

Development of E-Module K3 and Employment Law

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ABSTRACT

The purpose of this research is to produce e-module Project Based Learning in K3 and Employment Law courses that are valid, practical, and effective in K3 and Employment Law subjects for SMK students. The research method used is research and development with a 4D development model consisting of define, design, develop, and disseminate stages. The result of this research is the successful development of e-modules K3 and Employment Law to support the learning process. The effectiveness of this module is seen based on cognitive learning outcomes. Based on the differences in the results of the pretest and posttest that have been distributed, it can be concluded that the e-module K3 and Employment Law have been effective. The implication of this research is that this e-module can continue to be developed to improve the quality of education in K3 and Employment Law courses.

Keywords: Effectiveness, E-Jobsheet, Employment Law

1. INTRODUCTION

Based on observations and observations made in several power electronics practicum classes at the Faculty of Engineering, Padang State University, several problems were found in the learning process that occurred. Starting from students who are less interactive and rely heavily on the explanations given by the lecturer. In addition, books suggested by lecturers are often left behind, some cannot afford to buy and some do not read at all. So that learning that should be exchanged ideas becomes a one-way learning activity.

The e-module developed is in the form of an Android-based e-module, this is adjusted to the average smartphone used by students. The development of this Android-based e-module uses the android studio application. So that by using android studio it can help create an e-module project based learning in K3 and Labor Law courses in the form of an application. The e-module developed will be used by students to easily access learning and learning reference sources anytime and anywhere so that it is more effective and does not need to cost money to buy books or copy K3 books and Labor Law.

It is hoped that the development of this e-module can make a major contribution to the learning process in the K3 and Employment Law courses in the Electrical Engineering department, Padang State University. With easy access and qualified reference sources, it is also hoped that it can help in understanding concepts in the subject matter so that learning objectives can be achieved and students can be more interactive in class. The purpose of this research is to produce e-modules in K3 and Employment Law courses that are effective for lecturers and students.

E -The OHS and Labor Law Module is a learning resource that contains materials, methods, limitations, and descriptions that are designed in a systematic and interesting way. E-modules are designed according to the curriculum and made in the form of non-printed teaching materials with displays using electronic devices such as computers or Android. The K3 and Employment Law e-modules are self-instructional, containing only one learning material. Students are expected to be more independent in studying K3 and Employment Law courses so that when in class they can be more optimal in discussing with the lecturers who support these courses.

The advantages of using e-modules are: (1) Able to foster motivation for students. (2) The existence of an evaluation allows lecturers and students to find out which parts have not been completed or have been completed. (3) Study materials are arranged according to the academic level. (4) Can make the module more interactive and dynamic than the print module which is more static. (6) Can be added video, audio, and animation to reduce the high verbal elements of the print module. The responses from lecturers who are in charge of K3 and Labor Law courses to the development of E-modules obtained an average of 50 agree and greatly appreciate. Meanwhile, for the response of L.Eektro Engineering students, an average of 67.64 was obtained. The relevance is developing K3 and labor law.

2. EXPERIMENTAL

The research uses the Four-D development model. The Four D model is a research model starting from analyzing the problem in the background of the problem. The activity is in the form of observation/observation and concludes several events that appear in the formulation of the problem. In this study, different treatments will be given to the experimental class and no treatment to the control class. Data collection was carried out by distributing instruments in the form of questions to electrical engineering students who took the Power Electronics Practicum course to assess the cognitive aspects of these students.

The source of data in this study is primary data obtained from students taken through the effectiveness of the E – K3 module and the developed Labor Law. The subjects of this study were electrical engineering students totaling 25 people. The sampling technique used is purposive sampling, namely sampling according to the needs of the researcher. The data analysis of the effectiveness of the e-learning module was carried out by using the t test.

3. RESULTS AND DISCUSSION

The development of E-modules in K3 and Employment Law courses is an activity carried out to produce valid, practical and effective E-modules. The developed E-Module is based on a 4D model. In the first stage, define is the process of analyzing students and the curriculum in the power electronics practicum. In the next stage, the design is the design of the e-module which is adapted to the jobsheet from the lecturer in the K3 and Labor Law courses at the Faculty of Engineering, Padang

State University. The main activities at this stage are writing, reviewing and editing the E-module K3 and Labor Law by paying attention to language, wording, format, purpose, evaluation and pictures, video and audio. The following is the design of the E – Module that will be developed:

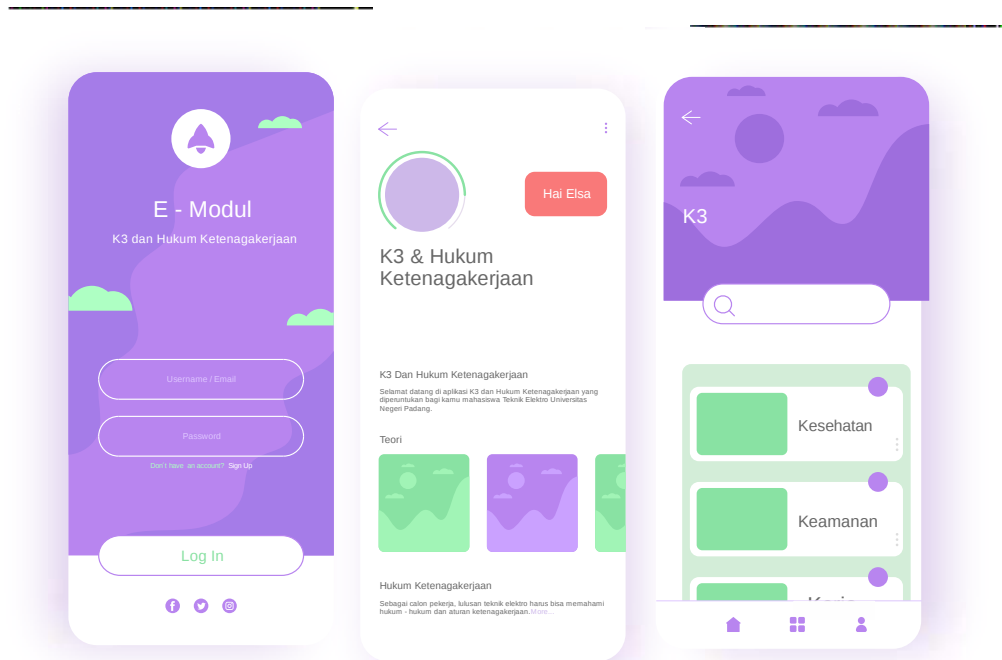


Figure 1. E-Modul K3 and Employment Law

The design of the front page contains the title E - Module K3 and Labor Law. And go straight to the main menu. The main menu consists of Material, Jobsheet and video menu options. The results of the E-Module effectiveness test consist of normality, homogeneity and hypothesis testing. And in the third stage, namely develop, namely the development of the E-Module according to the revision or suggestion from the validator in order to get an effective module.

Normality test is conducted to test whether the data is normally distributed/not. The results of the normality test are: the normality value of the pre-test data is 0.107. The normality value is greater than the significance value ($0.107 > 0.05$) if this value is reached, it is said to be normally distributed. Furthermore, the normality value of the post-test data was obtained at 0.267, the normality value was greater than the significance value ($0.267 > 0.05$) so that the data was declared normally distributed. After the data is declared normal, it is continued with the homogeneity test which is a test to find out whether the two data obtained from the two groups have the same variance or vice versa. have the same variance (homogeneous).

Furthermore, hypothesis testing was carried out with t-test. Obtained a significance value of 0.000, which means that the value of $\text{sig}.000 < 0.05$ means that there is a significant difference in the learning outcomes of students before and after using the E-Module. Effectiveness testing is also carried out using the effect size formula. Based on the test, the result was 0.6 with a medium category,

meaning that the effect of using the E-Module in the K3 and Employment Law courses had a medium category. The effectiveness test was conducted to see the impact of using the E – OHS Module and Labor Law. The effectiveness results were seen based on the differences in the results of the pre-test and posttest conducted to see the significance value between learning outcomes before using the E-Module and learning outcomes after using the E-Module.

Based on the analysis carried out at the effectiveness test stage, it proves that the use of E-Modules in the K3 and Employment Law learning process can help electrical engineering students at the Padang State University to understand the material faster. Furthermore, in the last stage, what is done is disseminate or the process of spreading the E-Module that has been created. The requirements for deployment are when the E - Module created has been declared valid, practical and effective.

4. CONCLUSION

Based on the results of the study, several conclusions were obtained, namely: (1) This study produced an E-Module in K3 and Employment Law Courses. Contents E - The module made consists of text, images, and videos. E - Application-based modules that can later be accessed offline to read material and view videos are made online in order to reduce the burden of installing applications. (2) The research resulted in an effective E – module. Effectiveness can be seen based on students' cognitive learning outcomes in conducting practicals which are categorized as effective. (3) Cognitive learning outcomes of students are seen based on the value of completeness with the percentage categorized as effective. Based on the difference in the results of the pretest and posttest, it obtained a low significant value so that it was declared effective. Based on the magnitude of the impact of using the E-Module, it gives a high effect value. Based on the psychomotor scores, the students achieved a higher completeness score. This means that the E-Module is said to be effective assessed from the psychomotor aspect of students when conducting discussions and conducting tests. The results of developing a valid E-Module can be used by Lecturers in carrying out their learning process because the e-module developed is in accordance with the learning outcomes in the current curriculum.

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