics. To determine the improvement of student learning independence, the normalized gain (g-gain) is calculated, with the interpretation of the n-gain category according to Hake (1999) [9] as presented in table 1 below:

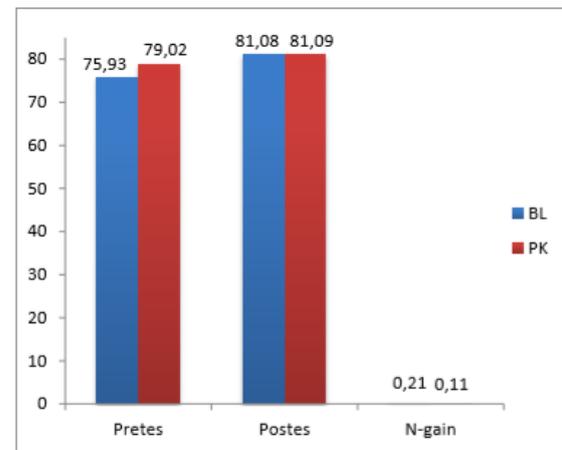
TABLE 1. CATEGOTY of n-GAIN

n-Gain (g)	Interpretasi
$g > 0,7$	Tinggi
$0,3 < g \leq 0,7$	Sedang
$g \leq 0,3$	Rendah

#### IV. FINDING AND DISCUSSION

Description of Student Preliminary Competence Data (KAM). The Student Preliminary Competence (KAM) describes the students' knowledge and skill on mathematics before being involved as subjects in the study. The KAM test is used to determine the equality of the research subjects. To obtain an overview of the quality of KAM, the data were analyzed descriptively so that the average, standard deviation, minimum value, and maximum value can be defined. The result of probability value is 0.200 and is greater

than the 0.05 significance level, so H0 is accepted.



Graphics 1. Graphic of pretest, post test and n-gain

The results of this study indicate that the test of the average difference in KBM improvement has a significant value of 0.094, and this significant value is greater than the significance level of 0.05, so that the null hypothesis is accepted. It means that there is no significant difference between the mean data for the improvement of students' KBM who get blended learning and those who get conventional learning at a significance level of  $\alpha = 0.05$ . Thus, it can be concluded that the overall improvement in students' learning independence who get blended learning is not better than students who get conventional learning.

Blended learning is learning that combines face-to-face learning and e-learning. This statement is in line with the findings of Sari's research (2013) which concluded that blended learning strategy succeeded in increasing learning independence by 72.8%. In addition, Sutisna (2016) [9] from the results of his research also concluded that blended learning model was effective to improve students' learning independence. If we

concern at some previous studies, it can be concluded that blended learning able to improve student learning independence because e-learning is an extension of classrooms that can be accessed by students anywhere. In this study, the improvement of student learning independence that received blended learning was not better than students who received conventional learning. However, if we see an improvement in the mean of the class with blended learning, the value is higher than the mean of the class with conventional learning, which is equal to 5.15 and 2.07. In addition, from the n-gain value it is also seen that the class with blended learning is higher in value than class with conventional learning, which is equal to 0.21 and 0.11. This proves that blended learning potentially improves student learning independence.

## V. CONCLUSION

Based on the formulation of the problem, the results of the study, and the discussion that were stated earlier, it concludes that the improvement in student learning independence in the class with blended learning is not better than in class with conventional learning. However, blended learning has the potential to improve student learning independence.

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