



Increasing Student Critical Thinking Through the Development of Public Sector Accounting Practicum Modules Based on Problem Based Learning (PBL)

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Abstract

Achievement of learning objectives is supported by the use of appropriate teaching materials. E-books, a type of digital teaching material that utilizes educational technology, can be used as an alternative to improve learning outcomes. The aim of this research is to create an Android-based teaching material product with a Problem Based Learning approach on Accounting Practicum material for Government Institutions/Agencies, analyze the feasibility of e-books, and analyze students' responses to Android-based e-book teaching materials. The type of research used is the R&D (Research and Development) model with a 4D model developed by Thiagarajan, Semmel, and Semmel. This model consists of four stages: definition, design, development, and deployment. There was no distribution stage in this research due to researcher limitations. Quantitative and qualitative analysis is used to classify different types of data. The results of the research show that, based on the average results of the appropriateness of the material, language and graphics, the experts' validation meets the criteria of being very feasible. The results of product trials show that respondents' understanding of e-book development obtained an average score of 94.82%, which meets the very good criteria.

Keywords: *Teaching Materials; Problem-Based Learning; Public Sector Accounting*

Introduction

Current educational developments are also accompanied by technological developments, marked by the start of the term society 5.0. Where society 5.0 is the implementation of industry 4.0 which will take place in our social life. Meanwhile, industry 4.0 is an implementation that fully speaks to the development of the industrial world era. This requires changing the role of educators in the learning process in order to create graduates who can be competitive with society 5.0. In the past, educators were a source of knowledge (teacher center), but now they have changed to become facilitators, motivators, mentors, and learning partners for students (student centers), for this reason, currently we need teaching materials that are in accordance with the curriculum and current developments as well as renewable technology. Currently, there is still a need for teaching materials that can optimally support the learning process in accordance with the lecture curriculum, especially in the FEB Unesa accounting education study program.

Teaching materials are a set of materials, both written and unwritten, which are arranged systematically which can be used by respondents and lecturers in the learning process. Appropriate and efficient teaching materials can support success in learning accounting. Teaching materials are said to be good if they are well prepared and in accordance with the curriculum, presented attractively, and the content of the teaching materials can be understood by the user. There are many types of teaching materials such as visual, audio, audio visual, interactive multimedia teaching materials. Teaching materials can be prepared in various forms, including teaching materials made in book form or teaching materials presented in audio-visual media via the internet, such as e-learning. There are several learning methods that are in accordance with the principles of the scientific approach, including problem-based learning, project-based learning, inquiry, and discovery learning. This method is able to familiarize respondents with thinking critically in recognizing problems, formulating them, and finding solutions and drawing conclusions and conveying them orally or in writing.

One of the objectives of the Bachelor of Accounting Education study program is to produce prospective teaching staff who are skilled in the field of accounting. For this reason, there is a demand to produce prospective teaching staff who are ready to be used by stakeholders in the field. To achieve this competency, one effort that can be made is by providing respondents with Public Sector Accounting Practicum Courses. This course discusses the practice of implementing the accounting cycle in state institutions/government/non-profit organizations, which includes a discussion of the meaning and characteristics of government accounting, the preparation of financial reports which include Balance Sheet Reports, Budget Realization Reports, Cash Flow Reports, Operational Reports and Notes to Reports. Finances are in accordance with PSAP standards and continue with village financial management and implementation.

The material content in the Public Sector Accounting Practicum Course, apart from theory, also contains a lot of calculations in the form of numbers, so an appropriate method is needed to transform knowledge to respondents so that it is effective and efficient which can help students master material concepts and improve their critical thinking skills in solving problems. everyday problems.

Currently, the modules used in Public Sector Accounting Practicum lectures, especially on village finance material, are still limited, not many authors and publishers have published these modules. Therefore, this research aims to develop a Public Sector Accounting Practicum Module based on problem based learning so that it is hoped that it will be able to provide critical thinking skills and abilities for respondents in solving problems in the field of village financial management. This is supported by the research results of Daris (2015) which states that Problem Based Learning-based teaching materials can improve critical thinking skills, especially the categories of classifying, hypothesizing, assuming, analyzing, evaluating and drawing conclusions.

Based on the description above, it is necessary to develop a Public Sector Accounting Practicum Module using the Problem Based Learning approach as teaching material which can later be used to support lecture activities so that it is hoped that it can improve respondents' critical thinking abilities in solving problems.

Methods

The development of the Public Sector Accounting Practicum Module based on Problem Based Learning uses a research and development design. The research and development design was used in accordance with what was stated by Borg and Gall (1983) that development research is a process used to develop and validate research products.

The development model used in this research is the IDI (Instructional Development Institute) development model. The IDI development model uses an approach that includes 3 stages, namely define, develop and evaluate (UCIDT, 1973).

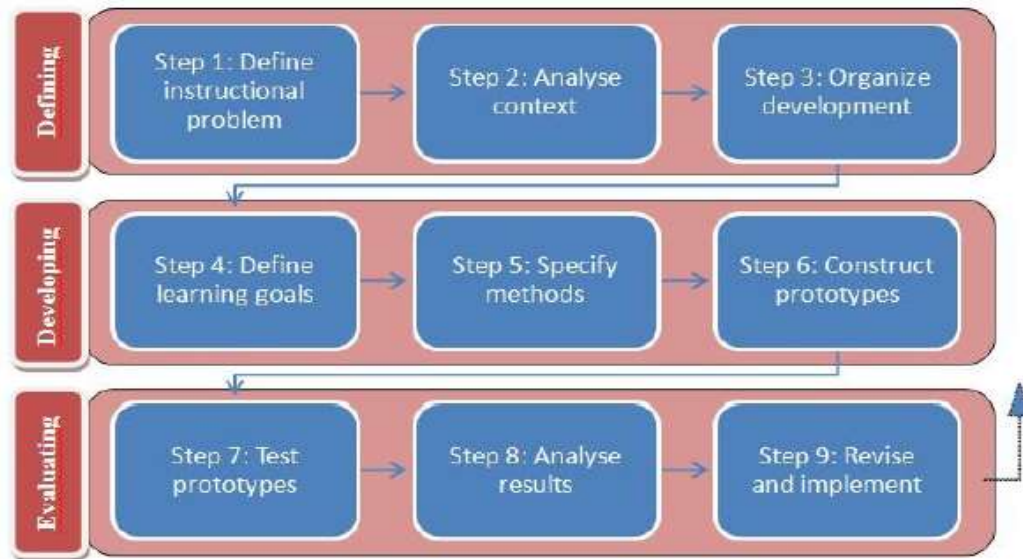


Figure 1. IDI development model (UCIDT, 1973)

The define stage is carried out with a needs assessment to determine the differences between what exists and what is ideal. The develop stage is the stage for producing/preparing development products, while the evaluate stage is carrying out trials, analyzing results and revising results.

Results and Discussion

The definition, design, development, and distribution stages are the stages followed in e-book development using the 4D Model by Thiagarajan, Semmel, and Semmel. Due to limitations, researchers can only continue research to the development stage.. (Pratiwi & Listiadi, 2021). At the definition stage, the product has first been determined and then the product is created to meet the needs and conditions of respondents and teachers during the learning process. At the definition stage, analysis has been carried out which is related to each other, namely: 1) front end analysis stage; 2) task analysis; 3) respondent analysis; 4) concept analysis; and 5) analysis of learning objectives.

The main problems of learning activities that are related to the learning products used are found at the front-end analysis stage. The development of e-book textbooks based on problem based learning is a solution to the problems that have been identified. Next, learner analysis is carried out to identify knowledge, individual and social skills as well as institutional financial literacy. The e-book contains material taught about village government accounting during odd semesters, which includes five basic competencies. Concept analysis is a process for establishing competency standards and basic competencies contained in subject matter. Lessons are presented by adapting the Learning Implementation Plan (RPP) / Semester Lecture Plan (RPS) that was previously created. A problem-based learning approach is used rather than presenting material, where the aim is to foster respondents' curiosity and motivation based on the respondent's ability to solve problems. Analysis of learning objectives (specifying instructional objectives) is carried out with the aim of achieving learning objectives well. The material presented must be able to support the achievement of learning objectives. Designing good learning objectives makes e-book development focused.

Design or planning stage (design). The BSNP 2014 format is used in the development of teaching materials that will be developed. The product creation process is carried out using Microsoft Word as an e-book design, Powtoon to create learning videos, and Flip Builder to integrate each page into a book that can be saved in the form of a website. The e-book teaching materials contain detailed descriptions of

learning materials, interactive learning videos, pictures of instructions for use, example questions equipped with instructions for solving them, in addition to group assignments based on problem based learning and independent assignments. Answer keys are available for each assignment, and respondents can calculate scores based on the self-assessment instructions. Draft I is made in the first preparation step. Product printouts in HTML5 and Flash format can be accessed online via Android smartphone, laptop or computer.

Development stage, the stage where material, language and graphics experts complete the revision process for Draft I. Suggestions for improvement from material experts include considering updates, justifying writing techniques, deepening sample questions, and paying attention to question instructions. Linguist experts provide suggestions for improvements in the use of effective and communicative sentences, the use of equivalents in Indonesian and adjusted to PUEBI guidelines. Providing advice by graphic experts is on point to add interesting images. Suggestions and opinions from experts are categorized as qualitative data which in the next stage is used as a reference in the process of improving and perfecting the product. The results of the improvements are called Draft II, where the next stage will be validated by experts using indicators for assessing material, language and graphics. The values listed on the validation sheet are on a scale ranging from 1-5. After the teaching materials that have been developed have gone through a review process and have been validated by experts, trials are limited to 20 respondents.

Determining the eligibility standards for e-books based on Problem Based Learning uses the results of validation results from experts based on validation values using closed questionnaires from experts. The values obtained will be calculated and presented using percentage techniques. Score results must meet eligibility standards. The results of the material expert assessment can be seen in table 1 below:

Table 1. Material Expert Validation Results

No.	Criteria	Percentage	Information
1.	Content Eligibility	100	Very Worth It
2.	Feasibility of Presentation	97.50	Very Worth It
3.	Problem Based Learning	97.26	Very Worth It
Average Material Feasibility Score		97.26	Very Worth It

Based on table 1, the average validation score of 97.26% was given by material experts based on the suitability of the content, presentation and the basis of Problem Based Learning. According to Riduwan (2015), the "Very Appropriate" criterion is given to problem based learning e-books in terms of material if a final score is obtained ranging between 81% -100%. The feasible statement is because the development carried out is in accordance with the feasibility index (BNSP, 2014b).

Then, the final results of the language expert validation scores show the following results:

Table 2. Linguist Validation Results

No.	Criteria	Percentage	Information
1.	Compatible with student development levels	100	Very Worth It
2.	Legibility	80	Worthy
3.	Ability to provide motivation	100	Very Worth It
4.	Straightforwardness	90	Very Worth It
5.	Interconnectedness and sequence of thought flow	90	Very Worth It
6.	Conformity with Indonesian grammar rules	100	Very Worth It
7.	Use of terms and symbols/symbols	93.3	Very Worth It
Mean Language Eligibility Score		93.3	Very Worth It

According to table 2, the linguistic expert validation assessment gave an average score of 93.33% for conformity with the linguistic criteria according to the table. The language contained in the problem based learning e-book meets the "Very Feasible" criteria if the final result reaches 61%–80, so it can be interpreted that the language used is in accordance with the feasibility index (Riduwan, 2015). Furthermore, an assessment by a graphic expert obtained the final results, namely:

Table 3. Graphics Expert Validation Results

No.	Criteria	Percentage	Information
1.	Book Size	100	Very worthy
2.	Book cover layout	82.5	Very worthy
3.	Cover Typography	86.66	Very worthy
4.	Illustration of e-book teaching materials	80	Worthy
5.	Typography of e-book teaching materials	85	Very worthy
6.	E-book content typography	85.45	Very Worth It
7.	Book illustration	86.61	Very Worth It

According to table 3, the validation assessment of graphic experts is based on graphic criteria, getting a final result of an average score of 86.61%. Riduwan (2015) states that problem based learning e-books can be interpreted as "very feasible" in terms of graphics if the validation results reach a percentage between 81% and 100%. This is because of the graphic appropriateness standards set by BNSP (2014). The results of the validation of the development of problem based learning e-books meet the criteria of "very suitable" for use based on the eligibility standards of the three instruments that have been met: material average 93.57%, language 93.33%, and graphics average 86.61 %.

The process of making e-books based on problem based learning, limited trials were carried out to determine respondents' reactions to the learning material. Respondents filled out a closed questionnaire before analysis. The problem solving/problem based learning based e-book that was developed meets the criteria of "very well understood" if the score is between 81 and 100 percent according to Riduwan (2015). The percentage level of student responses obtained 94.82%. The material component is 93.57%, language is 93.33%, and graphics is 91.171%.

Summary and Conclusion

The 4D development model from Thiagarajan, Semmel, and Semmel was used to develop Problem Based Learning e-book teaching materials. This process consists of three stages: defining an e-book, designing an e-book, and developing an e-book. There are limitations for researchers in conducting research so that researchers only carry out the development stage. The learning material contained in the e-book is limited to Public Sector Accounting Practicum. The feasibility of e-book development was declared very feasible based on an average of 91.17% in the validation assessment of material, language and graphics obtained from and by validators. Students' responses to the learning material in e-books obtained an average score of 94.82% with very good understanding criteria. So it can be concluded that the results of the development of a public sector accounting practicum e-book based on problem base learning can be understood very well by respondents.

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