

## E-MODULE DEVELOPMENT COMPUTER BASED ACCOUNTING WORK-BASED LEARNING (WBL)

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### *Abstract*

*The utilization of a computer-based approach offers numerous advantages for work-based learning in the field of accounting. This approach enables students to simulate intricate accounting tasks and scenarios using specialized software applications, thus furnishing them with a lifelike environment to cultivate practical skills. The electronic module (e-module) encompasses a range of interactive exercises, case studies, and simulations meticulously designed to replicate genuine workplace situations. This research aims to develop an effective computer-based work-based learning (WBL) accounting e-module that enhances students' practical skills and their ability to apply accounting knowledge in real-world scenarios. The research followed a research and development approach, utilizing the Rowntree development model. Formative evaluation was conducted based on Tessmer & Martin's theory. The study consisted of stages including analysis of teaching materials, tailored e-module development, prototype creation (paper-based and computer-based), expert evaluation, and field testing. The developed accounting e-module successfully simulates real workplace situations through interactive exercises, case studies, and simulations. Expert evaluation confirmed the suitability of the learning media. Field testing, encompassing various settings, revealed increased student engagement, motivation, and improved learning outcomes. This research led to the creation of a robust work-based learning (WBL) accounting computer e-module. The module effectively bridges theoretical learning with practical application, enhancing students' skills and performance in the field of accounting. The findings affirm the viability and effectiveness of the developed e-module as a valuable pedagogical tool.*

**Keywords:** *Development Research, E-Module, Work-Based Learning*

## 1. INTRODUCTION

Education is a process of giving or receiving knowledge from someone who has abilities that are useful for himself in understanding life. With education a person will be able to adjust to life where he will know what is good and what works, what is right and what is wrong, what is inappropriate and so on. Education always evolves to keep up with the times both in terms of knowledge and the way/method of delivery. Over time, the education/learning process continues to be explored and simplified so that all recipients of learning messages can understand quickly and correctly what is being conveyed.

Along with the times and the development of ICT, the use of information and communication technology is used in almost all aspects of everyday human life without exception in the field of education. Based on the observations of researchers, the use of information and communication technology in education, especially formal education, is almost used by students as a medium of communication, both directly related to learning

activities and as a tool to obtain learning resources. The development of information and communication technology should not only be a communication tool, but it is hoped that it will be more than that, including as a learning communication medium that can be used by educators to convey learning/teaching material to students. The use of ICT in learning today is very possible to use especially supported by the existence of smart tools-based communication devices with their sophistication with internet access which will provide several advantages for education both for students including visualizing the concept of teaching materials so that they are easier to understand in a more concise form . real, enabling the use of a combination of various ICT (multimedia) tools, and in overcoming the problem of insufficient study time in study rooms or classrooms. As well as the combination of various media/tools on ICT devices will be able to increase student learning motivation actively. In formal education the use of ICT sophistication has begun to be used to facilitate and accelerate learning activities for students as well as to link formal education to non-formal education as a real learning resource. Educators as carriers of learning messages should be able to use learning resources/learning media that are widely available on the internet or can be made by themselves with adjustments to the learning environment, learning facilities, student abilities, teacher abilities, and learning objectives. The development of teaching materials/learning media is structured and developed in such a way as to be used as a guide in achieving learning objectives.

Accounting economics is a subject that requires direct experience with a large number of study hours. Using ICT-based learning resources and learning media will clarify the teaching material to be delivered and provide sufficient time for students to learn in a real and complete way. The Computer Accounting subject is a teaching material that wants to achieve complete learning in its entirety in accordance with the needs of the business world and industry. So updates, skills, and the correctness of accounting computer work processes are highly prioritized. So educators should be able to adjust this as a real source of knowledge for students who will later be used in the world of work. The solution to this problem is to develop electronic accounting computer e-module materials integrated with Information and Communication Technology that are adapted to work systems in the real world of work. In this study the researchers also used the work based learning (WBL) learning method in designing teaching materials for the Computer Accounting e-Module. With the existence of these teaching materials it is expected to contribute to the development of education and learning in formal education.

## **2. RESEARCH METHODS**

The Rowntree development model where according to Prawiradilaga (2008:45), this development model consists of three stages, namely: the planning stage; development stage; and the evaluation stage, while product evaluation refers to formative evaluation (Tessmer & Martin, 1998:16), this stage will be used when the prototype development is finished. At the evaluation stage, testing the teaching materials made to material experts, in this case educators. After completion, carry out the second stage of evaluation by showing the storyboard design to learning media design experts, and in the third evaluation, showing the learning media as a whole to learning media experts. At each stage of the evaluation the researcher will make revisions if there are

comments/suggestions from experts on the media being developed, until the media is ready to be tested at the next stage.

At the evaluation stage, field trials are carried out by testing students on a one-to-one and small group basis. If at this stage improvements are obtained, revisions will be made to the media that has been developed until it is ready to be tested in full-fledged classrooms. At the end of the evaluation, teaching uses learning media to see student responses, both in the form of motivation, interest in the media used, by using observation observation sheets.

The aspects validated in the development of the accounting e-module are as shown in table 1 below:

**Table 1. Aspects of e-Module Validation**

<b>Framework and content material</b>	
<b>Organization of Cover and Binding Modules</b>	Introduction
	Learning objectives
	Practice questions and answer keys
	Summary
	Reading sources
<b>Module Formats</b>	All identified
	All pages and exercises are numbered
	Make it easy for students to use it
	Use the appropriate letters
	Font size suitable for students
	Module size according to standard
	Visually appealing to students
<b>Aspects of Material Description</b>	Suitability for purpose
	Conformity with the flow of learning
	Compatibility with the curriculum
	Compatibility with the syllabus
	Load all the necessary information
	Allows linkage between units/modules
<b>Language Aspect</b>	Motivating students to learn
	Easy for students to understand
	Encourage students to read other references
	Using Indonesian properly and correctly
	Using clear, simple sentences
	Attractive image and color illustrations
Illustrated images according to/representing the message conveyed	

### **3. RESULTS AND DISCUSSION**

#### **3.1. Research Result**

##### **3.1.1. Results of the Planning Stage**

This stage analyzes the teaching materials, subjects and objects that will be examined and developed, namely work base learning (WBL) accounting computer e-module teaching materials. This is done by analyzing the learning syllabus, interviewing teachers, colleagues, and analyzing the learning needs of students in the accounting education study program at the PGRI Palembang university. The results obtained at this stage are; know the problems in accounting computer learning, obtain learning materials that will be compiled on accounting computer e-modules, understand ICT applications and devices that will be used in developing e-modules. At this stage the researcher already has a draft of work based learning (WBL) accounting computer module teaching materials.

##### **3.1.2. Results of the Development Stage**

The module draft that was prepared in the first stage was maximized by developing with the help of the Canva application so that an electronic module was formed with advantages in terms of audio visual. At the Paper based stage what is being done is compiling an e-module storyboard which contains, among other things, video, sound, animation and pictures. The computer-based storyboard design that was developed was translated with the help of the Canva application.

##### **3.1.3. Results of the Evaluation Phase**

This stage is carried out to ensure that the developed e-module is ready to be tested in a real class. The stages carried out were the prototype e-module which was shown to 3 evaluation experts, namely medical experts, material experts, design experts and tested on each student and student group. This is to test the validity of the developed accounting computer e-module prototype.

The results at this stage focus on the content and media aspects of the accounting computer e-module which was developed with the help of the Canva application. Expert revision results validation test by experts, namely computer accounting material experts by accounting computer teaching lecturers, learning design experts by learning design lecturers and e-module media experts by computer base engineering and design lecturers. The validation test was carried out to check for deficiencies that could arise due to the limitations of researchers in developing accounting computer e-modules assisted by the Canva application.

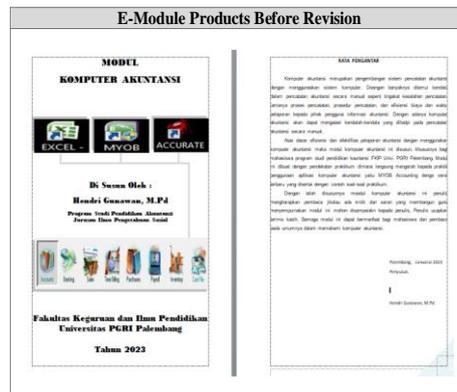


Figure 1. E-Module Products before revision



Figure 2. E-Module Products after revision

Based on the results of the validation, it can be concluded that the material developed is classified as very valid with an average of 4.48.

In evaluation one, the accounting computer e-Module product was tested on 3 students to find out the response to the developed e-module. The results of observations from students will be taken into consideration in developing e-modules. The results of observations of the 3 students concluded that the Accounting Computer e-Module could attract interest and increase student learning motivation.

While in the Small Group Trial, researchers gave the e-module product to a group of 10 students to provide feedback/comments on the Computer Accounting e-module developed both in terms of material, form and audio and visual appeal in the e-module. This small group stage aims to see the practicality of the e-module developed. From the observations of groups of students who saw and used the e-modules using laptop and smart phone devices, it was concluded that the average student questionnaire results on Computer Accounting e-Modules were 100 with a very practical category so that they met the quality of practicality, based on the results of the small group trial.

After the validity stage, at the field test, the Computer Accounting e-Module will be tested in a real class, then a field trial was carried out with a total of 20 semester 4 students in the accounting education study program at the PGRI Palembang university. This stage was carried out to see how the effect of the use of the Accounting Computer

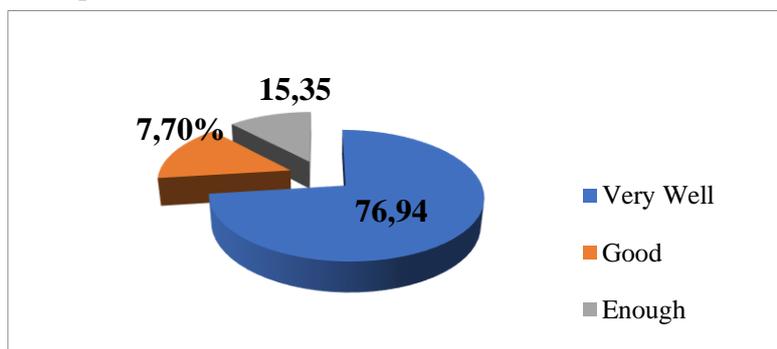
e-Module on Accounting Computer learning outcomes and activities of student lecture activities. In the application of research, researchers use the work-based learning (WBL) method. Lecture activities are carried out 2 times face to face for 2 weeks using the Computer Accounting e-Module. During the implementation of lectures using the accounting computer e-Module, observations were made to observe student lecture activities during the implementation of the e-Module.

In the first face-to-face implementation of the e-module, before starting the researcher conducted an initial test to find out the extent of the student's abilities. The test results obtained were 22.63% good predicate, 31.18% sufficient predicate, 32.78% poor predicate, and 9.41% very poor.

Observations at the field test stage were carried out during the learning process, namely the first and second meetings. This observation was carried out to determine the level of student activity in learning activities by Diana Widhi Rahmawati, MM, namely Kuteua, the Accounting Computer Lab at PGRI Palembang University.

Observation data during learning at meetings 1 and 2 obtained a value of 79.09% in the very active category and 20.90% in the active category.

At the end of learning students are given a final test to measure the potential effect after using the Computer Accounting e-Module teaching materials. The final test results for 20 students obtained 76.94% in the very good category, the good category was 7.70% while the sufficient category was 15.35%. If it is made in percentage of learning outcomes, it can be presented in Picture 3 1 as follows:



**Figure 3. Percentage Category of Student Learning Outcomes**

From the table of initial test results, it shows that the average score achieved by students is 68.82 in the less category, while the final test results for students obtained a score of 91.21 in the very good category. If the final test scores of each student are compared with the accounting KKM score, which is 80, it can be seen that there are 4 students who have not reached the KKM, there are still students who score below the KKM in the sufficient category. Judging from the comparison of the average student score on the initial test of 68.82 and the final test of 91.21, it means that there was an increase of 22.39%. This shows that the potential effect of the developed teaching accounting e-module material is good on student learning outcomes with student learning mastery of 90%. Based on the description above, it can be concluded that the developed accounting e-Module teaching materials have had a potential effect on student learning outcomes.

### 3.2. Discussion

This research aims to develop a material product in the form of a Work Based Learning (WBL) Accounting Computer e-Module using the Canva application to produce interesting teaching materials for students. The research phase is divided into 3 stages, namely: the Development Stage where the researcher conducts a series of analyzes to produce drafts of teaching materials that are appropriate to the students and their learning environment. At this stage, drafts of teaching materials are produced according to the needs of students with the Work Based Learning (WBL) learning model approach. In the second stage, the researchers started designing the ICT-based Computer Accounting e-Module format using the Canva application. At this stage the researcher makes a story board to match the audio and visual combinations that will be used in the display of the teaching materials being developed. At the end of stage 2 the researcher already has a draft story board of the e-module which will be made into prototype form. Stage 3 is an evaluation / feasibility test and improvement of the jar material to be developed. The initial evaluation was carried out by the researchers themselves to see what needed to be improved or added. After the initial prototype was completed, it was then given to material experts, media experts, and learning design experts to obtain input and suggestions in maximizing the developed Accounting Computer e-Module teaching materials. The results obtained from the revision show that the validity of the e-Module Computer Accounting teaching material obtained a value of 4.48% with a very valid category and declared usable.

The practicality of teaching materials is carried out by conducting trials on one-to-one and small groups of students totaling 10 people. This is done in order to obtain direct responses by students to the components of content and media in the developed Accounting Computer e-Module. It is known that the results of one-to-one interviews with 3 students concluded that the e-Computer Accounting Module teaching materials developed by researchers can increase student interest and motivation in learning and are easy to use both on laptop devices and on smart phones. In a small group trial of 10 students, it was found that the results of the responses to the questionnaire assessing student attitudes on the Computer Accounting e-Module teaching material amounted to 100 very practical predicates. It was concluded that at the evaluation stage it was found that work-based learning (WBL) Computer Accounting e-Module teaching materials had been declared practical.

The effectiveness of the use of e-Module Computer Accounting teaching materials applied to real classes of 20 students, 20 students obtained 76.94% in the very good category, the good category, namely 2 students, was 7.70% while 4 students were in the sufficient category, namely 15.35%. When carrying out the research for 2 weeks with 2 face-to-face meetings by observing lecture activities, it was found that the percentage of student activity was 76.08% in the very active category and 23.91% in the active category.

Based on student learning outcomes and observations in field tests, it can be concluded that the e-Module Accounting teaching materials that were tested on class X Accounting at SMK Negeri 5 Palembang were found to be effective. The data analysis above shows reliable results to relate it to existing theories. In accordance with the opinion of Azhar (2003: 26) which states that learning media has several benefits, one of which is that it can increase and direct children's attention so that it can lead to learning

motivation. Meanwhile Sardiman (2000: 5) argues that learning aids really help the learning process and improve student learning outcomes.

Both opinions are in accordance with the results of research on the development of e-Module Accounting teaching materials that researchers conducted on student learning outcomes. Student learning outcomes tend to be higher after receiving treatment using the accounting e-module using the Adobe Flash program in the accounting learning process for basic competencies applying the basic concepts of accounting records.

Apart from that, the research on the development of e-Module Accounting teaching materials also experienced some weaknesses/limitations according to researchers. In terms of the appearance of the learning media that has been made it is quite good but still needs improvement, such as the display of the animation used is still simple and the time for making it is limited. The content contained in the e-Module Accounting teaching material media is still limited to sub-materials, even though in the 2013 Curriculum there are still several other materials. Therefore, it is still necessary to make more computer-based teaching materials, which are not only for accounting subjects. Unless it is necessary, the same teaching materials are also made for all accounting subjects.

#### **4. CONCLUSSION**

Based on the results of the study, it can be concluded that the accounting e-Module teaching materials developed using the Adobe Flash program on the basic competencies of recording transactions in the basic equations of accounting for student learning in the Vocational High School accounting program have met the very valid criteria according to the validator, based on content, form and structure.

Judging from the practicality of the contents of the accounting e-Module teaching materials developed on the basic competencies of applying the basic concepts of accounting records, it has been declared practical. This can be seen from the results of one-on-one trials and small groups. In the one-to-one trials, the results of the interviews obtained concluded that the teaching materials developed could attract students' interest and were easy to use. Meanwhile, in the small group, the average result of the questionnaire assessing students' attitudes towards the teaching material for the e-Module Accounting was a score of 100 in the very practical category.

The results of the field test showed that the e-Module Accounting teaching materials developed for Vocational High School learning accounting expertise programs had a potential effect on student learning outcomes and increased student learning activities. This can be seen from the achievement of the students' final score of 74.90% with very good predicate, 10.70% good predicate and 14.39% sufficient predicate. It is known that the 2<sup>nd</sup> lecture observation is 73.17% very active and 26.82% active.

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