Development of Financial Accounting Subject Learning Modules Using Learning Management System (LMS) for Students of Class XI Accounting at SMKN 1 Boyolangu

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Abstract
In accounting learning activities in schools, students are still minimal in using modules because there are no modules that are in accordance with student competence. In financial accounting lessons students are required to be able to understand the material and problems that exist for it needs a financial accounting module that can attract students to be active in working on problems in the form of case studies so as to improve the competence of accounting students. The purpose of this research is to design an e-learning-based financial accounting learning module using a learning management system for class XI students at SMKN 1 Boyolangu, know the validity of LMS-based financial accounting learning modules and find out the feasibility level of financial accounting learning modules using class XI learning management system at SMKN 1 Boyolangu. This type of research is Research and Development, 4D development model Thiagarajan, Semmel and Semmel, for the stage of deployment in the scope of smkn 1 boyolangu for accounting majors. The results of the study showed the development process produced the final product in the form of financial accounting modules with materials in odd semesters. Expert feasibility analysis of materials with an average score of 3.94, media expert eligibility of 3.95, eligibility by accounting practitioners 3.95 and student assessment results of modules 3.95. It can be concluded that the modules developed are suitable for use in learning activities.

Keywords
learning modules; financial accounting; LMS

I. Introduction

One of the factors that determine the progress of a nation is education, through education one is prepared to play a role in the environment as provisions in the future. If one's education is good, it will be able to easily contribute to the environment that will later play an important role in the process of developing the country into a more advanced country. According to Astuti et al (2019) Education is an obligation of every human being that must be pursued to hold responsibilities and try to produce progress in knowledge and experience for the lives of every individual. Education is one of the efforts to improve the ability of human intelligence, thus he is able to improve the quality of his life (Saleh and Mujahiddin, 2020). Education is expected to be able to answer all the challenges of the times and be able to foster national generations, so that people become reliable and of high quality, with strong characteristics, clear identities and able to deal with current and future problems (Azhar, 2018).

Various efforts have been made by the Indonesian government to improve the education system in Indonesia, one of the efforts that have been made is the improvement and development of Vocational High Schools (SMK) which has the aim to prepare learners
as skilled workers with soft skills and hard skills to work and continue their studies to universities.

Along with the development of the 21st century and the current pandemic period, modules can be packaged in the form of books and digital electronics by utilizing computer technology both online and offline based called electronic modules. E-module itself can be read using electronic devices or the internet (Suryadie, 2014). The advantage of e-modules for learning is that it can increase the effectiveness and flexibility of learning (Santosa, 2011), not related to space and time (Suwarsono, 2013), can make the learning process more interesting and not get bored quickly because it is equipped with various images, videos, and various interesting features that can increase the motivation of learners in learning (Putra, 2017). Modules can be presented with print modules and electronic modules where the module can be easily accessed at any time via the web and mobile phones making it easier for students in learning especially financial accounting subjects.

Learning that utilizes the module media uses e-learning to provide convenience to the students to learn business economics subjects. One of the e-learning devices that is very important role is learning management system (LMS). LMS is a software application (software) for the purposes of teaching and learning activities and activities that are connected online and offline. LMS offers an innovation learning system that covers the field of information technology by utilizing open source applications that can be downloaded dynamically (dynamic e-learning) that contains packaging of materials in multimedia form (text, animation, video and sound) provided as supplements and encriment for the development of learning competencies (Munir, 2010).

The most interested skill program is the accounting expertise program. This is because all business fields carry out activities related to accounting. So that the needs of the business world and industry for accountants are very high. In accounting learning usually related to the count, which is calculated in accounting is something that is abstract and with a large nominal. For that, it needs appropriate teaching materials in teaching and learning activities in the classroom so that learners can learn and understand accounting well. Prastowo (2015:17) Explaining teaching materials is a set of learning materials that are systematically arranged for learners to learn and used to achieve learning goals. Teaching materials according to Prastowo (2015: 40) are distinguished into print, audio, audiovisual and interactive teaching materials. The most widely used module today is the print module because the print module can make it easier for teachers to show students the material to be studied, low cost, easy distribution and increase reading motivation, in addition to the print module with this pandemic is needed modules that can be accessed by learners online. Learning using print modules and e-modules allows learners to be able to improve their competence and can more easily learn independently. Based on the results of observations at SMK Negeri 1 Boyolangu that there is no availability of financial accounting modules for students majoring in accounting class XI so they have difficulty in understanding financial accounting lessons. The results of observations show the process of learning to teach financial accounting subjects using textbooks where there is still a lack of problems that exist, especially about practice or case study problems. In fact, to improve the competence of students to be able to do more often in doing problems in the form of case studies.

This learning system gets material without having to be face to face by the teacher in front of the classroom, the learning process can be arranged in accordance with the schedule that has been determined, so that modules in online learning are needed innovation in the hope that students can easily access and be active in reading modules. In e-learning learning at SMKN 1 Boyolangu students actively conduct online learning with
various materials and tasks provided by teachers through e-modules, the advantages of this e-module ranging from the ease of modules in accordance with C3 that contains audio visual learning. In the business economics subjects of class X Accounting students, there needs to be modules that can be accessed at any time easily through the web and mobile phones so that students' understanding of financial accounting lessons is absorbed properly so as to increase students' thinking and creativity in improving competence.

To deal with the problems that occurred in SMK Negeri 1 Boyolangu developed a financial accounting module. From the observations obtained data that 100% of students of class XI AK 1 SMKN 1 Boyolangu, 89% of students of class XI AK 2 SMKN 1 Boyolangu and 100% learners of class XI AK 2 SMKN 2 Boyolangu liked modules in print and online form. By developing print modules and e-modules that meet the eligibility criteria of the National Education Standards Agency (BSNP), teaching materials can help learners in mastering financial accounting materials. According to Trianto (2015,137) the phenomenon in the field today is quite concerning, learners cannot make a connection between what is learned and applications in life, learners have difficulty understanding the concepts they learn. Students should be able to make such connections and understand concepts with the world of work, in addition learners should be able to connect the material with other things outside the classroom. To make it easier for learners to understand financial accounting materials well, different modules are needed, namely with the e-modules.

II. Research Method

This research is a type of research and development (Research and Development) that aims to produce a new product from the results of development. In line with Haryati (2012: 14), stated that "in the field of education, products produced through R&D research are expected to increase educational productivity, i.e. graduates who are many, qualified, and relevant to needs". The research stage carried out is formulating the problem to be studied, making instruments such as interview and observation instruments, collecting data, and drawing conclusions based on the data obtained This research refers to the research and development model or Research and Development (R & D) or 4 D (four -D) put forward by Thiagarajan, Semmel and Semmel (in Trianto, 2010) This development model consists of 4 stages namely defining (Define), Design, Development, and Deployment (Disseminate).

The subjects in this development research are students of grade XI Accounting 1, 2 and 3. Students XI AK1 numbered 15 people, Ak2 numbered 15 people, AK3 numbered 15 people. The trials were conducted there were small group trials and large group trials. The provision of a small group consists of 15 students and a large group there are 45 students. While the object in this development research is the development of business economics subject learning modules using LMS for students of class XI accounting at SMKN 1 Boyolangu. The study was conducted at SMKN 1 Boyolangu jalan kimangunsarkoro gang VI / 3 Beji Boyolangu. According to Sungkono there are three types of module development techniques, namely: writing yourself (starting from scratch), repackaging information (information repackaging), and structuring information (compilation). In this study the technique used is an information structuring technique or compilation where researchers develop modules based on information contained in several books and articles from the internet and then compiled in accordance with the 2013 curriculum that applies in schools (in Mufidah, 2014). In this study using research instruments in the form of: 1) Expert assessment sheet of material that becomes validator is
a senior teacher in the accounting department. 2) The media expert who becomes a validator is a media expert teacher at smkn 1 boyolangu. 3) The response assessment sheet of teachers and students who become validators are accounting teachers and grade xi accounting students. Modules that are questionnaires made by the author to find out the feasibility of the module, which is where the assessment category is adapted from Riduwan (2013) consisting of a score of "4" means "agree"; the score "3" means "simply agree"; The score "2" means "disagree", the score "1" means "strongly disagree". 2) Student response questionnaire sheet which is a questionnaire made to find out the student's response, this questionnaire is given to students consisting of students of class XI AK1,2,3 SMKN 1 Boyolangu numbered 60 people and sampled as many as 15 people for small groups and 45 people for large groups.

Expert validation results are analyzed with percentage techniques based on Likert scale scores as in table:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>Just Agree</td>
<td>3</td>
</tr>
<tr>
<td>Do not agree</td>
<td>2</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Riduwan (2016: 13) modified researchers

III. Results and Discussion

This research is a type of research and development (Research and Development) that aims to produce a new product from the results of development. In line with Haryati (2012: 14), stated that "in the field of education, the products produced through R&D research are expected to increase educational productivity, namely graduates who are many, qualified, and relevant to the needs" The development model used in this study is the 4D development model of Thiagarajan, Semmel and Semmel consisting of four stages. However, in this research the development process is only carried out until the third stage, namely develop. Define or defined stage performed procedures used to find out the learning requirements. The first stage is the analysis of the front, based on the results of observations, SMK Negeri 1 Boyolangu uses the 2013 Curriculum in the learning process. In studying bank reconciliation materials learners find it difficult. Teaching materials used in SMKN 1 Surabaya in the form of publisher printed books, in SMKN 4 Surabaya and SMKN 10 Surabaya in the form of photocopies of materials provided by teachers. Learners consider the teaching material unattractive so that new teaching materials are needed that are interesting and can overcome the difficulties of learners in learning bank reconciliation. The next stage is carried out the analysis of learners. Based on observations obtained results that learners in smk Negeri in Surabaya have an age above 15 years. Learners want interesting teaching materials and learners like teaching materials in the form of hard files. Based on the results of these observations, new teaching materials are needed in the form of contextual teaching materials with attractive designs. The next stage is done task analysis, which is what tasks students need to do in the learning process using teaching materials. The next stage of analysis of material concepts developed in teaching materials.

Teaching materials include two basic competencies namely KD 3.1, KD 4.1, KD 3.2 and KD 4.2, KD 3.3, KD 4.3, KD 3.4, KD 4.4, KD 3.5, KD 4.5 at this stage produced a concept map of learning. The next stage is the formulation of learning objectives in
In accordance with the basic competencies that have been determined, the design or design stage is carried out to prepare teaching materials that produce draft I. The format of teaching materials refers to Daryanto (2013) and Prastowo (2015). Teaching materials consist of introduction, content, and cover by adding My Character, Note, Mini Infographic, and Exam Preparation features. Teaching materials are presented in four learning activities. The stage of development or development is carried out to study teaching materials that have been developed. The study is done by an expert. The study includes components of content feasibility, presentation, language, and radiography. Based on expert input, researchers revise and produce draft II that will be validated by experts. Furthermore, the trial phase of students of class XI SMKN 1 Boyolangu.

3.1 Results of Feasibility Assessment by Material Experts

Materials in Accounting Teaching Materials in the form of Modules are assessed by material experts using questionnaires with a scale of 5. The questionnaire given to material experts has 15 questions that are grouped into 3 aspects, namely aspects of content feasibility, language, and presentation.

Average assessment results presented in Table 1.

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment Aspects</th>
<th>Average Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Content Eligibility</td>
<td>4.00</td>
<td>Proper</td>
</tr>
<tr>
<td>2.</td>
<td>Language</td>
<td>3.91</td>
<td>Proper</td>
</tr>
<tr>
<td>3.</td>
<td>Serving</td>
<td>3.91</td>
<td>Proper</td>
</tr>
<tr>
<td></td>
<td><strong>Material Expert’s Average Score</strong></td>
<td><strong>3.94</strong></td>
<td><strong>Proper</strong></td>
</tr>
</tbody>
</table>

The results of the feasibility assessment by the material expert if presented in the bar diagram are as follows:

![Feasibility Assessment Graph by Material Experts](image)

3.2 Results of Eligibility Assessments by Media Experts

Module-shaped Accounting Teaching Materials are also assessed by media experts reviewed from the aspects of media developed. The assessment instrument used is a questionnaire with a scale of 5. The questionnaire given to media experts has 15 questions.
that are grouped into 6 aspects, namely aspects of consistency, aspects of shape and font size, format aspects, organizing aspects, attractiveness aspects and space aspects (blank spaces). The average results of eligibility assessments by media experts are presented in Table 2.

**Table 2. Eligibility Assessment Results by Media Experts**

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment Aspects</th>
<th>Average Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Consistency</td>
<td>4.00</td>
<td>Proper</td>
</tr>
<tr>
<td>2.</td>
<td>Shape and size of letters</td>
<td>3.86</td>
<td>Proper</td>
</tr>
<tr>
<td>3.</td>
<td>Format</td>
<td>4.00</td>
<td>Proper</td>
</tr>
<tr>
<td>4.</td>
<td>Organizing</td>
<td>3.86</td>
<td>Proper</td>
</tr>
<tr>
<td>5.</td>
<td>Attraction</td>
<td>4.00</td>
<td>Proper</td>
</tr>
<tr>
<td>6.</td>
<td>Room</td>
<td>4.00</td>
<td>Proper</td>
</tr>
<tr>
<td></td>
<td><strong>Average Score of Media Expert</strong></td>
<td><strong>3.95</strong></td>
<td><strong>Proper</strong></td>
</tr>
</tbody>
</table>

The results of a feasibility assessment by a media expert if presented in a bar diagram, become as in Figure 2.

**Figure 2. Feasibility Assessment Graph by Media Experts**

Based on Table 1. regarding the results of feasibility assessments by material experts, the average score obtained is 3.94. If it is converted into qualitative data, then the Financial Accounting Teaching Materials in the form of Modules are categorized as "Feasible" for use in learning.

### 3.3 Results of Feasibility Assessment by Accounting Learning Practitioners

In addition to feasibility assessments by material experts and media experts, Accounting Teaching Materials in the form of Modules are also assessed by accounting learning practitioners. Feasibility assessment using a questionnaire instrument with a scale of 4. The questionnaire given to accounting learning practitioners has 15 questions that are
grouped into 4 aspects, namely aspects of content feasibility, language, presentation, and radiography.

**Table 3. Results of Eligibility Assessment by Practitioners**

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment Aspects</th>
<th>Average Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Content eligibility</td>
<td>3.91</td>
<td>Proper</td>
</tr>
<tr>
<td>2.</td>
<td>Language</td>
<td>4.00</td>
<td>Proper</td>
</tr>
<tr>
<td>3.</td>
<td>Serving</td>
<td>3.91</td>
<td>Proper</td>
</tr>
<tr>
<td>4.</td>
<td>Radiography</td>
<td>4.00</td>
<td>Proper</td>
</tr>
</tbody>
</table>

**Average media expert score** | **3.95** | **Proper**

The results of the eligibility assessment by the practitioner if presented in the bar diagram become as in Figure 3.

![Figure 3. The Eligibility Assessment Graph by Practitioners](image)

Based on Table 3 regarding the results of feasibility assessments by accounting learning practitioners, the average score obtained is 3.95. If it is converted into qualitative data, then the Financial Accounting Teaching Materials in the form of Modules are categorized as "Feasible" for use in learning. The student's assessment of Module-Shaped Accounting Teaching Materials is obtained from questionnaires distributed to students after a trial of the use of Module-Shaped Accounting Teaching Materials. The questionnaire shared has 15 questions divided into 4 aspects of assessment, namely aspects of content feasibility, language, preaching, and graphicity.

The average results of a student's assessment of the modules are listed in Table 4.

**Table 4. Student Assessment Results of Modules**

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment Aspects</th>
<th>Average Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Content Eligibility</td>
<td>4.00</td>
<td>Good</td>
</tr>
<tr>
<td>2.</td>
<td>Language</td>
<td>3.91</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>Serving</td>
<td>4.00</td>
<td>Good</td>
</tr>
<tr>
<td>4.</td>
<td>Radiography</td>
<td>3.92</td>
<td>Good</td>
</tr>
</tbody>
</table>

**Average Student Assessment** | **3.95** | **Good**
The results of the student's assessment of the Module-Shaped Accounting Teaching Materials if displayed in the diagram become as seen in Figure 4 below.

**Figure 4. Student Assessment Graph of The Financial Accounting Module**

Based on Table 4 regarding the results of student assessment of Module-Shaped Financial Accounting Teaching materials, the average score obtained is 3.95. These results when converted into quantitaf data, categorized as "Excellent" for use in learning. The summary of comments from respondents regarding the use of modules include: Module cover attracts attention to reading, The shape of the module is simple and easy to carry, Modules help to work on financial accounting practices and modules are easy to open.

**IV. Conclusion**

Based on the results of research and discussion obtained the following conclusions:
1) The final results of the development process obtained by financial accounting modules using LMS. The development model used is 4D (Thiagarajan, Semmel and Semmel); 2) The feasibility of teaching materials based on the results of expert validation obtained a very decent category; 3) The response of learners to teaching materials obtained very understanding results.

**Suggestion**

In accordance with the results of the study, for the next researcher the author advises to: 1) Conduct similar development research on other materials; 2) Make teaching materials with more KD; 3) Pay attention to the applicable curriculum so that teaching materials are arranged in accordance with the needs of learners and applicable rules.

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