

Development of Applications for Making Evidence-Based Accounting Practice Modules

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Abstract— Application development is needed to create transaction evidence-based basic accounting practice modules to increase learning effectiveness. The research problem is how to develop an application to create transaction evidence-based basic accounting practice modules? The general objective of this research is to produce an application for making transaction evidence-based basic accounting practice modules. The specific aims of this research are 1) to analyze the need for application development with Microsoft Excel for creating basic accounting practice modules; 2) to produce applications for creating basic accounting practice modules; 3) to analyze the test results of experts and users of the Microsoft Excel application for evidence-based basic accounting practice modules. The research step includes planning, production, and evaluation (PPE). The research procedure consists of three stages, namely: 1) planning, which includes determining modules and analyzing application requirements; 2) production, namely application development with Microsoft Excel to produce a basic accounting practice module based on transaction evidence; and 3) assessment, namely by conducting application testing with Microsoft Excel by experts and application users. The data used in this research is quantitative such as application testing data with Microsoft Excel by experts and users. The quantitative analysis technique used is percentage analysis. The research results showed that the application for making transaction evidence-based basic accounting practice modules consisted of three main parts, namely files, data input and transaction documents, and assignments. This application has met the technical and operational feasibility requirements for making transaction evidence-based basic accounting practice modules.

Keywords—applications; excel; accounting; practice; module

I. INTRODUCTION

The curriculums are learning guides designed to meet the needs of students, facilitate and build relationships between lecturers and students. The

comprehensive curriculum implementation leads to more focused teaching and learning practices and improves academic performance [1], [2]. To be able to produce skilled and trained workers needed by the industrial world or the world of work, in the vocational college study program curriculum, the practical credit load reaches 50% or more of the total semester credit units load. Following the guidelines for preparing the college curriculum, the quality of the vocational higher education curriculum is continuously improved because it is dynamic, adaptive, accommodating, and contextual with the times and needs.

Basic accounting practice is one of the practical courses that generally teach in accounting study programs in vocational higher education. Basic accounting practice provides the ability to initialize, handle transaction evidence, journals, general ledgers and subsidiary ledgers, and financial reports for service and trading companies manually and on a spreadsheet basis. Basic accounting practice learning requires basic accounting practice modules. Basic accounting practice modules that are diverse, contextual, innovative, realistic, and updated as needed can improve student competence and learning outcomes [3], [4], [5], [6].

Based on the preliminary survey, it is known that the evidence-based basic accounting practice module does not vary. It does not describe the actual practice of a business entity, the method of recording the inventory cost formula, and the petty cash method used. Basic accounting practice modules are not updated every year. The implementation of basic accounting practices manually is not following actual accounting practices in the industry. This situation hurts student learning outcomes because teaching materials affect student learning outcomes [7], [8]. Appropriate teaching materials have a positive impact on the learning process and learning success.

Improvisation of teaching materials can improve learning performance [9], [10].

Constraints in providing evidence-based basic accounting practice modules suitable to needs include the absence of applications that can be used to create these practice modules. Applications using Microsoft Excel can be used to make basic accounting practice modules more diverse. It will be easier to create and modify a transaction evidence-based accounting practice module by using the application.

The application to create an evidence-based transaction basic accounting practice module can be created using Microsoft Excel. Microsoft Excel is an application that is widely used in accounting and finance learning by the accountant. Learning accounting practices uses a spreadsheet application following accounting practices in the industry [11], [12].

This research is focused on analyzing the needs of application development, creating applications with Microsoft Excel for basic accounting practice modules, and analyzing the results of testing by experts and application users.

II. LITERATURE REVIEW

2.1 Basic Accounting Practice Module

A module is a form of print-based teaching material designed for independent learning. Modules are teaching materials that are packaged as a whole and systematically designed to help students master specific learning objectives [8]. The basic accounting practice module is a practicum module in the field of basic financial accounting. It consists of an overview of the company, evidence of transactions, managing journals, managing general ledgers, subsidiary books, and compiling financial reports.

Financial accounting is a part of accounting that aims to produce financial information of an entity that is useful for stakeholders as users of financial statements in making decisions about investment and credit, understanding financial position, financial performance, and cash flow. Financial statements prepared by company management following financial accounting standards [13], [14], [15], [16].

2.2 Previous Research

Research on accounting practice modules has been conducted before, including research on the development of a spreadsheet-based accounting basic practice module. The module was developed using the physical method and petty cash fund with a fixed fund system. The study results indicate that the module is suitable for use in learning accounting practices [17]. Research on spreadsheet-based financial accounting

practice modules that focus more on postal accounting of financial statements also shows that the module meets the eligibility for use in accounting practice [18]. Research on student acceptance of the use of spreadsheet-based applications in accounting practices shows the high student acceptance of the use of spreadsheet-based applications in accounting practice [12]. Research shows that small and medium enterprises still choose Microsoft Excel as an accounting tool for their companies because of its low cost, usability, and ease of use [19]. Other studies have also shown that spreadsheet applications still dominate enterprise resource planning and advanced planning systems [20].

Previous studies have shown the role of learning technology and the importance of teaching materials to improve learning outcomes. Previous studies have also shown that studies on the use of spreadsheet/excel applications are still relevant because they are still widely used in companies and learning. Previous studies on the development of accounting practice modules focused on the module model, the approach used in module development, and the basis for module development. This research does not examine the use of technology for the manufacture of these modules. It needs to study the transaction evidence-based accounting practice module using applications made with Microsoft Excel.

III. RESEARCH METHODS

The research step includes planning, production, evaluation (PPE), which adopts the Richey and Klein model [21]. Planning is the establishment of modules, namely basic accounting practice modules and analysis of application requirements. Production, namely application development using excel. Assessment is by testing the excel application.

The data type used is quantitative data, namely expert and user assessment data about applications with Microsoft Excel for making transaction evidence-based basic accounting practice modules. The research data were obtained from primary and secondary sources. Data were collected using several data collection methods, namely face-to-face interviews, participatory observation, and documentation.

The research instrument used in testing the application was a questionnaire for expert and user responses. The research instrument uses 4 Likert scales, from 1 (not good) to 4 (very good). Application feasibility testing is carried out by experts and application users. Expert examiners consist of 10 computer/accounting experts, and user examiners consisting of 10 accounting lecturers who teach

accounting practices. Data were analyzed using percentage analysis techniques. The percentage rating ranges are presented in Table I.

TABLE I. APPLICATION FEASIBILITY LEVEL

Value Range	Feasibility Level
81.26-100	Very feasible
62.51-81.25	Feasible
43.76-62.50	Less feasible
25.00-43.75	Very infeasible

IV. RESULTS AND DISCUSSIONS

Research procedures include planning, production, and assessment. Each procedure stage described as follows.

4.1 Planning

The planning stage consisted of several activities were carried out, namely determining modules and analyzing application requirements. The specified module will be developed, namely a transaction evidence-based basic accounting practice module. This module is a basic accounting practice module in service/trading companies. Needs analysis of the application is carried out by carrying out exploration of learning outcomes in the curriculum and practical materials used, exploration of the characteristics of lecturers and students, and exploration of accounting practices in service and trading companies.

Based on the exploration of learning outcomes, one of the learning outcomes in the Diploma 3 Accounting Study Program is being able to record transactions and compile financial reports of service, trading, manufacturing companies following the accounting cycle. As well as the Diploma 4 Accounting Study Program should be able to present financial statements by applying generally accepted accounting standards and principles. Compiling financial statements can be done manually, based on spreadsheets and or using an accounting application program package.

Based on the exploration of the characteristics of the lecturers and students of the Accounting Department-Bali State Polytechnic, known that participants in the basic accounting practice course are semester II students. Students use spreadsheet/excel processing applications, and students have previously studied spreadsheet/excel processing applications. Likewise, with the lecturers, all lecturers are already accustomed to using Microsoft Excel for their tasks. Based on this information, in developing this application for creating evidence-based basic accounting practice modules, the focus will be on using Microsoft Excel.

Based on the exploration results of accounting practices in MSME companies (Micro, Small, and Medium Enterprises), it is known that MSMEs Could use Financial Accounting Standards for Micro, Small, and Medium Entities. Following MSME standard, the entity prepares financial statements consisting of financial position, profit or loss, and notes to financial statements. However, with certain conditions, MSMEs can use either the Financial Accounting Standards for Entities without Public Accountability or the General Financial Accounting Standards.

According to Financial Accounting Standards (PSAK No. 01 2018), complete financial statements consist of six components, namely a statement of financial position at the end of the period, a statement of profit and loss, and other comprehensive income for one period, statements of changes in equity during the period, statements of cash flows during the period, notes to financial statements. Besides that, there are also statements of financial position at the beginning of the nearest previous period when the entity applies an accounting policy retrospectively or makes restatements of financial statement items. By considering these conditions, the application will be designed for basic accounting practice cases to produce financial reports following more comprehensive general SAK provisions

4.2 Production

The application developed using Microsoft Excel for creating a transaction evidence-based accounting practice module. The module design includes the files, transactions, and assignments. Parts of the file consist of company information, accounting policies, accounts, opening balances, vendor, customer, and inventory information. The transaction section includes transaction data input and transaction documents. Transaction documents include cash purchases, credit purchases, cash sales, credit sales, cash disbursements, cash receipts, petty cash, and memorial transactions. The assignment section consists of initial arrangements. Besides that, there are journals, general ledgers and subsidiary books, financial reports, closing trial balances, and practical working papers. The application uses Microsoft Excel for the transaction evidence-based accounting practice module is reflected in the main menu of the application in Figure 1.

MENU UTAMA			
FILE	TRANSACTION DOCUMENT		ASSIGNMENT
Company	Cash Purchases	Doc	Set Up
Accounting Policies	Credit Purchases	Doc	Journal
Account	Purchases Return	Doc	General Ledger
Beginning Balance	Cash Sales	Doc	Subsidiary Ledger
Vendor	Credit Sales	Doc	Financial Statement
Customer	Sales Return	Doc	Closing Trial Balance
Inventory	Cash Payment	Doc	WORKING PAPER
18/07/2021 00.00	Cash Receipt	Doc	PRACTICE WORKING PAPER
	Petty Cash	Doc	
	Memorial	Doc	
Created by: I Made Ariana			

Fig. 1. Menu of the application

1) *File*

The general company information includes company identity (company name, address, city, telephone, fax, and e-mail address), accounting information, and tax information. Accounting information consists of the date and period of the financial statements. Tax information consists of the taxpayer identification number/taxable entrepreneur registration number, date of inauguration of the taxable entrepreneur, tax invoice serial number, branch code, and type of business. Accounting policies include general policies, purchases, sales, cash disbursements, cash receipts, inventories, fixed assets, and others.

Account and opening balance consist of the account number, account name, classification, normal balance, header/details, and opening balance. Vendor information includes the vendor name, vendor number, address, city, telephone terminology, invoice number, invoice date, and opening balance. Customer information consists of the customer name, customer number, address, city, telephone, term, date invoices, and opening balances. Inventory information consists of product name, product number, size, quantity, price per unit, and total.

2) *Transaction*

The transaction section consists of two main parts, namely the transaction data input data and transaction evidence. Inputs and output evidence of transactions include cash and credit sales transactions (documents numbers, invoice numbers, invoice dates, customer names, delivery dates, payment terms, delivery terms, no. tax invoice, amount, no. goods, description, price, freight, sales department, and approved by). Cash and credit purchases (numbers, documents, invoice numbers, invoice dates, vendor names, delivery dates, purchase order numbers, payment terms, shipping terms, tax invoice numbers, quantities, item numbers, descriptions, price, freight collected, purchased, and approved by). Besides that, there are cash

disbursements and cash receipts, petty cash, and memorial transactions.

Cash disbursements consist of document number, evidence number, date, cash/check, check number, date of the check, vendor/other parties name, vendor address, vendor city, debt, discount, description, another debit, another debit, checker, and book. Cash receipts consist of the document number, evidence number, date, cash/check, check number, check date, customer/other parties name, customer address, city of the customer, accounts receivable, discount, information, other credit, other credit, checker, and book.

Petty cash consists of no. of the document, proof number, date, paid to, amount, letters, statement, approved by, payer. The memorial transaction consists of the proof number, date, the contents of the memo, and the amount.

3) *Assignment*

The assignment section consists of initial arrangements, journals, ledgers and subsidiary books, financial reports, closing trial balances, and practical work papers. The initial setup assignment is an assignment regarding the initial preparation before the practice, namely company information accounts, accounting policies, opening accounts and balances, vendor, customer, and inventory information.

Journal assignment is an assignment regarding recording transactions in journals. Journal includes journals of purchases, sales, cash disbursements, cash receipts, and memorial journals. General ledger and subsidiary ledger assignment is an assignment regarding posting journal data to general ledger and subsidiary ledger. Assignment of preparing financial statements is an assignment of financial statements preparation. This assignment includes the preparation of trial balances and worksheets, financial reports, and other reports. The closing trial balance assignment contains the task of preparing the closing journal and the closing trial balance.

The practical working paper section contains all the work papers needed in practice. Accounting practice worksheets developed based on spreadsheets as a computerized simulation of worksheets [10]. because the spreadsheet application is still widely used in companies along with other software for accounting and other operations [11], [12] After all, the spreadsheet application is flexible and easy to use [13]. Working papers are grouped into interrelated sub-works, namely the initial preparation of assignments, journals, ledgers and subsidiary ledgers, financial statements, closing trial balances.

4.3 Assessment

In the assessment stage, testing and assessment of the application will be using expert and user response questionnaires. The research instrument uses 4 Likert scales, from 1 (not good) to 4 (very good). Test and assessment of applications by experts and users (lecturers) consist of the technical and operational feasibility. The following are the results of application testing. The technical feasibility including hardware and operating systems ability (Central Processing Unit response, the operating system supports), simplicity, and ease of use (easy to learn, dialog guidance, structure of menu). Operational feasibility including the user’s ability to use (the user can quickly use, and overcome its difficulties), the ability of applications to create information (generate detailed information, can produce displayed and printed information), and applications control (password, input, and output control).

The results of expert testing on the technical feasibility aspect showed that 93.50% stated that the hardware and operating system could support applications and 86.25% state that the application was simple and easy to use. It means that the application using Microsoft Excel is very feasible from the technical feasibility aspects. The results of expert testing on the operational feasibility aspects showed that 86.25% stated that the user could use the application, 88.75% state of applications could produce modules, and 78.50% state that the application had application control. It means that the application using Microsoft Excel is very feasible from operational feasibility aspects. Overall, the application using Microsoft Excel is very feasible from technical and operational feasibility aspects. The application is very feasible in using to create a basic accounting practice module for learning.

TABLE II. THE RESULTS OF APPLICATION TESTING BY EXPERTS

Aspects	Score (%)
Technical Aspects	
Ability of hardware and operating system	93.50
Simplicity and ease of use.	86.25
Operational Aspects	
The user's ability to use application.	86.25
Ability of application to produce modules.	88.75
Application control.	78.50

The results of user assessments of the application can be seen in Table III as follows.

TABLE III. RESULTS OF APPLICATION ASSESSMENT BY USERS

Description	Usefulness		Ease of Use		Attitude	
	n	%	n	%	n	%
Strongly Disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	0.0	0.0	0.0	0.0
Agree	7.0	70.0	5.0	50.0	4.0	40.0
Strongly Agree	3.0	30.0	5.0	50.0	6.0	60.0
Total	10	100	10	100	10	100

The application usability assessment results show that 70% of users agree, and 30% of users strongly agree that the application is useful for creating basic accounting practice modules. The ease of use of the application assessment results shows that 50% of users agree, and 50% strongly agree that the application is easy to use in creating basic accounting practice modules. User's attitude assessment results show that 40% of users agree, and 60% of users strongly agree to use the application to create a basic accounting practice module. User assessment results indicate that the user can accept the application using Microsoft Excel for the basic accounting practice module.

The results of technical and operational feasibility tests by experts and user acceptance are consistent with previous studies. The spreadsheet-based accounting application meets the technical and operational feasibility requirements [22], [18]. Using spreadsheet-based applications can be accepted by users in learning [12], [23], [24].

V. CONCLUSION

The application for making basic accounting practice modules developed using Microsoft Excel. The application consists of three main parts, namely files, data and transaction documents, and assignments. The results of the expert's assessment of the application for making basic accounting practice modules show that the application meets technical and operational feasibility. The user assessment results indicate that the user can accept the application for making a basic accounting practice module. The use of this application by lecturers will be able to increase the diversity of practice materials and increase the effectiveness of learning.

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