**THE USE OF EDMODO ASSISTED E-LEARNING ON LEARNING OUTCOMES**

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**Abstract**

E-learning is one form of internet use in the field of education. This study of effective assisted e-learning on learning outcomes. This study uses a Quasy-Experimental Research Design with Pretest-Posttest and Control Group. The method used to collect research data using tests and observations. Data were analyzed by the level of significance of 0.05. Whereas the effectiveness criteria used the Gain from Huke. R. R. The results of the study showed that there was a significant difference between groups of students in the control class and the experimental class. This is indicated by the sig value (p-value) <0.05. Judging from the gain value, the experimental class (g = 0.55) and the control class (g = 0.40). This means that the use of edmodo-assisted e-learning is more effective in improving learning outcomes than the control class.

**Keywords:** E-learning, Edmodo, Learning Outcome

**Introduction**

At present the internet has been very widely used in Indonesia. Almost all citizens in Indonesia are no stranger to the development of the Internet. Internet is now not only presented in the form of a computer layer, but can also be enjoyed on the mobile phone layer. technological developments and information should also be balanced with appropriate media, methods, or class management when applied in learning.

Learning is inseparable from learning and learning theory. According to Hamalik (2008: 27) learning is not just remembering, but broader than that, namely understanding. Learning outcomes are not a mastery of the results of training, but change behavior. According to Purwanto (2009: 43) Learning is the process of making changes in students by interacting with the environment to get changes in cognitive, affective, and psychomotor aspects. In behavioral learning theory, the learning process is sufficiently done by binding between stimulus and response repeatedly, while in cognitive theory, the learning process requires understanding. From the previous description, it can be concluded that learning is learning is a process to make changes in a person by interacting with the environment. Changes that can be seen are in cognitive, affective, and psychomotor aspects. These changes are the effects of interactions between methods and conditions.

Furthermore, according to Suhana (2014: 37) Learning is one approach in order to anticipate changes in behavior of students in adaptive and generative ways. The learning model is closely related to the learning style of students (learning style), it can be concluded that learning is the effort of the teacher to realize the learning process from the stages of planning, implementation, and evaluation to realize effective learning. The learning process is inseparable from the methods and strategies used in learning.

In fact, learning is still found in schools that are centered on the teacher (teacher centered). Teacher-centered learning has the tendency of passive students in learning. When the learning process takes place, the teacher usually only delivers material with standard media. Teachers only deliver material through presentations with the help of computers in the form of power point slides or lectures. This situation makes students passive when the learning process takes place.

At present, the need to obtain information is facilitated by the internet. In the field of education, to obtain an effective and innovative learning process the things that need to be considered are classroom management used in learning. One form of classroom management that utilizes internet technology in the field of education is e-learning. E-learning itself is a management class that is made in digital form or through electronic devices and connected to the internet. Research conducted by Helianak, A. S, & Surjono, H. D (2014) concluded that the use of e-learning proved to have good results compared to learning with power point. Better results are seen from the number of students who complete at the time of learning.

Whereas according to research Widodo, I & Mukminan (2018) Learning outcomes using e-learning have better results than not using e-learning. the average N-gain in the experimental class was higher than the control class. The experimental class is a class that uses e-learning while the control class is a class without using e-learning. Good e-learning is e-learning that is tailored to the characteristics of students. According to Kusumaningrum, D. A & Marpanji, E (2014, p. 30) E-learning can be optimized by giving visualization and adjusting to human memory capacity so students will be more active in learning.

When observing on February11, 2019 at SMK Negeri 2 Yogyakarta it was found that the use of e-learning as classroom management was still underutilized. Most of the learning process is still centered on the teacher (teacher centered) and uses simple media in learning. Examples of media used in learning are using presentation slides.

The need for interaction between teachers and students to understand material takes a lot of time. According to research conducted by Aeni (2017) during the learning process more interaction and communication between teachers and students is needed, while the availability of face-to-face learning time is still lacking. The lack of limited learning time can be overcome with additional learning outside of school. One of them is using e-learning with the help of Edmodo with the blended learning model.

In addition to increasing teacher and student interaction, e-learnning effectively improves learning outcomes. According to research conducted by Nu'man (2014) e-learning is proven to influence the effectiveness of learning. With e-learning learning will be more effective than conventional learning (teacher-centered) in terms of learning outcomes. The form of e-learning used in this study is Edmodo. According to research conducted by Watoni (2017), the use of edmodo has positive results if applied in learning. From the results of research conducted by Watoni (2017) the average learning outcomes of students who were given learning with Edmodo media were higher than the minimum completeness criteria. Based on the data obtained, the average learning outcomes of the experimental class students is 80.10 while the completeness value is 75.

The subjects used in this study were Simulation and Digital Communication subjects. Digital simulation and communication in Vocational Schools is the development of KKPI subjects (Computer Ability and Information Management). Seeing the conditions in the field, namely at SMK Negeri 2 Yogyakarta, supporting facilities for the implementation of e-learning in the form of edmodo are sufficient and complete. There are a number of computers and internet connections or enough wifi networks. In addition, Digital Simulation and Communication subjects have been taught to make edmodo accounts, and there are even special materials about edmodo. But unfortunately many schools still apply simple learning. Based on the existing problems, the research was conducted to determine the effectiveness of the use of edmodo on learning outcomes when applied at school. The focus of the research is at SMK Negeri 2 Yogyakarta.

**Methods**

The type of research used in this study is quasi-experimental research with quantitative evidence. Experimental research itself is scientific and systematic research that manipulates one or more variables. This study uses quasy-experimental design with pretest-posttest and control groups. The variables used in this study, namely:

1. Independent variable (use of Edmodo assisted e-learning (X1), and computer assisted learning (X2))
2. Dependent variable (experimental class learning outcomes (Y1) and control class learning outcomes (Y2))

The population in this study was a class X student of Computer and Network Engineering expertise program at SMK Negeri 2 Yogyakarta. The research sample was obtained by intax group comparison. The research data were analyzed by t-test with the help of SPSS 18. The testing criteria:

1. If (p-value) <0.05, Ho is rejected
2. If (p-value)> 0.05, Ho is accepted

Furthermore, to find out the effectiveness criteria for using e-learning based on edmodo, calculations were performed using the gain formula according to Huke R. R. (1998: 65)

$$g=\frac{Score Posttest-Score Prestet}{Score Max-Score Pretest}$$

After the gain value is obtained, the next step groups into three criteria as in the following table:

**Table 1**. Gain Criteria

|  |  |
| --- | --- |
| Value of Gain | Criteria |
| 0,7 $<$ *g* $<$ 10,3 $\leq $ *g* $\leq $ 0,70 $<$ *g* $<$ 0,3 | HeightMediumLow |

**Findings and Discussion**

The subject of this research is the Computer and Network Engineering expertise program which consists of 2 classes and has the same ability. Class X TKJ 1 acts as the control class and X TKJ 2 acts as the experimental class. Learning in the control class and experimental class was conducted for 3 meetings. Based on the results of the post-test value data analysis of the subject matter of making e-books in the control class obtained descriptive statistical data for student learning outcomes are as follows:

**Table 2**. Data on Student Learning Outcomes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Intruction | Sum | Average | Lowest score | Highest score |
| Presentation Slide | 2328,00 | 77,60 | 64,00 | 92,00 |
| Edmodo assisted e-learning | 2496,00 | 83,20 | 64,00 | 96,00 |

Based on table 2, the number of learning outcomes obtained in the experimental class or class given edmodo-assisted e-learning treatment has a number of learning outcomes that are greater than the number of learning outcomes obtained in the control class. In addition, the average value of the experimental class learning outcomes is greater than the control class. The average learning outcomes in the experimental class and the control class can be seen as follows:

**Figure 1**. Average of Learning Outcame

The results of this study are in line with the research conducted by Setyono (2015) which shows that the experimental class has a higher average than the control class. the experimental class had an average achievement of 33.79 while the control class was 17.8 lower.

Data obtained at the time of the study were tested for normality and homogeneity. The normality test is used to determine the distribution of data obtained normally or not. The normality test is used to determine which test will be used next. Abnormal data, testing using non-parametric tests. While the normal data uses parametric tests. Tests were carried out with the help of SPSS 18 software.

The data used for the normality test is data from post-test learning outcomes. The results of the calculation of the normality of learning outcomes in the control class and experimental class are as follows:

**Table 3**. Normality Test Results

|  |  |  |
| --- | --- | --- |
| **Data** | **Grade** | **Conclusion** |
| **KS** | **Sig (*p-value*)** |
| Control Class | 0,806 | 0,534 | Normal |
| Experimental Class | 1,280 | 0,076 | Normal |

Based on the normality test obtained data in the experimental class and the control class are normally distributed. This is indicated by the sig value (p-value) having a value greater than 0.05. Furthermore, the homogeneity test obtained an F value for learning outcomes of 3.393 and a sig value (p-value) of 0.071. Because sig (p-value) is greater than 0.05, the data obtained at the time of the study are homogeneous and have many data variations. Because the data is normally distributed, then for the next test in the control class and experimental class using parametric tests in this case using the t-test.

Based on testing on the post-test data on learning outcomes in the control class and experimental class, the T value was 2.688 with a sig value (p-value) of 0.009. Based on the results of the test, it can be concluded that there are significant differences in learning outcomes in the class given edmodo-assisted e-learning treatment with classes that apply computer-assisted learning (relying only on presentation slides). This is evidenced by the calculation of the sig value (p-value) smaller than 0.05.

Based on the calculation of the gain value of the learning outcomes in the control class, the gain value is 0.40. Because the gain value is 0.40, the gain value of learning outcomes in the control class is in the criteria of "medium". Furthermore, the calculation of the gain value in the experimental class is carried out. The gain value of learning outcomes in the experimental class obtained a gain of 0.55. Because the gain value is 0.55, the gain value of the learning outcomes in the experimental class is in the criteria of "medium".

In the experimental class and the control class have the same gain criteria. However, judging from the results of the calculation of the gain value of the experimental class has a greater gain than the control class. So it can be concluded that Edmodo assisted e-learning learning is more effective in improving student learning outcomes than the control class.

The results of this study are in line with the research conducted by Nu'man (2014) which states that Experimental class learning is edmodo-based learning more effective than learning in the control class in terms of student learning outcomes. Calculation of normalized gain values in the experimental class was also higher than the control class. The gain value of the experimental class g = 0.80 and in the control class g = 0.70.

The experimental class using edmodo-assisted e-learning proved to have better learning outcomes than the control class. The experimental class encourages students to have high curiosity. A high sense of curiosity is evidenced by the attitude of students in the discussion. Many of the students in the experimental class asked, answered, and criticized the material that was the topic of discussion. The topic of discussion was uploaded in Edmodo, while asking, responding, and criticizing the material through the comments column.

The difference in learning outcomes in both treatments does not mean Edmodo-assisted e-learning is better than learning with presentation slides. But Edmodo-assisted e-learning learning can be used as an alternative to classroom management in the learning process. However, before conducting learning with e-learning, you must also look at several aspects such as the availability of supporting infrastructure, student abilities, the nature of the material, teaching materials, and the condition of the teacher. Without these considerations any learning with management cannot improve learning outcomes.

**Conclusion**

Based on the results of the study, the following conclusions are obtained:

1. The post-test scores of learning outcomes in the experimental class ($\overbar{x}$= 83.20) differ significantly from the post-test scores of the control class learning outcomes ($\overbar{x}$= 77.60). This is evidenced by the sig value (p-value) which is smaller than 0.05.
2. Edmodo-assisted e-learning learning effectively improves learning outcomes in Digital Simulation and Communication subjects at SMK Negeri 2 Yogyakarta. Based on standard gain calculations on learning outcomes, the experimental class has a higher gain value than the control class. In the experimental class the value (g = 0.55) with the category "medium" has a value greater than the gain value of the control class (g = 0.40) in the category of "medium".

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