



#### **Conference Paper**

# Feasibility Implementation E-Learning Based on CMS Wordpress for Professional Ethics

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#### **Abstract**

The success of the learning process at school can be seen from the learning result of learners. The result of learners at X Financial class of SMK Negeri 1 Kudus on Professional Ethics subject showed that there are still many students have not yet reached KKM (Minimum Required Score). This result indicated that the subject of Proffesional Ethich needed an innovation in the use of learning media so that the students able to understand easily and active during learning activity. The use of E-Learning based CMS Wordpress is expected to be effective in improving student learning outcomes. The aim of this research was to determine the influence of E-Learning based CMS Wordpress on learning outcomes of learners and more effectively improve learning outcomes better than using conventional learning models. This research has designed quasi experimental nonequivalent control group design. The population of this this research learners at X finance consisting of 3 classes as much as 106 students. This research uses purposive sampling technique so that the subject of this study are X Finance 1 as experiment class and class X Finance 3 as control class. Methods of data collection using test methods, questionnaires and observations. Data analysis tool used in the form of software IBM SPSS version 25.0. The method of data analysis is non parametric statistical analysis with H<sub>1</sub> test using paired sample t-test and H2 test using independent sample t-test. The results showed that there was an increase in learning outcomes after treatment with E-Learning based CMS Wordpress seen from the average pre-test value of 61.60 and post-test value of 77.83, and for student activity increased from 64% to 82 % in the experiment class. It also shows that there is a difference of average result of post experiment class score 77,83 higher than control class post-test equal to 74,04, and for experiment class student activity is 82% higher than control class 81%. Based on the research results, it can be concluded that the use of E-Learning based CMS Wordpress can improve learning outcomes of learners and more effectively improve learning outcomes than using conventional learning. Suggestion given in this research is educator can use E-Learning based CMS Wordpress as one of alternative in learning in class.

**Keywords:** Learning Outcome; Elearning; CMS Wordpress; Students Engagement; Proffesional Ethics

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### 1. Introduction

Technological developments are increasing along with the flow of globalization. The speed of education and communication technology growth instructs a tool for educators. Judging from the last ten years some technology has been applied in educational institutions in the form of learning media.

It has been realized that in order to respond to the needs and challenges of today's global world, there are two aspects that must change according to the new paradigm. This is consistent with the opinion of Phosuwan et al., (2013) that the use of technology makes students' potentials in improving motivation and relationships with learning. Aspects that must be met include learning methods, which originally sourced from the teacher and took place in one direction, currently must be student-oriented and run in a multi-way direction. Aspects that must be met also is the management of educational institutions. When the school used to operate and work alone in the school environment, each school must establish management of educational institutions that can be reached from all directions in order to integrate each other's knowledge and resources.

Learning products that become indicators to determine the level of success of teaching and learning process is the result of learning. In harmony with Sudjana (2012: 3) that the result of student learning is essentially a change of behavior. Behavior as a result of learning includes cognitive, affective, and psychomotor fields. In addition to Gunuc and Kuzu (2015) states that the involvement of students (students engagement) in which there are classes engagement in the form of behavioral engagement, emotional engagement and cognitive engagement in learning can improve student learning outcomes. Of student involvement becomes a parameter to measure environmental aspect in an education system. This is because the involvement of students or student engagement is a proxy of the learning process at an educational institution [23]. As well as the statements Kingsley and Boone (2008) divide the three kinds of learning outcomes are: (1) skills and habits, (2) knowledge and skills, (3) attitudes and ideals. Each type of learning outcome can be filled with materials that have been defined in the curriculum. This is in line with the implementation of the 2013 curriculum in Indonesia which emphasizes the balance between soft skills and hard skills.

Teaching and learning process in fact does not always provide satisfactory learning outcomes. Learning outcomes especially in the subject of Professional Ethics is still much far from the target of success and can be categorized is still low. Thus the subject of Professional Ethics is the subjects that equip learners with the work environment.



Based on the results of preliminary observations at SMK Negeri 1 Kudus known that the results of student learning has not met the Minimum Exhaustiveness Criteria (KKM) of 75% in class X Financial 1 san X financial 2. The problem shows that from the value of daily test X class 1<sup>st</sup> semester on subjects Professional Ethics 2017/2018 can be seen in Table 1.

**Total Students** Number Class KKM = 75 Completed Uncompleted **Amount** Percentage **Amount** Percentage Siswa Siswa X KFU 1 63,89 % 36 36,11 % 13 23 X KEU 2 73,53 % 26.47 % 34 25 9 X KEU 3 80,56 % 19.44 % 3. 36 29 7 **Amount** 106 67 63,40% 36,60 39

TABLE 1: Daily Values of Professional Ethics 1st Semester 2017/2018.

Source: Research Data 2018

#### 2. Literature Review

Previous research has been done in order to improve students 'learning outcomes, such as Rahmawati et al (2015) research which is motivated by the students' learning achievement that has not been maximized. Some obstacles are felt by the teacher as a facilitator to students about the tendency to quickly bored in learning activities and access of materials that are not the same and less interest in reading the material and the material to listen to the material by the teacher.

On the one hand, according to students of Financial X class are at the learning stage. At the time of development in the students of class X Finance needs concrete objects to be learned and accessed well and easily. In addition, the school environment on the students of class X Finance is very supportive in the use of access to learning materials such as devices. In line with Sokolova's (2011) statement on the means and prefacilities that must be met in E-Learning learning management including ICT facilities, ICT knowledge, adequate information environment and financial condition. So that in any learning students need a bridge of facilities that menyahi.

Teachers should be able to facilitate students who enjoy using the device, actively surfing the internet and high curiosity, with concrete and complete learning media in visual and verbal media video transformation (video, audio and text). In line with Wu and Chen's (2017) assertion that without innovation for teacher-to-student interaction, the concept and the desired teaching and learning outcomes can not be achieved.



A study by Paivio and Bagget (1989) and Kozma (1991) indicated that by choosing the right mix of media, the learning outcomes of a person can be improved (Beacham et al., 2003). In line with Sutrisno (2014) suggests that dual coding theory implies that one will learn better when the learning medium used is an appropriate mix of verbal and nonverbal channels.

Referring to Dual Coding Theory that information presented both visually and verbally is remembered better than information presented only in one way so choosing the right media combination can improve a person's learning outcomes. Learning media E-Learning based CMS Wordpress able to combine various media such as text, graphics, audio, moving images (video and animation) in an integrated manner so that the presentation of the material becomes more interesting that can foster student interest to learn which will be able to improve learning outcomes. In harmony with engaging learning that improved learning outcomes of learners can be enhanced through integration with technology [4]. This shows that the use of Wordpress CMS-based learning media on the subject of Professional Ethics in improving students' learning outcomes is in conformity with Dual Coding Theory and the learning engagement model. One of the facilities and media that can be developed and can be used is E-Learning based CMS Wordpress for teaching Professional Ethics.

E-Learning is a website-based learning system that connects part of each user with the technology process. With the population and deployment of access from Word Wide Web and the amount of access from devices using the internet, such as Smartphones, laptops, tablets, and computers and using learning with E-Learning can spread rapidly throughout the world [1]. In line with Horton (2012: 3) E-Learning is all the utilization or use of internet and web technology to create a learning experience. E-Learning can be viewed as an innovative approach to serve as a good, user-centered, interactive, and workplace media delivery design that has many conveniences for anyone, anywhere and anytime.

The rapid growth of the internet makes the web a powerful, interactive, dynamic, economical and democratic medium of distance learning, interactive, dynamic, and democratic as it is expressed [14] that the Web provides an opportunity to develop appropriate and participant-oriented learning and training educate. The Web is also a representation of a new paradigm of learning especially how learning will be presented. Sanaky (2013: 220) reveals that Web blog utilizing application facilities in the form of World Wide Web.



## 3. Research Methods

The design of this study used experimental research. The experimental research method can be interpreted as a research method used to manipulate the conditions in some study participants and then compare the response groups that receive the treatment to see whether there is a certain difference to another under controlled conditions ([12]: 47).

This study uses Quasi Experimental Design using the Nonequivalent Control Group Design model because it can overcome difficulties in getting the control group in the study [6]. The Model Nonequivalent Control Group Design in this study will compare the pre-test and post-test values between the experimental classes that are the classes that use the learning media of E-Learning based on CMS Wordpress with the control class given the conventional learning model treatment with the sample not selected by random, or often called non-randomized control group pretest posttest design.

Population in this research is all student of class X of Finance at SMK Negeri 1 Kudus of academic year 2016/2017 amounted to 106 students which is divided into three classes that is X KEU 1, X KEU 2, and X KEU 3. Data used as base of test that is from student's daily test score on the competence of Professional Ethics. Determination of the sample in this study using purposive sampling technique (sample aim). Sampling technique with purposive sampling is the technique of determining the sample with certain criteria ([6]: 141). The considerations used for sampling with purposive sampling techniques are: (1) source book used the same; (2) learners get the material based on the same curriculum; (3) learners are taught by the same teacher; (4) learners who become the object of research sit at the same level and there is no superior class in the division.

Data collection techniques used are test methods, observations, and questionnaires. This research uses descriptive data analysis and statistical analysis of different test (paired sample t-test and independent sample t-test). Implementation of E-Learning with the form of learning media based on WordPress CMS on teaching Professional Ethics there is a difference in the increase of learning outcomes and student activities of experimental class and control class.

# 4. Results and Discussion

Research conducted two meetings. At the first meeting is pre-test and learning, The second meeting is used for learning and post-test. Learning in the experimental class



using the treatment or treatment of learning media E-Learning based CMS WordPress. While as a comparison of control class using conventional learning model approach. Submission of materials in both classes is carried out by researchers and in assisting colleagues observers who are in charge of observing student activities during learning using the model and learning media.

Meeting **Experiment Class Control Class** % Criteria % Criteria 1st meeting 64% Active 57% Fairly Activer 2<sup>nd</sup> meeting 82% Active 81% Active 23% 18% Increasing Activity Source: Research Data 2018

TABLE 2: Observation of Activity students.

Based on the average category of student activity at each meeting experienced an increase, both in the experimental class and decreased in the control class. However, there is a difference in the percentage of student activity in the experimental class and control class. The percentage of student activity of the experimental class is almost the same as the control class. Percentage of classical student activity for experimental class at first meeting was 64% with active category and second meeting was 82% with active category. Classroom control group activity at first meeting was 57% with less active category and second meeting was 81% with active category.

In terms of process, the formation of competence and character can be said to be successful and qualified if all or at least (75%) students are actively involved both physically, mentally and socially as well as showing high learning enthusiasm, great enthusiasm and confidence. This means that learning at the second meeting in the experimental class is qualified while in the control class is not qualified. Increased learning activity in the experimental class is caused by the use of learning media based on CMS WordPress E-Learning. With the use of learning media capable of presenting lesson materials that attract students more attention so as to foster student interest in learning compared with conventional learning. This indicates that the use of learning media E-Learning based CMS Wordpress further increase student learning activities compared with conventional learning.

In the experimental class and control class at the beginning of the meeting and the end of the meeting held pre-test and post-test. The results of pre-test and post-test in each class are presented in Table 3.

TABLE 3: Description of Pre-test Results.

No	Component	Pre-Test		
		Experiment	Control	
1	Total Students	36	36	
2	Average	62	60	
3	Maximum Achievment	80	77	
4	Minimum Achievment	37	40	
5	Total Completed Students	8	6	
6	Total Incompleted Students	28	30	
7	Percentage of Completed Students	22.22%	16.67%	
8	Percentage of Incompleted Students	77.78%	83.33%	
Source: Research Data 2018				

Based on the descriptive data of pre-test results in Table 4.9, it is known that the minimum completeness criteria for K<sub>3</sub>LH basic competence is 75. The table above shows that in both research classes that are class X KEU 1 and X KEU 3 as the experimental class and control class already exists thoroughly -experiment class of 8 students, and in control class 6 students. The highest score for the experimental class reaches 80 and for the control class reaches the highest score of 77. While for the lowest grade of each experimental class 37 and for the lowest grade of the control class is 40. This happens because the student has not received the material about K<sub>3</sub>LH.

TABLE 4: Description of Post-test Results.

No	Component	Post-Test		
		Experiment	Control	
1	Total Students	36	36	
2	Average	78	74	
3	Maximum Achievment	90	90	
4	Minimum Achievment	63	53	
5	Total Completed Students	23	17	
6	Total Incompleted Students	13	19	
7	Percentage of Completed Students	63,89%	47.22%	
8	Percentage of Incompleted Students	36,11%	52.78%	
Source: Research Data 2018				

The above results show that the experimental class and control class results have significant yield differences, the average of the experimental class and the control class for the experimental class is 78, and for the control class is 74. The highest score for the experimental class is 90 and the highest value for the control class is 90. Classically each class has done post-test has learning outcomes above KKM. This happens because of different treatment or treatment. Learning in the experimental



class with the capital of Discovery Learning using learning media ¬E-Learning based WordPress CMS while in the control class using conventional learning model.

Through IBM SPSS 25 testing, the normality test of the pre-test grade of the experimental class and the control class is. Both have values greater than 0.05 of 0.068 and 0.077 so that both groups are normally distributed. Homogeneity test of pre-test value of 0,572. This value is greater than 0.05 so that both groups are homogeneous. The result of the analysis of the average equation test of the pre-test data obtained 0,572 siginifikasi value on equal variancess assumed greater than 0.05, it can be concluded that the average of learning result of pre-test of experimental class and control class there is no difference. the normality test of the post-test grade of the experimental class and the control class is. Both have values greater than 0.05 of 0.074 and 0.063, so that both groups are normally distributed. Homogeneity test of post-test value of 0.072. This value is greater than 0.05 so that both groups are homogeneous.

The result of Paired Sample T-test test on Profession Etc study result indicates that the value of 2-tailed sig is 0.000. This value is less than 0.05 so H1 is accepted. This means that there is an increase in learning outcomes in students who use learning media E-Learning based CMS Wordpress applied by the researchers. Then the Independent Sample T-test test on Profit Ethics study data showed that the value of 2-tailed sigs in Equal Variance Assumed of 0.047. This value is less than 0.05 so H2 is accepted. This means that learning media E-Learning based CMS Wordpress applied by researchers more effective in improving learning outcomes compared with conventional models.

Results Students' responses to learning media E-Learning based CMS Wordpress 70% result then the learning media E-Learning based CMS Wordpress can be said positive of student learning.

This study obtained the data in the form of student learning outcomes (pre-test and post-test) and the observation of student activities using students engagement and responses to learning media using E-Learning based CMS Wordpress on basic competence Health and Safety and Environment (K3LH) on the subject of Professional Ethics Profession X Class SMK Negeri 1 Kudus academic year 2017/2018. The data is analyzed and tested to prove the hypothesis that has been compiled and then associated with the theory and previous research so as to provide conclusions of research results.

Student learning outcomes that have been done show the results of pre-test experimental class of 61.60 increased to 77.83. so it can be said the effectiveness of learning is optimal because the number of students who score above or equal to KKM (75)



has increased after the treatment (treatment) in learning. These results indicate the existence of research findings that learning by using learning media E-Learning CMS-based WordPress can improve learning outcomes on the subject of Ethics Professional Class X Financial SMK Negeri 1 Kudus. The effectiveness of learning can also be seen from student learning activities during learning. Learning on the subject of Occupational Health and Environmental Safety (K3LH) by using EMS learning media based on WordPress CMS can be said to be effective because the number of students who are actively involved in learning more than 75% ie at the first meeting of 64% increased to 82% on second meeting.

The learning is in accordance with the grand theory used is learning theory, and dual coding theory (dual coding theory) as well as Engaged Learning Learning. Learning Theory emphasizes the behavioral changes of the learning process experienced by learners that will result in learning outcomes Kingsley & Boone (2008), Sudjana (2012), Rifa'i and Anni (2015). The dual coding theory assumes that humans have two different information processing systems, one representing verbal information and the other representing visual information Beacham et al. (2003), Paivio (2006), and David (2008) and Sutrisno (2014). Based on this theory, the information presented both visually and verbally is remembered better than information presented only in one way so choosing the right media combination can improve a person's learning outcomes.

The pre-test result for the experimental class is still there are 28 students who have not succeeded in reaching KKM with the average value of pre-test equal to 62. After giving treatment or treatment to experiment class by using learning media of E-Learning based CMS Wordpress done hypothesis testing to get conclusion. The average result of the experimental class post-test value increased by 16.23 to 77.83. The number of students who successfully reached KKM after receiving treatment as many as 23 students with a percentage of 63.89% from the previous which only reached 22.22%. The result of observation of student activity showed in the student experiment class more active than the control class. The activity of the experimental class students at the first meeting got 64% with the active criterion, while for the control class got 57% with fairly active criteria. The second meeting for the experimental class still got active criteria but from the percentage rate increased to 82%, while the control class also increased to 81% with active criteria. Based on the results of these observations show that the use of learning media E-Learning based CMS WordPress can make students more active than using conventional learning this is in accordance with Phosuwan et al., (2013), Erdem et al., (2013), Pattnayak & Pattnaik (2016), and Wu & Chen (2017) stated that with the use of technology can improve student learning outcomes.

Wong's previous research (2016), titled "Factors Leading to Effective Teaching of MOOCS", showed that the effectiveness of mass online learning media can be measured by five indicators of attraction, increase participation, enhance interaction, issues and solutions regarding interaction and enhance consolidation. The effectiveness level of learning media of E-Learning based on WordPress CMS reaches 70% using measurement with indicator of Massive Open Online Course (MOOCs) is very appropriate to use.

Based on the results of analysis and testing of data, theory, and the results of previous research, it can be said that the use of learning media E-Learning CMS-based WordPress more effective in improving learning outcomes in the subjects of Professional Ethics Students X Grade X SMK Negeri 1 Kudus compared with conventional learning.

## 5. Conclusion

Based on the data of research and discussion that has been described, it can be concluded as follows:

- 1. Implementation of learning media E-Learning based WordPress CMS can be categorized effective with a significant difference to the learning outcomes of pretest students before getting treatment (treatment) with the results of post-test students after receiving treatment (treatment) with student learning outcomes using E-Learning media with WordPress CMS. The increasing number of students who graduated with a minimum score of 75 on the pre-test was 8 students (12%) and in the post-test was 20 students (80%).
- 2. Implementation of learning media E-Learning based WordPress CMS is more effective in its use and improve student activeness in the learning process. Students become more enthusiastic and enthusiastic. Thus learning becomes more interactive, effective and interesting.

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