

Audio-Visual Media of Spreadsheet Based Financial Management Learning to Support Blended Learning

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Abstract— Audio-visual media of spreadsheet-based financial management learning is indispensable to support blended learning to increase learning effectiveness. The research objectives were: 1) to produce audio-visual media for financial management learning based on spreadsheets, and 2) to analyze the test results on the feasibility of audio-visual media for spreadsheet-based financial management learning. This type of research is research and development (Research & Development) with a descriptive method. The research procedure consisted of 1) analysis of audio-visual media requirements for learning financial management based on spreadsheets; 2) designing a spreadsheet-based audiovisual media for financial management learning; and 3) testing and assessing the audio-visual media of spreadsheet-based financial management learning. The type of data used is quantitative data such as financial data and media feasibility test results obtained from primary and secondary sources. The research instrument used was a questionnaire of expert responses and users of audio-visual media. The instrument uses 4 Likert scales, from 1 (not good) to 4 (very good). The test subjects consisted of 10 experts and 105 students. Data were analyzed using percentage analysis techniques. The research results showed that the audio-visual media of spreadsheet-based financial management learning consisted of working capital, time value of money, fixed asset investment, financial ratios, capital costs, bonds, Break-Even Point (BEP), and optimization. The audio-visual media of spreadsheet-based financial management learning have met the feasibility requirements for content, presentation, language, and graphics to support blended learning.

Keywords— audio-visual, finance, spreadsheets, blended learning

I. INTRODUCTION

Blended learning is an innovative approach [1] as an alternative to answering challenges in online learning by offering a combination of online learning

and face-to-face (traditional) learning. This learning model is a development of the e-learning model that only relies on online learning. Blended learning supports learning that is more flexible, interactive, varied, and easily accessible [2], and provides a space for developing collaborative skills [3].

Blended-based learning can expand the learning range, increase financing efficiency, be flexible according to learning needs, and increase learning attractiveness. The use of blended learning-based learning media can increase learning success [4], [5], increase achievement [6], and student motivation [7]. Learning scores with blended learning are better than traditional learning [8].

Content production of Learning media is an important part of the blended learning implementation besides the learning design and content delivery. At this stage, the teacher can develop their learning media to help students in the learning process [4]. Audio-visual media is a form of learning media. The use of audio-visual aids can improve the acquisition of knowledge and skills [9], [10]. The use of audio-visual aids can increase students' interest and outcomes [11], [12], [13], [14]. Using audio-visual aids can increase motivation, and participation in learning [15], [16]. The use of audio-visual learning media also increases students' understanding [17] and provides positive changes in student performance [18].

Audio-visual media for spreadsheet-based financial management learning is very much needed to support blended learning, but audio-visual media according to the needs are not yet available. Therefore, audio-visual media for spreadsheet-based financial management need to be developed to support blended learning. Audio-visual media for learning must meet the eligibility requirements of

teaching materials such as the feasibility of content, presentation [19], [20], graphics, and language [21], [22].

Learning media should fulfill the eligibility as learning media so that effectively used in learning. The learning media must be tested and assessed by experts and users. Therefore, this spreadsheet-based audio-visual media for financial management learning needs to be tested and assessed by experts and users. Testing by experts intended to determine the appropriateness of the content, presentation, graphics, and language of the learning media. Assessment by user intended to determine content, presentation, learning indicators, interest, and assistance in using Audio-visual media for learning.

This study describes the audio-visual media of spreadsheet-based financial management learning. This study analyzes the results of expert's testing of content, presentation, graphics, and language feasibility of the audio-visual media. Besides that, this study also analyzes the results of user assessment of the content, presentation, learning indicators, interest, and assistance of audio-visual media in learning to support blended learning implementation.

II. METHODS

This type of research is research and development with a descriptive method. The research procedure consisted of 1) analysis of audio-visual media requirements for learning financial management based on spreadsheets; 2) designing a spreadsheet-based audio-visual media for financial management learning; and 3) testing and assessing the audio-visual media of spreadsheet-based financial management learning.

The object of this research is the development of audio-visual media for spreadsheet-based financial management in the Department of Accounting, Bali State Polytechnic. The type of data used is quantitative data such as financial data and media feasibility test results. The research data were obtained from primary and secondary sources.

Data were collected using several data collection methods, namely interviews, questionnaires, and documentation. The instrument used was a questionnaire of expert responses and users of audio-visual media. The research instrument uses 4 Likert scales, from 1 (not good) to 4 (very good). The subjects of the test and assessment consist of 10 experts and 105 students. Data were analyzed using percentage analysis techniques. The feasibility criteria are presented in Table 1 as follows.

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

III. RESULTS AND DISCUSSION

Financial management is the management of financial functions. Functions are the main activities that must be carried out by those responsible for specific fields. Financial management is a combination of science and art that discusses, studies, and analyzes efforts to obtain, manage and share funds. The scope of financial management includes fundraising, fund management, and distribution of funds. Fundraising involves efforts made to find sources of funds that can be used or utilized by the company. Fund management involves the efforts made to manage funds and investing them in productive or profitable places. Distribution of funds involves the decision to share profits to the owners according to their contribution to the company [23], [24].

Blended learning is defined as a learning model that combines traditional (face-to-face) learning models with online (eLearning) learning models. This learning model is a development of the e-learning model. In the e-learning learning model, the learning process only depends on online learning [4]. The implementation of blended learning includes the learning design process, providing content /content production, and delivering content/media (Content Delivery). The learning design is designed in such a way as to achieve learning objectives which include learning objectives, learning analysis, learning strategies, teaching materials, and assessment of learning outcomes. At the content production stage, lecturers/teachers can develop their learning media to help students in the learning process. The learning media can be in the form of modules, audio-visual, namely media that has sound elements and image elements (video/film, VCD), audio, presentation slides, and others. Content delivery can use various Learning Management System (LMS) services such as Moodle, Blackboard, Edmodo, Dokeos, and many LMS application services, both paid and free [4], [15].

3.1 Description of Audio Visual Media

Audio-visual media for learning spreadsheet-based financial management is an audio-visual media for financial management that is supported by a spreadsheet-based application. Following the application's main menu, spreadsheet-based financial management learning materials consisted of working capital, time value of money, fixed asset investment,

financial ratios, cost of capital (COC), bonds, break-even point (BEP), and optimization.

2) Audio visual media of time value of money



Fig. 1. Main menu of the application

Description of audio-visual media of working capital, time value of money, fixed asset investment, financial ratios, COC, and bonds, as well as BEP and Optimization, will be described as follows.

1) Audio visual media of working capital

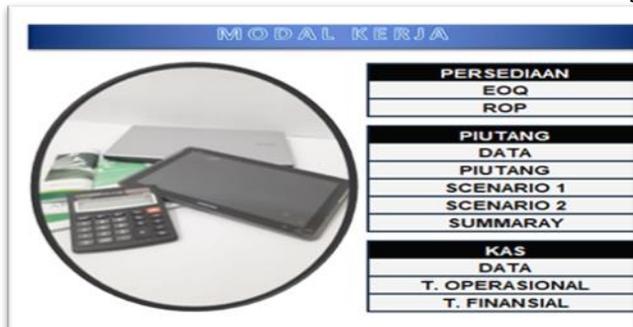


Fig. 2. Working capital menu

Audio-visual media of working capital provides an overview of learning cash, accounts receivable, and inventories. Audio-visual media of cash describe learning about cash budgets which consist of operational transaction data and financial transactions. Audio-visual media of accounts receivable describe learning about the preparation of various scenarios in accounts receivable management. Audio-visual media of inventory describe learning about determining the optimal order quantity and inventory reorder points.

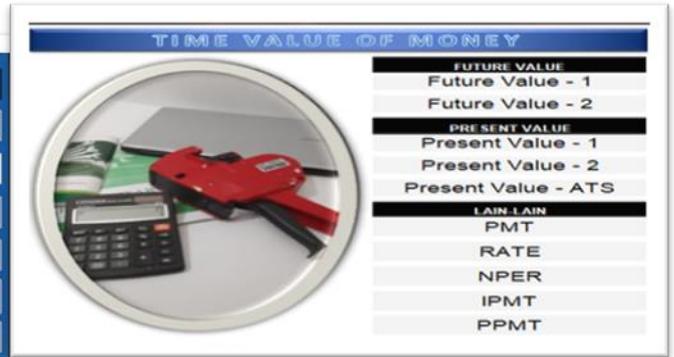


Fig. 3. Time value of money Menu

Audio-visual media of the time value of money consists of future value, present value, and others. This audio-visual media describes future value (FV) and present value (PV) learning such as FV, PV, PMT, RATE, NPER, IPMT, PPMT functions, and other functions.

3) Audio visual media of fixed assets



Fig. 4. Fixed assets menu

Audio-visual media of fixed assets illustrates learning about various methods of depreciation of fixed assets. In addition, this audio-visual media also describes learning about analysis of investments in fixed assets. The analysis method includes payback period (PP), Average Rate of Return (ARR), Internal Rate of Return (IRR), Net Present Value (NPV), and Profitability Index (PI).

4) Audio visual media of financial ratio



Fig. 5. Financial ratio menu

Audio-visual media of financial ratios illustrates learning about financial statement analysis with ratio analysis. Audio-visual media of financial ratios includes liquidity ratios, solvency, activity, Du Pont System, and common size ratio.

5) Audio visual media of COC and bonds



Fig. 6. Capital cost and bonds menu

Audio-visual media of COC and bonds illustrates the learning of costs of capital related to calculating the cost of capital. In addition, the audio-visual media of COC and bonds also describe learning about bonds, namely the use of the straight-line amortization method and effective interest method.

6) BEP and optimization

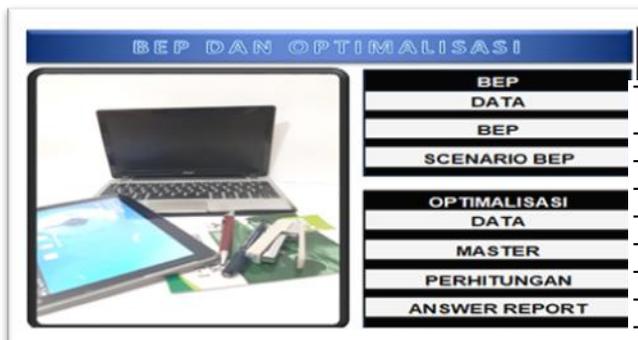


Fig. 7. Menu of the application

Audio-visual media of BEP and optimization illustrates learning about BEP and optimization of production. The BEP section describes learning about creating BEP scenarios. The optimization section describes learning about the calculation of the optimization of the production of goods.

3.2 Audio Visual Media Assessment

Based on the material expert's examination of the feasibility of the module content, it can be shown that the average percentage of content aspect assessment is 90.4%. Its means that from the content aspect, audio-visual media for spreadsheet-based financial management learning is considered very feasible. This audio-visual media is suitable with the competency standards and basic competencies, according to the characteristics of the training, the need for training materials, learning materials, additional insights, and conformity with moral and social values. Visually, the results of the content feasibility test by material experts are presented in Table II.

TABLE II. RESULTS OF THE CONTENT FEASIBILITY ASSESSMENT

No.	Assessment Items	Total Score	Percentage (%)
1	Conformity with Standard and Basic Competencies	36	90.0
2	Conformity with the characteristics of the course	35	87.5
3	Conformity with the needs of teaching materials	37	92.5
4	The truth of the substance of learning material	37	92.5
5	Benefits for additional insight	35	87.5
6	Conformity with moral values, and social values	37	92.5
Average			90.4

The average presentation feasibility test result was 87.5%. Its means that the audio-visual media for spreadsheet-based financial management learning is declared very feasibly. This audio-visual media has clear goals (indicators), presentation messages, give motivation, attraction, interaction (providing stimulation and response), and completeness of the information. Visually, the results of the presentation feasibility test by material experts are in Table III.

TABLE III. RESULTS OF THE PRESENTATION FEASIBILITY ASSESSMENT

No.	Assessment Items	Total Score	Percentage (%)
1	Clarity of objectives to be achieved	35	87.5
2	Order of presentation	34	85.0
3	Giving motivation	36	90.0
4	Attractiveness	36	90.0
5	Interaction (giving stimulus and respond)	34	85.0
6	Completeness of information	35	87.5
Average			87.5

The average result of the graphic aspect feasibility test is 87.5%, indicating that the graphic aspect of

audio-visual media for spreadsheet-based financial management learning is very feasible. This audio-visual media uses the type and size of letters, layouts, illustrations, pictures/photos, audio, and appropriate display designs. Visually, the results of the graphic feasibility test by material experts are in Table IV.

TABLE IV. RESULTS OF THE GRAPHICS FEASIBILITY ASSESSMENT

No.	Assessment Items	Total Score	Percentage (%)
1	Use font type and size	36	90.0
2	Layout	35	87.5
3	Illustration	34	85.0
4	Picture/Photo	35	87.5
5	Audio	35	87.5
6	Display design	35	87.5
Average		87.5	87.5

The average language eligibility test result was 89.0%. Its means that the audio-visual media for spreadsheet-based financial management learning is declared very feasibly. This audio-visual media is easy to read, clear information, suitable with good and correct language rules, and effective and efficient language. Visually, the results of the language feasibility test by material experts are in Table V.

TABLE V. RESULTS OF THE LANGUAGE FEASIBILITY ASSESSMENT

No.	Assessment Items	Total Score	Percentage (%)
1	Legibility	37	92.5
2	Information clarity	36	90.0[1]
3	Conformity with rules	35	87.5
4	Good and correct language	35	87.5
5	Use of language effectively and efficiently	35	87.5[2]
Average		89.0	89.0

Continuing expert assessment data processing is conducting user for students. User assessments consist of display modules, learning indicators, audio-visual media content, interest in using audio-visual media, and assisting with audio-visual media. Based on the student's assessment, the average percentage of the assessment is 90.4%. Its means that audio-visual-based training materials have good display modules, learning indicators, audio-visual media content. Students are interested and feel helped by using audio-visual-based training materials. Students' perceptions of audio-visual media are in Table VI.

TABLE VI. STUDENT PERCEPTIONS OF AUDIO-VISUAL MEDIA

No.	Assessment Items	Total Score	Percentage (%)
1	Display module	379	90.2
2	Learning indicator	376	89.5
3	Content of audio-visual media	377	89.8
4	Interest in audio visual media	383	91.2
5	Help with audio visual media	384	91.4
Average			90.4

IV. CONCLUSION

The research results showed that the audio-visual media of spreadsheet-based financial management learning consisted of working capital, time value of money, fixed asset investment, financial ratios, capital costs, bonds, break-even point (BEP), and optimization. Audio-visual media for spreadsheet-based financial management learning have met the eligibility requirements for content, presentation, language, and graphics to support blended learning. The audio-visual media of spreadsheet-based financial management learning is recommended to be used in blended learning to increase learning effectiveness. The audio-visual media of spreadsheet-based financial management learning still uses illustrative company data, not actual company data.

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