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The Implementation of E-Learning Models to Improve Activities and Learning Outcomes

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Abstract

The research aims to: (1) the application of E-learning models; (2) enhancing learning activeness; and (3) improving learning outcomes by using E-Learning models in automotive basic technology learning subjects. This research is Classroom Action Research (CAR). Data collection techniques used observation, tests and documentation. Data analysis techniques used quantitative descriptive analysis. The results showed that: (1) the application of the E-learning model was carried out by giving explanations about edmodo applications, giving examples of questions and solving them, giving students the opportunity to ask questions, opening uploaded material, giving assignments through edmodo applications, and working on them online; (2) the average percentage of learning activeness in cycle I was 57.7% with the category of moderately active, increased in cycle II to 68.9% with the active category, and increased again in the cycle III to 81.8% with very active criteria; (3) the average value in the first cycle of 65,25 with 40% mastery learning, increased to 74.25 in the second cycle with 65% mastery learning, and increased to 78.75 in the third cycle with 80% mastery learning.

Keywords: E-learning, Activities, Learning Outcomes

Introduction

Vocational School is a high-level vocational education provided by the government in order to prepare graduates who are ready to work according to their competencies. The basic automotive technology expertise competency is the automotive field expertise competency at the Vocational School which emphasizes expertise in the field of mastering light vehicle repair services. Equipping with basic automotive technology competencies prepares students to be ready to work in the field of maintenance and repair work in the business / industrial world. One indicator of the achievement of these competencies can be seen from the grades of students.

Table 1. Results of the XB class mid-term light vehicle engineering class 2019/2020 school year.

Class	XB vehicle engineering
Total students	20
Mean	69,6
Pass	9
Not pass	11

Table 1 shows the average value of students for XB class of light vehicle engineering by 69.6 with the number of students who finished 9 people and 11 students who did not complete so it can be concluded that the average value of student learning outcomes at SMK Muhammadiyah Piyungan is still low. Based on observations at SMK Muhammadiyah Piyungan on 22-25 February 2019, learning activities are still centered on the teacher, especially when the teacher explains the learning, many students do not listen to the teacher's explanation, some students tend to be passive and almost no one asks questions or gives questions responses to the material that has been submitted by the teacher. The main factor causing the low student learning outcomes is the lack of active students

when learning takes place and the learning model is still teacher-centered, or still using conventional learning models.

Abdulmajid, et.al (2017) say that conventional learning models cause student inactivity in the learning process so a technology-based learning model is used so that learning activities will be more effective, efficient, and increase creativity and improve student learning outcomes. In other words the lack of interaction between students and teachers, and it is known that the delivery of material in the learning process of automotive basic technology still uses teacher-centered lecture methods results in less stimulus for students to be actively involved in the learning process. The lecture method itself has several weaknesses as explained by Sanjaya (2006: 148), namely: (1) material mastered by students from lecture results will be limited to those held by the teacher; (2) lectures that are not accompanied by demonstrations can result in verbalism; (3) teachers who lack good speech skills, lectures are often seen as a boring method; (4) through lectures, it is very difficult to know whether all students have understood what was explained or not. Student learning activeness is very important because activeness will create an effective learning situation. Active according to Rusman (2012: 101) can be in the form of physical and psychological activities. The activeness of students in learning takes a variety of activities from physical activities to psychological activities, meaning that learning activities involve both physical and moral activities (Sudjana, Nana. 2017: 114).

Learning outcomes are achievements that have been achieved by students after receiving instruction within a certain period. Learning outcomes can also be interpreted as a reflection of the learning effort. The better the student's learning effort, ideally the better the learning outcomes they will achieve. Learning outcomes are abilities possessed by students after he has received his learning experience (Sudjana, 2011: 22). Some of the findings of problems in the XB class of SMK Muhammadiyah Piyungan above can be overcome through the application of e-learning learning models. Through e-learning, educators and students do not have to be in one dimension of space and time. The education process can run at any time by ignoring the two things (Darmawan, 2014: 10). Edmodo is an interesting application for teachers and students with social elements that resemble Facebook, but there is greater value in this social networking-based educational application (Basori, 2013: 1). Rosenberg (2001) explains that e-learning or the internet enables learning to use technology as a means of learning. E-learning is all forms of learning activities that utilize electronic media for learning (Gilbert, et al in Wahyuningsih, 2017: 3). In short, William Horton (in Effendi, Empy, & Zhuang Hartono, 2005) argues that E-learning is a web-based learning activity (which can be accessed from the internet). E-learning based models can help students make it easy to access their subject matter. This provides an opportunity for students to be able to study the material at any time without the limitation of time and place. The basic nature of e-learning itself that is flexible and distributed is very user friendly because users in e-learning have freedom in terms of, time, place, speed, the content of materials, learning styles, types of evaluation, and independent learning (Darmawan, Deni. 2014 : 3).

The application of the e-learning based model in class XB SMK Muhammadiyah Piyungan aims to increase student activity and student learning outcomes in automotive basic technology subjects so that in the long run it can increase interactivity and student independence in learning both at school and outside of school.

Method

The research method uses classroom action research consisting of 3 cycles and six meetings, each cycle having four stages: action planning, action implementation, observation, and reflection. The research subjects were students of Class XB SMK Muhammadiyah Piyungan in the academic year 2019/2020. The number of students is 20 male students. The object of research is the activeness and learning outcomes of students. Data collection techniques using observation, tests, and documentation. The research instrument consisted of observation sheets, tests, and documentation. Data analysis techniques using quantitative descriptive analysis.

Results and Discussion

Active Learning

Based on prasiklus observations, it was found that students were not active when learning took place, some students were silent and almost no one asked questions or responded to the material that had been delivered by the teacher. Unlike the case after the e-learning learning model is applied.

Based on the results of the study indicate that the application of e-learning learning models in automotive basic technology subjects can increase student learning activeness. This can be seen from the acquisition of the average percentage score from cycle I, cycle II, and cycle III. Based on the results of observations of the activeness of learning cycle I obtained an average value of 57.7%. This value is in the interval between 43.76% - 62.50% with

the category quite active. The average percentage of 57.7% has not reached the minimum criteria set that is active with a percentage of 75%. Thus, the study will continue with cycle II.

In cycle II, the application of e-learning learning models is optimized in learning so that students' learning activeness is getting better. Based on the results of observations of learning activeness in the second cycle obtained an average value of 68.9%. This value is in the interval between 62.51% - 81.25% with the active category. The average value of the percentage of 68.9% has reached the established success indicator which is active but has not reached 75%, to strengthen the results of observations the research activity was continued in cycle III.

Based on observations of learning activeness in cycle III, the average value of 81.8% was obtained. This value is in the interval between 81.26% - 100% with a very active category. The average value of the percentage of 81.8% has reached the established success indicator which is active. The activeness of students in learning takes a variety of activities from physical activities to psychological activities, meaning that learning activities involve physical and moral activities (Dimyati, 2009: 114). A teacher should be able to create an atmosphere of learning that can encourage students to actively learn to gain knowledge, absorb and reflect certain values (values) and are skilled in performing certain skills (skills). Students will more easily participate in learning if learning is in a pleasant atmosphere. One way that teachers can do to create a pleasant learning atmosphere is to encourage students to be actively involved (Khanifatul, 2012: 37)

Based on the data above, it can be explained that the activeness of student learning obtained using observation sheets shows an increase. Based on observations it is known that the average percentage of learning activeness in the first cycle of 57.7% with the category of moderately active, increased in the second cycle to 68.9% with the active category, and increased again in the third cycle with an average percentage of 81.8% with very active criteria. Thus, the E-learning learning model is effectively applied to learning basic automotive technologies to improve student learning activities.

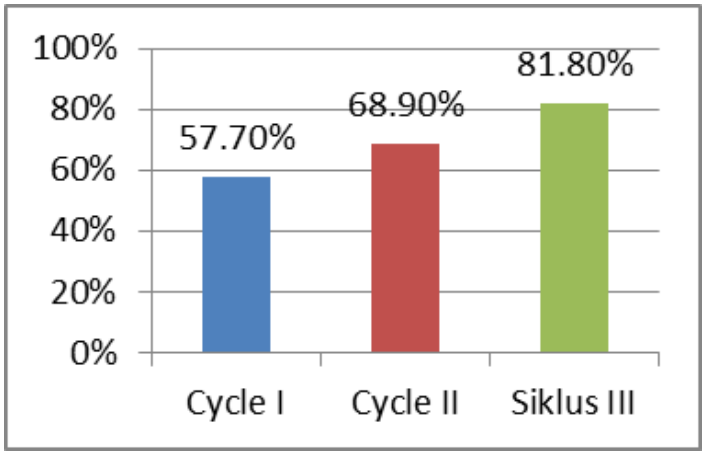


Figure 1. Comparison diagram of learning activities in cycle I, cycle II, and cycle III

Research conducted by Watkins (2014) confirms the e-learning model with the use of online chat rooms and e-mail modes providing benefits for students such as better retention, and increased participation, which can increase student involvement and creativity in the learning process.

Learning Outcomes of Basic Automotive Technology

The results of the midterm examinations in the average pre-cycle learning outcomes of automotive basic technology are 69.6 and are still below the specified minimum completeness criteria of 75. Students who completed 20 students were 9 students or 45% and 11 students or 55% had not complete learning.

In the initial learning activities with an e-learning based learning model, the teacher opens with an opening greeting and the class leader leads to praying to start learning. Students respond to checking the presence of students from the teacher. Students respond to the learning objectives to be achieved. Teachers and students apperception by asking questions to direct students to the material to be studied.

In the core activities, students have explained the material. The teacher asks questions related to the material being studied. The teacher gives examples of questions and asks students to discuss and solve several questions related to the material. The teacher provides opportunities for students to ask questions and discuss material that is not

yet understood. After that students can open material that has been uploaded by the teacher on the Edmodo application. The teacher gives assignments to students through the Edmodo application and asks students to do it online. At the end of the learning activity, students are invited by the teacher to reflect together on the material that has been learned. The teacher guides students to conclude the material they have learned. The teacher reinforces the material that has been delivered. The teacher encourages students to learn the material at the next meeting which is the concept of occupational safety and health. The teacher closes the learning with greetings.

The application of the e-learning based learning model at the end of the cycle I carried out data collection of students 'level of understanding of the material taught to measure students' abilities after learning how to apply and use the principles of occupational safety and health. Tests are given in the first cycle in the form of multiple-choice tests totaling 20 items. From the results of the first cycle test, obtained the highest value data obtained by students is 75 and the lowest value is 0 with an average of 65.25. The results of the first cycle showed that the average value of 65.25 had not yet reached the minimum completeness criteria set at 75, so the study continued in cycle II. The reason for the low value of students' initial ability due to lack of student activity in the learning process, even if just asking. More students play alone or tell stories with friends so that the learning process is still passive. This resulted in student learning outcomes not as expected. To help students improve their learning outcomes, the teacher tries to explain the material several times by giving examples of questions to students.

After the first cycle is completed, then there is a reflection on the learning process with the material applying and using the principles of occupational safety and health. Reflection is carried out to evaluate all programs or plans that have been implemented in cycle I. Based on the results of the study, there are still weaknesses that need to be corrected so that the learning process in the next cycle can be carried out properly and successfully. The weaknesses include the formation of groups of students who are clever to become one group and who feel less form their groups. Thus group learning is more dominated by groups with smart students.
Based on the results of observations of learning cycle activeness obtained an average value of 57.7% at intervals of 43.76% - 62.50% with the category of quite active. From the results of the first cycle test, obtained the highest value data obtained by 75 students and the lowest score of 30 with an average of 65.25. The results of the first cycle showed that the average value of 65.25 had not yet reached the minimum completeness criteria set at 75, so the study continued in cycle II.

To overcome the above weaknesses, in the implementation of the second cycle selected smart students to become group leaders. The task of the group leader is to coordinate the group members to compete with other groups in solving problems given by the teacher. The realization is that in the next cycle the group representatives who come forward must take turns. Thus group leaders who have more ability can teach and prepare their friends to come forward to solve the problem.

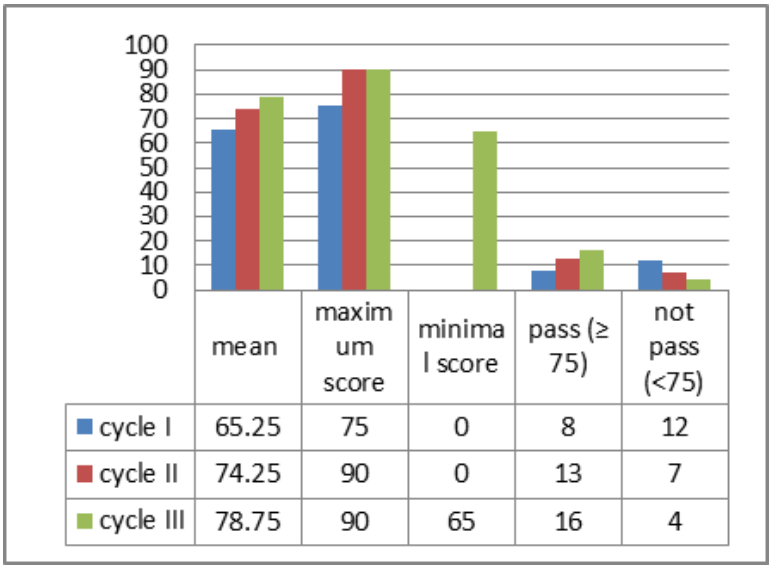
Based on the results of research in the first cycle, researchers also produced some important input as a guide and consideration of the implementation of actions in the second cycle. An important note is that learning using the e-learning model is appropriate, but has not yet reached the mastery of learning expected to reach 75%. For this reason, image media are needed so that students can improve their ability and knowledge to apply and use the principles of occupational safety and health. The making of groups is based on equal distribution of abilities so that discussions can proceed according to plan. Representatives of each group in completing the results of the discussion must take turns with other friends.

The application of the e-learning based learning model in cycle II is carried out more optimally. At the end of the second cycle, data collection was made on the level of students 'understanding of the material being taught to measure students' abilities after learning the principles of contamination control. In Figure 1 it can be seen the results of tests in the second cycle that many students who completed from 8 students 40% in the first cycle increased to 13 students or 65% in the second cycle, and the average student score from 65.25 in the first cycle to 74, 25 in cycle II with an increase of 9.00, but the average value has not reached the minimum completeness criteria set at 75, then the study continued in cycle III. After the second cycle is completed, then there is a reflection on the teaching and learning process of the function material and battery construction. Reflection is carried out to evaluate all programs or plans that have been carried out in cycle II. Based on the results of observations of learning activeness in the second cycle obtained an average value of 68.9%. This value is in the interval between 62.51% - 81.25% with the active category. The average percentage value of 68.9% has reached the established success indicator which is active but has not reached 75%. Students who completed the second cycle were 65% with an average value of 74.25 in the second cycle with an increase of 9.00. Based on observations made in the second cycle, students can master the material well and can do the post-test questions in the second cycle with satisfactory results. This can be seen in the results of tests conducted by students where there is an increase

compared to the first cycle test. Thus it can be concluded that the learning outcomes increase but the learning completeness has not reached 75%.

At the end of cycle III data collection was taken on the level of students 'understanding of the material being taught to measure students' abilities after learning the energy conversion machine process parts. The test given in cycle III is in the form of multiple-choice tests totaling 20 items. From the results of the third cycle test, obtained the highest value data obtained by students is 90 and the lowest value is 65 with an average of 78.75. The results of the third cycle test showed that there was an increase in the average when compared with the value of the second cycle of students, namely from an average value of 74.25 students increased to 78.75. The mean value of 78.75 had reached the minimum completeness criteria set by 75, so the research was carried out until the third cycle.

Based on the description above, shows that the application of e-learning based learning models can improve learning outcomes of automotive basic technology. The e-learning learning model with the Edmodo application is as follows (Hayati et al, 2013: 6) user interface, adopting the look like Facebook, in simple Edmodo relatively easy to use even for beginners though. Compatibility, Edmodo supports previewing various types of file formats such as pdf, ppt, Html, SWF, and so on. Applicative, Edmodo is not only accessed by using a PC (laptop/desktop) but can also be accessed using gadgets based on Android OS and IOS.



	mean	maximum score	minimal score	pass (≥ 75)	not pass (<75)
cycle I	65.25	75	0	8	12
cycle II	74.25	90	0	13	7
cycle III	78.75	90	65	16	4

Figure 1 Comparative Diagram of Learning Results Cycle I, cycle II, and cycle III

Research conducted by Ridwan (2014) shows that there is an effect of e-learning-based learning on student achievement in class XII Accounting for Fiqh Subjects at SMK YPM 3 Taman Sidoarjo.

Improvement of student learning outcomes in learning subjects Basic automotive technology with e-learning models can be seen from student learning outcomes before and after actions taken in the form of initial ability scores, namely midterm, final scores for the first cycle, second cycle, and third cycle.

Conclusion

The conclusions of this study can be formulated as follows.
1. The application of the E-learning learning model can increase the activity of learning automotive basic technology subjects in class XB students at SMK Muhammadiyah Piyungan.
2. The application of the E-Learning learning model can improve the learning outcomes of automotive basic technology subjects in class XB students at SMK Muhammadiyah Piyungan..

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