

E- LEARNING AS A TOOL FOR PREPARING TEACHER IN INTERNATIONAL VOCATIONAL SCHOOL

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Abstract:

This paper aims to discuss about preparing teacher in international vocational school by implementing Industrial Management courses through e-learning. The implementation of e-learning is intended as an effort to improve the quality of learning and provide concrete examples of the use of learning technologies to students who are expected to become a teacher in international vocational school. The method used in this study was done by class action research (CAR) model that was developed by Elliot. Modification of this model was done to fulfilled the need assesment in characteristic of Industrial Management Course. This research was done by learning in class room and e-learning in several cycle until the indicator of this research was achieved. Analyze will be done by direct observation in class room learning, analyze from the e-learning report, questionnaire to the students and test. The results showed implementation of e- earning in Industrial Management Courses give the effect on increasing student activity both in the e-learning and in classroom that was indicated by the increasing number of students who attend in class, focus on class, do job, respond in class, give more time to learn and practice questions. E-learning has an impact on improving students' competency that indicated by increasing the value of pretest and posttest from 67.11 to 78.4.

***Keyword :** e-learning, industrial management, international vocational school*

Introduction.

Globalization brings an enormous influence on a nation's civilization. In addition to free trade and labor, globalization is also venturing into the world of education as indicated by the emergence of international schools and universities in Indonesia. Government has established the Law UU No. 20 Tahun 2003 about National Education System to improve the quality of labor. Article no 50 in paragraph 3 of the National Education Law states, "Government must be established international school at every level of education units in each region". One type of educational unit was developed to international school is Vocational School (SMK). Directorate of Vocational Education (Direktorat Pembinaan SMK) has developed 246 a pioneering international standard vocational school (SMK RSBI). Department of Electrical Engineering Education as a partner of vocational teacher was expected to play an active role in order to produce teacher candidates who are competent in the field of science and technology in the development of strategies and recent learning. Students and graduates should be equipped to be able to be a vocational school teacher. One of innovation is the implementation of E-Learning as a learning media and learning technologies.

There are many definitions about e-learning, but in this article e-learning define as the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material. (Stockley, D, 2006). E-learning is a means of education that incorporates self-motivation, communication, efficiency, and technology. The concept of e-learning is essentially arise because of the limitations of the interaction between teachers and students as a result of constraints related to limitations of space, time and distance jarak (Chu et all, 2008). E-learning is intended to complement the teaching, not to replace the teacher in teaching and learning activities so that it is very important is the increase in the delivery of learning materials

and communication between teachers and students. E-learning can be implemented by electronic media as a media to deliver content and communication (Surjono, 2007). E-learning can be implemented in synchronous and asynchronous mode. The result of e-learning research shows implementation of e-learning can increase the frequency, activity and motivation to learn the impact on improving student competence (Ali, 2009). Dedi Karmin et.al (2011) states that the e-learning can enhance the learning materials to students of Engineering Thermodynamics. Other researchers are Budi K and Dedy S (2007) states that the learning process through the e-learning can support the learning activities that includes teaching, discussion, reading, assignments, presentation and evaluation by optimizing the process of communication between teachers and students, between students with learning resources, and communication can be established between the students. M. Rafie and Wismanu S (2011) states that learning with e-learning can realize the creation of interaction between students and teachers, through the evaluation of effectiveness of online exams, and learning resources. Jarnawi, et al (2011), through the study of e-learning, students' mathematical abilities can be improved.

Industrial management is a course deals with an understanding of management concepts and their application in industry. Learning process required an innovative learning system to provide additional supplies for the students. Lecturers should be able to develop a learning system that can be accessed by students is not limited in the classroom at any time but students experiencing problems in the real world can gain an understanding and resolution through electronic-based learning systems (adsad). Students are expected to master the material and understand the learning process with information technology that has an impact on a student's readiness to become a candidate for vocational school teachers in the international standard. One of indicators that must be fulfilled as international schools is the ability in implementing information and communication technologies for education and learning. Therefore, prospective teachers who will teach in the vocational school should be equipped with international standard methods, media, innovative strategic and technologies to be able to carry out their duties properly

Method

The method used to prepare prospective teachers at international vocational school was conducted by class action research (CAR). The subjects were students of Electrical Engineering Education Departement who attend classes in Industrial Management courses in second semester at 2010/2011 academic year. The research used Elliot and Lewin model as seen in figure 1.

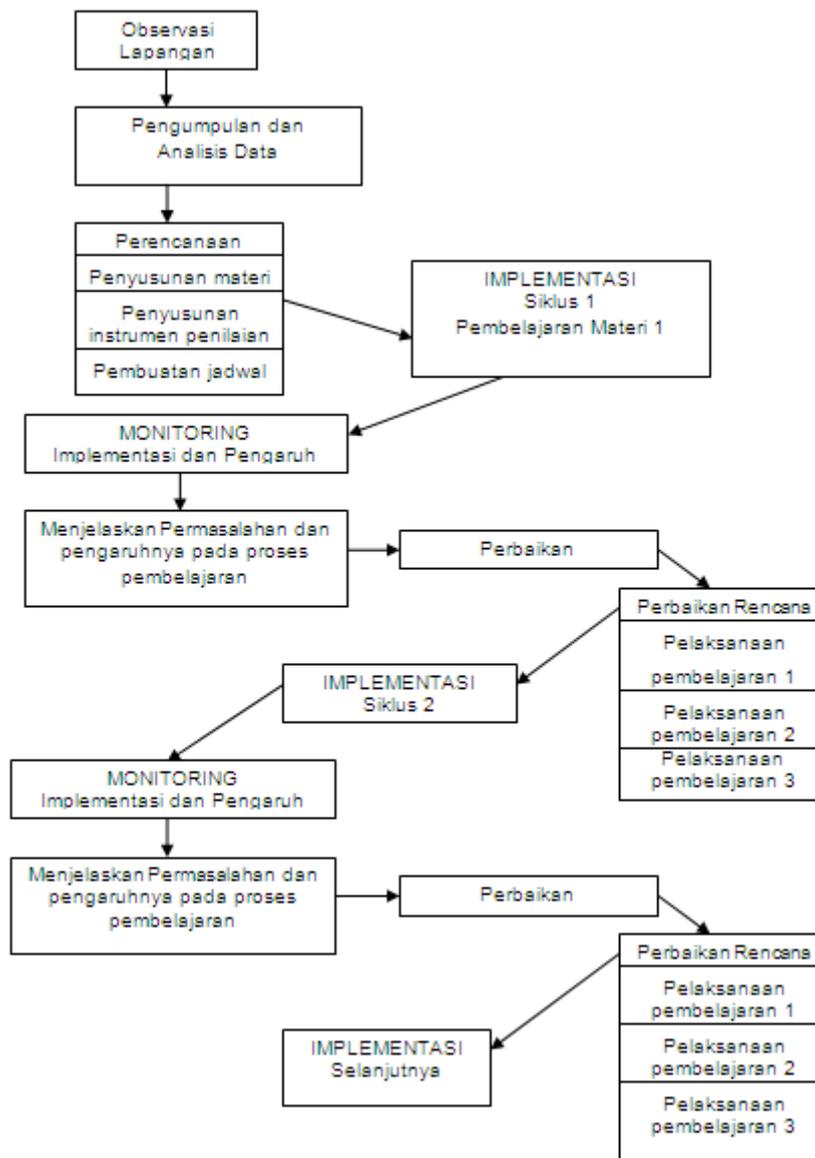


Figure 1. Model Development in Industrial Management Learning Process

Intrument for data collection was done by check list observation and questionnaire. Students's competence was measured by pretest and posttest.

Techniques of data analysis using qualitative descriptive analysis of the report of the events during the process of research, analysis, reflections and conclusions and recommendations from the planning up to the stated completion of the cycle is done. Description of the diary (diaries), the profile of learning (lesson profile) and the performance of research subjects (samples of children`s work) will be equipped with self-assessment and assessment results sekelompoknya friend.

Result

1. Preparation

a. E-Learning Development

E-learning was developed by Learning Management Systems (LMS) Moodle that can be accessed at <http://besmart.uny.ac.id>.

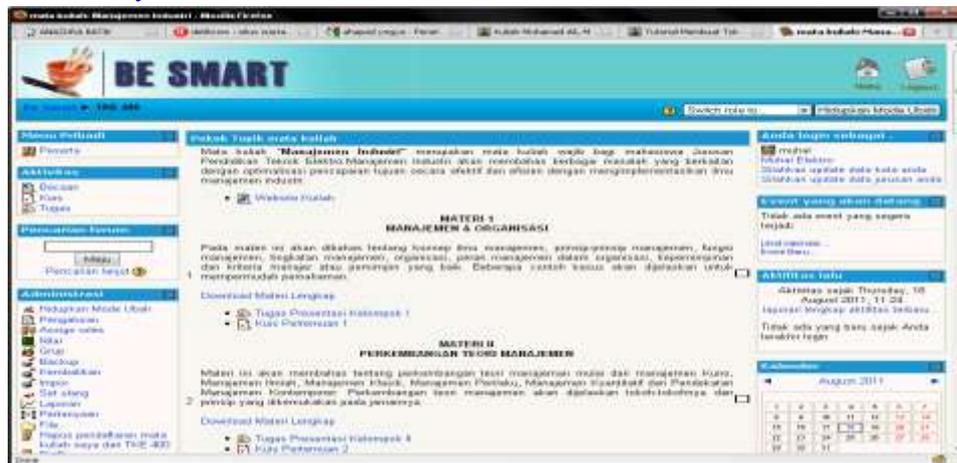


Figure 2. E-Learning Content for Industrial Management Course

a. Feasibility Test of E-Learning By Expert

No.	Aspect of Assesment	Explanation
1.	Learning Materials are available in E-Learning system	Yes
2.	Scope of learning materials in accordance with the syllabus	Yes
3.	Learning materials in accordance with the purpose of learning	Yes
4.	The instructional material was arranged systematically	Yes
5.	Learning material has been uploaded on the server of E-learning	Yes
6.	Learning materials can be accessed by students	Yes
7.	Tasks and exercises can be accessed by students	Yes

1. Action in Classroom

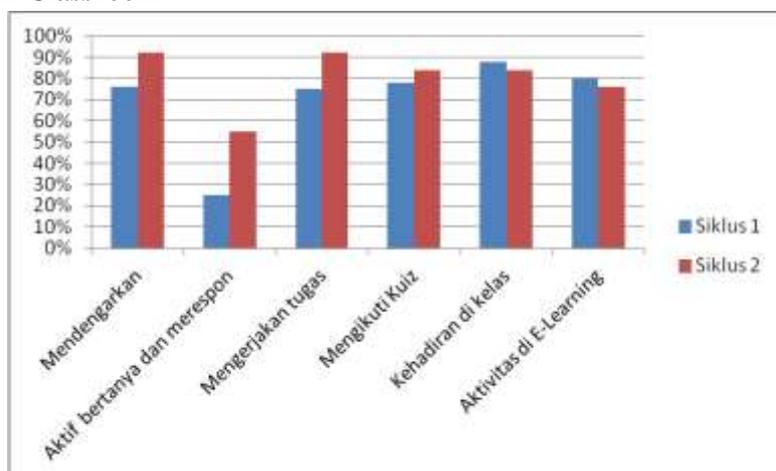


Figure 3. The result of students’s activity in classroom (cycle 1 and 2)

Figure 1. showed that the activities of students increase significantly in cycle 1 and cycle 2.

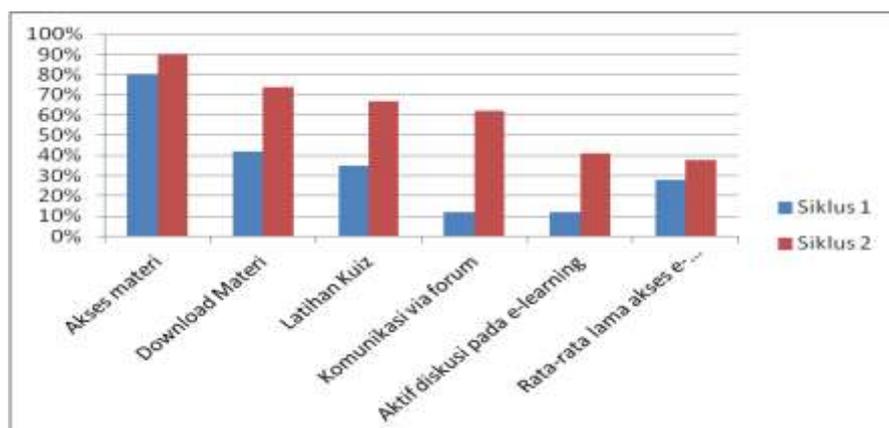


Figure 3. The result of students’s activity in e-learning (cycle 1 and 2)

Student Learning Outcome

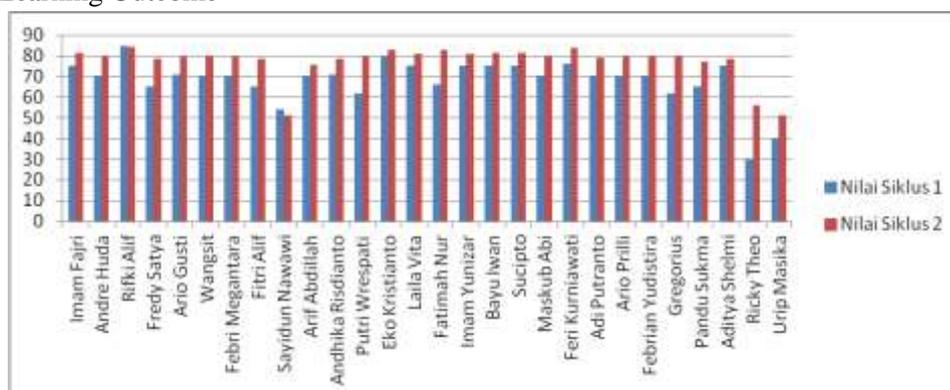


Figure 5. Student Learning Outcome

Figure 5 showed the result of pretest and posttest of students..

Discussion

Implementation of e-learning in Industrial Management courses has been done in the second semester that began in March 2011 and ended in June 2011. The implementation of e-learning covers many activity such as, access assignments, announcements and information lectures, doing exercises (quizzes), see the tasks, collect assignments, conduct discussions, sharing information and enrich their knowledge through linked sites. It is sufficient to provide motivation for students to improve the competence of this course relates to the field of science related.

In the first cycle, the implementation of e-learning there were some aspects that must be revised on the next cycle. The thing to note is the lack of students lost interest in accessing e-learning. This is probably caused by students feel that e-learning was just downloading the learning material and then printout. Students have not been aware of the benefits and advantages of learning with e-learning system. By understanding this, e-learning courses only serve as a website that provides downloadable material for students, then it's up to students whether to be read, discussed and developed further. With this condition the implementation of e-learning with no significant impact on student learning activities in class, active in student learning in the classroom such as listening, asking questions, responding to issues raised in the discussion, to discuss issues and activities in other classes.

The action on the second cycle focused on increasing motivation to learn with e-learning. Students were given the motivation needs to gain competency courses, getting good value and need

for achievement. This effort is carried out continuously so that the results achieved in accordance with the objectives. Increasing of student motivation give a significant impact on activity in both the classroom and e-learning. It can be seen from the indicators from e-learning report in which an increase in frequency and time of access to e-learning means that students do more learning. Increasing the motivation of the students have an influence on improving the competence of students is characterized by average test scores of students from 67.11 to 78.4.

Conclusion

Berdasarkan hasil pengamatan yang dilakukan dapat ditarik beberapa kesimpulan sebagai berikut :

1. Implementation of e-learning in Industrial Management courses have been done in the second semester of the school year 2011/2012 that can be accessed through <http://besmart.uny.ac.id>. The learning process was done by a combination of classroom learning and e-learning by providing learning in a balanced way so that the proportion of motivated students to be active in classroom learning and e-learning.
2. Implementation of e-learning give an impact on increasing of student activity both in the e-learning and in the classroom as indicated by the increasing number of students who attend class, focus on class, doing coursework, responsive, add time to learn and practice questions. E-learning has an impact on improving students' competency that indicated by result of pretest and posttest from 67.11 to 78.4.

References

- Ali, M, 2009, Analysis of implementation blended learning Model (*Combination Class Room Learning And E-Learning*) In electromagnetic fields course”, International Seminar on World Class University, ISWCU2009, Yogyakarta
- Budi Kudwadi, Dedy Suryadi (2007), “*Pengembangan Kerangka Model E-Learning Dalam Pembelajaran Teknologi Dan Kejuruan*”, Mimbar Edisi Tahun 2007
- Chu, Alan G; Thompson, Melody M; Hancock, Burton W, 2008, “*The Mc Graw-Hill Handbook of Distance Learning*”, New York : McGraw-Hill
- Kamin Sumardi, Dedi Supriawan, 2011, *Model Pembelajaran E-Learning (LMS) Untuk Meningkatkan Pemahaman Materi Termodinamika Teknik*
- Jarnawi, dkk, 2011, “*Pengembangan Model Computer-Based E-Learning untuk Meningkatkan Kemampuan High Order Mathematical Thinking Siswa SMA*”, Jurnal Mimbar, Volume 16 Nomor 2, Oktober 2011
- Muhammad Rafie Pawellangi, Wismanu Susetyo, 2011, *Implementasi E-Learning Pada Bidang Keahlian Teknologi Informasi Dan Komunikasi (Tik)Smk Di Kota Malang*, Jurnal Pendidikan Teknologi UPI, Vol. VII No. 1 Februari 2011
- Muhyadi, Prof, Dr., 2012, “*Model-Model Penelitian Tindakan Kelas*, didownload pada Staf Site UNY dengan alamat : <http://staff.uny.ac.id/sites/default/files/pendidikan/Prof.%20Dr.%20Muhyadi/MODEL%20PTK.docx> pada 17 Maret 2012.
- Stockley, D, 2006, *Blended Learning or Training – Definition and Explanation*’,. Derek Stockley, *Consultant In Training, Learning, And Performance* (online resources at Wikipedia.org)
- Surjono, H (2008). *Pengantar E-Learning dan Penyiapan Materi. Modul Pelatihan E-Learning Universitas Negeri Yogyakarta UPT Puskom UNY 4 – 6 November 2008.*