

ADDIE Model

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Submission date: 27-Sep-2018 02:17PM (UTC+0700)

Submission ID: 1009316182

File name: ADDIE_Model.doc (108K)

Word count: 4634

Character count: 25640

Feasibility, Implementation and Evaluation of the Development of Accounting Learning through the ADDIE Model with Media and Introduction to Accounting Textbooks

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Abstract

This study was conducted to: 1) Conduct a feasibility test for developing accounting learning through media and accounting teaching materials. 2) Implement or implement a model in accounting learning in class. 3) Evaluate accounting learning as a student performance measurement tool. This study uses "Research and development methods or R&D cycles, which are carried out in two years. Qualitative data methods use descriptive analysis. Based on observation results indicate that student-learning activities tend to only listen to lecturers' explanations, record and work on problems. For that diverse and innovative learning activities are needed. For this purpose, instructional materials and learning media are designed through 1) expert review 2) small group trials and 3) Field trials using experiment methods through initial test and final test. And the results of trials from small groups and field tests, will be made improvements in the design of teaching materials and learning media. The instruments used in this study are questionnaires. The targeted results are the implementation of accounting learning models with ADDIE models, with teaching materials, and learning media interesting and interactive accounting if to improve the quality of accounting learning. Therefore, the need for innovation in learning accounting through the ADDIE model to assist lecturers, in creating effective, efficient, and attractive learning programs so that the results of introductory learning accounting can be achieved.

Keywords: Innovation, Accounting Learning and ADDIE Model

Introduction

Higher education has a role to prepare students to be ready to work, both work independently (self-employed) and fill job vacancies in both government and private institutions. Therefore, the direction of education development is oriented towards meeting the demands of the labor market. The workforce needed is human resources who have the competence in accordance with their field of work, have high adaptability and competitiveness. Education at the tertiary level must be carried out on the basis of the principle of investment in human resources (human capital investment), the higher the quality of education and training obtained by a person, the more productive the person will be, so that in addition to increasing national productivity, increasing the competitiveness of labor in the market global work. To be able to compete in the global market, to achieve this goal, the quality of education must be continuously improved. The quality of education is related to the quality of processes and products. The quality of the process can be achieved if the learning process takes place effectively and students can appreciate and experience the learning process meaningfully. Product quality is achieved if students show a high

level of mastery of learning tasks in accordance with their needs in life and the demands of the workforce.

Based on the results of the research in the first year, the researchers found that in practice, the learning process that was carried out was still focused on the lecturer who had the ability to study the subject or the still centralized learning of the lecturer as the center point had not led to the student center learning, the lecturer in general was still teaching in the conventional way and method teaching has not varied, the average teaching lecturer does not distinguish learning models based on the competencies to be achieved in the curriculum, meaning that all the material in the curriculum is delivered in a uniform model, ranging from lecture models, discussions and assignments, there are no specific models designed for specific competencies and have not used interactive and interesting learning media. The author has carried out the stages of designing, this stage contains a series. Activities in order to design the desired model. Activities carried out in the form of format selection and substance selection of materials to be used during learning using student center learning models. The format was adopted from several existing learning models and developed in accordance with actual field conditions in order to develop creativity and innovation in accounting learning with the substance of the material adapted to existing material standards. The design of a learning model starting from curriculum analysis, teaching materials and learning models using the concept of Bloom Taxonomy where this concept classifies educational goals in three domains, namely cognitive, affective and psychomotor.

Development is a stage after the development model format has been successfully designed in the previous stage. At this stage further development of the design has been carried out. Development includes processes and products. This stage is carried out in order to get the initial draft development model that will be used in the field trial. So for this second year researchers will conduct a model test with the step of validating the accounting learning model through the ADDIE model which includes the validation of the effectiveness, efficiency and attractiveness of the learning model which is done through lecturer and expert validation and conducting experimental research by comparing interactive learning models to the control class.

The next plan is to carry out advanced stages in the ADDIE model, namely at the implementation stage of the design and methods that have been developed in real situations, namely in the classroom. During implementation, the design of the model / method that has been developed is applied to the actual conditions. The material is delivered according to the new model / method developed. After applying the method then an initial evaluation is carried out to provide feedback on the application of the next model / method. Evaluation is carried out in two forms, namely formative and summative evaluation. Formative evaluation is carried out at the end of each face-to-face (weekly) while summative evaluation is carried out after the activity ends in its entirety (semester). Summative evaluation measures the final competency of the subject or learning objectives to be achieved.

The final step is the dissemination and dissemination or dissemination of information on accounting learning with the ADDIE model to improve the quality of the learning process at private universities in Medan City. In addition, it is intended that the results of this study can be utilized by various parties, especially providing solutions to solving problems related to learning in the campus so that the university as one of the institutions that prepares the workforce, is able to produce graduates as expected by the world of work and this is also one solution to overcome national unemployment problem.

Literature Review

For educators, understanding is far more important than achievement measured by test scores (Brook & Brook, 1993). The major problems facing the world of education at this time are still concerned with the problem of understanding and misconception (Brook & Brook, 1993).

The packaging of modules or physics teaching materials is still linear, namely: teaching material that only presents concepts and principles, examples of problems and solutions, and practice questions. For this reason, it is necessary to implement conceptual and contextual physics module packaging that integrates local wisdom and technology.

Integration of ICT in the world of education, especially with regard to modules assisted by interactive multimedia software program modules with problem-based learning strategies, bringing new revolutions and providing opportunities to achieve higher levels of understanding and learning outcomes (Duffy & Cunningham, 1996, Liu, 2005, William, et al, 1998).

The development of Internet technology has led to a variety of new applications, including applications for education. One of the benefits of Internet technology in the field of education is as a means of learning. Technology in the field of learning is known as e learning. The learning process that is usually done in class can be done via the internet remotely without having to face to face. Through this technology the teacher teaches in front of a computer that is in a place, while students take the lesson from other computers in different places at the same time or not together.

In the future e-learning technology can be an alternative solution and technology for use in learning methods. E-learning is a network that is able to improve quickly, store or re-emerge, distribute, share learning and information by using CD-ROM, internet technology, and intranet to achieve distance or broad-based learning goals (Clark and Mayer, 2003; Rosenberg, 2001).

In the implementation of electronic learning activities, the teacher is a very decisive factor and his skills to motivate students become crucial (Seok, 2008). Therefore, the teacher must be transparent in conveying information about all aspects of learning activities so that students can learn well to achieve good learning outcomes. The benefits of electronic learning according to Sims (2008) and Seok (2008) are (1) increasing the level of learning interaction between students and teachers, (2) enabling the interaction of learning from anywhere and at any time, (3) reaching students in a wide range, as well as (4) facilitate the improvement and storage of learning material. The elements used to build e-learning systems are grouped into three things, namely: (1) hardware (hardware), (2) software (software), and (3) HR in ICTs often called brainware (Clark and Mayer, 2003; Allen, 2002).

Hardware for advanced information systems requires minimum requirements (1) data communication capabilities, (2) channel capacity and similar fields (interfaces) for a series of high-speed input-output equipment, (3) online operating capabilities, (4) large storage and (5) very large secondary online storage.

Software includes system software and application software. System software is a set of programs whose function is to coordinate and control the use of hardware and as a vehicle to support the use of application software. Application software is an instruction written by or for users to be able to apply it to their respective fields of work, both technical and non-technical. Reviewing the software can do the software development process. This step is important because it is a way to continuously improve and develop software (Pressman, 1997).

In the Internet network system there are weaknesses that have the potential to hinder the smoothness of the system, namely the lack of system security. Hackers and other computer criminals can enter the computer network at any time.

There are three approaches to dealing with security issues, namely: (1) physically separating websites or homepages that are connected to internal networks that contain data and information resources, (2) providing passwords only to people who have interests, (3) building a wall of protection, as is done by building contractors who build fireproof walls in condominiums and apartments to prevent fire from spreading from one unit to another, which can be packet-filtering firewalls, circuit-level firewalls, and application-level firewalls (McLeod Jr., 2001).

Based on the description above, it can be concluded that the minimum requirements of software that meet the development of information technology include (1) system software and applications must be windows-based so that it is easy to operate, attractive appearance, compatibility with hardware, and data transfer speeds; (2) using a good security system; and (3) using web-based software for internet systems so that coverage is wider.

Besides hardware and software, in the development of e-learning it is necessary to pay attention to aspects of brain devices. Brainware is a human aspect that handles computerized processes. The human aspect is very important, because accurate or not information is strongly influenced by human factors that handle hardware and software. The main criteria that must be met in terms of human resources are data processing managers, systems analysis, programmers, database managers, network specialists and operators (McLeod, Jr., 2001). Therefore, schools need to strive to ensure the availability of brainware that meets the requirements of knowledge, skills, personality, attitude and behavior that are in line with the demands of all school components that must be served and supported.

Research Method

Using this type of development research (Research and Development). Research and Development is a research method used to produce certain products, and test the effectiveness of these products. Research and development products in the education sector can be in the form of models, media, equipment, books, modules, evaluation tools, and learning tools such as curriculum. This research was conducted at Private Universities in Medan City, especially economic faculties.

Primary data is obtained through the distribution of questionnaires or questionnaires given to respondents. The questionnaire in this study was used to collect data to measure the feasibility of teaching materials provided by material experts, lecturers and students as evaluation material for the developed teaching materials. The feasibility instrument used in this teaching material uses a Likert scale with four choices (four scale). To get an assessment of the feasibility of teaching materials the qualitative data was converted into quantitative data with scoring provisions, and then the data were analyzed using descriptive statistics.

Finding and Discussion

Feasibility of Developing Accounting Teaching Materials

The development of book teaching materials as learning media is adapted and modified from the steps of the ADDIE research and development model, namely by stages 1) Analysis, 2) Design, 3) Development, 4) Implementation, 5) Evaluation. The

results of the overall procedure for developing accounting teaching materials in detail can be seen in the description as follows:

At this stage researchers conducted questionnaire validation tests from media experts, material experts and student assessments. Based on his research, the results of the questionnaire were obtained as follows:

Table 1 Results of Media Expert Questionnaire

No	Statement	Score
	Material Quality	
1	There are no distorted indicators	4
2	Coverage of material content is good	4
3	The contents of the material presented are clear	4
4	Description of the contents of the material accordingly	4
5	Material is presented systematically	5
6	Sample questions are well presented	5
	Discussion Quality	
7	The language used is clear	5
8	The language used for the target matches	4
	Quality of Exercise Questions	
9	The problem is in accordance with the theory and concept	3
10	Practice questions / balanced material evaluation tests	3
11	Variations in the questions presented are complete	3
Total		44
Average		4,00
Category		Eligible

The quality of the media based on the table of eligibility criteria was obtained with a score of 44 with an average score of 4.00 so that it was included in the "Eligible" category. Furthermore, the material validation test obtained the results of the questionnaire as follows:

Table 2 Results of Expertise Questionnaire Material

No	Indicators	Score
	Content Compliance	
1	Conformity with learning objectives	4
2	Material in accordance with basic competencies	4
	Content Requirements	
3	The terms used are appropriate	4
4	The problem is in accordance with the theory and concept	4
5	Material is presented systematically	4
6	The language used is easy to understand	4
	Content Clarity	
7	Material presented clearly	4
8	Clear instructions for working on the question	4
9	The question given is clear	4
10	Discussion of clear answers	4
	Complete Content	
11	The material presented is complete	4

12	Variations in the questions presented are complete	3
	Fill Balance	
13	There is a balance of material & questions	4
14	The material presented attracts attention	3
15	The appearance presented attracts attention	4
Total		58
Average		3,87
Category		Eligible

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From the results of the evaluation of the material it is suggested that the learning indicators / objectives adjust to the operational words and cognitive aspects of C1-C6, the indicator editor of the questionnaire (questionnaire) should use positive sentences and clear and not invite questions. Provide advice on the material both from the questions, answer sheets, covers, summaries, and glossaries.

The quality of the material based on the results of the final assessment of material experts obtained the number of scores: 1) Expert Material 1: Score 58 with an average score of 3.87 so that it falls into the category of "Eligible", and Expert Material 2: Score 63 with an average score of 4, 20 so that it falls into the "Eligible" category.

Before testing the validity of media experts, the index is not in the teaching material. So that media experts advise to add indexes in teaching materials so that readers can more easily find the words they want to search. Therefore, after testing the validity of media experts, researchers added an index to the teaching material.

After validation by the media and material experts as well as improvements, distributing student assessment questionnaires to 29 Accounting students of the Faculty of Economics and Business can carry out the implementation phase.

At this stage an analysis of the data obtained from the results of the assessment / validation of the product feasibility by the student assessment. Based on the results of the final assessment of the student assessment, the score was 129.18 with an average score of 4.45 so that it was categorized as "Very Decent".

Feasibility of Teaching Materials for the Accounting Cycle Book

The feasibility of accounting book teaching materials as learning media is known through the student validation and assessment stages. By looking at the average score obtained, the results of the feasibility at each stage of the overall assessment can be seen from the following table:

Table 3 Assessments of Media Experts, Material Experts and Students

No	Assessment Phase	Total Score	Average	Eligibility
1	Media Expert Assessment	44	4,00	Eligible
2	Expert Assessment Material 1	58	3,87	Eligible
3	Expert Assessment Material 2	63	4,20	Eligible
4	Accounting Student Assessment		4,45	Very Eligible
Average			4,02	Layak

1

Based on the data above, it can be seen that the accounting cycle book teaching materials obtain the "Eligible" category for the assessment stage of media experts with an average score of 4.00, and for the stage 1 material expert with an average score of 3.87 with the category "Eligible", and for the stage 2 material expert with an

average score of 4.20 with the category "Eligible" for the student assessment stage as a whole, the average score was 4.45 which was in the "Very Eligible" category. So it can be concluded that the teaching materials for introductory accounting books (Basic Preparation of Financial Statements) are "Eligible" are used as learning media for students in improving the quality of learning.

Teaching materials from this study are teaching introductory accounting books (Basic Preparation of Financial Statements). This teaching material is a learning media that contains material, practice questions, answer sheets, summaries, glossaries and indices. The material is made in accordance with the basic competencies and subject matter in the syllabus. In addition, this teaching material is also presented interestingly by combining various colors to attract the attention of students.

Development of "Easy Accounting" learning media

The development of this "Easy Accounting" learning media is an adaptation and modified from the steps of the ADDIE research and development model. The implementation of the entire procedure for developing this research in detail can be seen in the description as follows:

1. Needs Analysis

Nutritional analysis is needed to determine ¹³ the problems faced by students in accounting learning. Based on the observations of the researchers by looking at the RPS used by the lecturer and based on the observation results in class that the lecturers have not used interesting learning media. Lecturers are still teaching in conventional ways, namely blackboards, markers and textbooks as media and learning resources. The development of learning methods used is also less innovative. Student learning activities tend to only listen to lecturers' explanations, record and work on questions. This will make students dependent on lecturers, making lecturers the only source of learning. And it is possible for students to get bored easily by learning like that every day.

2. Competency Analysis

Competency analysis is the analysis of competency standards; basic competencies to what course material will be used in this learning media. By looking at the syllabus and discussing with the lecturers the accounting subjects about the standard of competence and basic competencies that will be expected for students, then one of the basic competencies of Preparing the Process of Preparing a Special Journal.

3. Establish material

At this stage the basic material selection was presented regarding the process of preparing a special journal. This material was chosen because there were difficulties in understanding the material, especially during journaling. In addition, the lack of use of learning media and many teachers who use conventional methods or lectures in teaching accounting. The material contained in the application is explained briefly about the definition, purpose and grouping of special journals.

According to answer key media experts, it is locked or placed on a new bottom menu so students can see the answer key after completing the quiz but must be locked first. Because of the limited development to make the key on the new bottom menu, the researcher cannot make changes. For the answer key researchers have entered at the time of making the application where when clicking the submit button it will automatically come out the right or wrong answer.

4. Data Analysis Student assessments

At this stage an analysis of the data obtained during the implementation phase is conducted to find out the opinions / judgments of students on the feasibility of the media. The results of student opinions / assessments obtained an average overall score for class A with the number of students present 33 people at 4.31 which can be categorized as Very Decent, while in class B with the number of students present 32 people obtained an average overall score of 4.23 which can be categorized as Eligible.

5. Final Product

At this stage after validation and revision in the previous stage, the final product was obtained in the form of learning media "easy accounting".

Feasibility of Learning Media "Easy Accounting"

The feasibility of "Easy Accounting" as a learning media is known through the student validation and assessment stages. By looking at the average score obtained, the feasibility results obtained at each stage of the overall assessment can be seen from the following table:

Table 4 Feasibility of Media and Material

No	Assessment Phase	Total Score	Avreage	Eligibility
1.	Media Expert Assessment	63	4,50	Very Eligible
2.	Material Expert Assessment	63	4,20	Eligible
Average			4,35	Very Eligible

Table 5 Student Assessment

No	Assessment Phase	Total Score	Avreage	Eligibility
1.	Class A	2848	4,31	Very Eligible
2.	Class B	2537	4,23	Very Eligible
Average			4,27	Very Eligible

1 Based on the above table it can be seen that the Android-based "easy accounting" obtains a feasible category for the assessment phase of material experts with a mean score of 4.2 and for the assessment phase by media experts to obtain a very feasible category with a mean score of 4.50 and overall from both assessment stages what was done by Media Experts and Material Experts was obtained a mean score of 4.35 which was in the Very Eligible category. Then for the grade A student assessment results obtained a mean score of 4.31 which is in the Very Eligible category, from class B obtained a mean score of 4.23 which is in the Very Eligible category, overall the grades of grade A and B students obtained a mean score of 4.27 which is categorized as Very Eligible. So it can be concluded that "easy accounting" based on android "Eligible" is used as a learning accounting media for students.

Final Media Study

The final media of this research is "Easy Accounting" which is used for Android smartphones with Special Journal material. This application is a learning media that contains material and practice questions (Quiz). The material is made in accordance with the Competency Standards (SK) Understanding the Preparation of Trade Company Accounting Cycle and Basic Competencies (KD) preparing the process of preparing Special Journals.

This application is presented with an interesting one by combining blue and green as the main color. This "Easy Accounting" application has advantages and disadvantages as a learning medium. The advantages of this media include:

1. The Android-based "Easy Accounting" application is a new innovation of Android-based learning media that can increase student interest in learning.
2. The Android-based "Easy Accounting" application is a learning media that is presented in an Android smartphone that is more attractive and in accordance with the evolving technological progress.
3. The Android-based "Easy Accounting" application is easy to carry so it can be used anywhere and anytime.
4. The Android-based "Easy Accounting" application does not depend on internet usage, so it can be used offline without internet services

By looking at the responses or comments from students at the time of the implementation of the researchers found the shortcomings of this media were:

1. Material presented is limited to Special Journal Materials
2. The ease of use of the application relies heavily on smartphone RAM storage space and user proficiency.
3. There are ads / online advertisements that occasionally appear on the application
4. There is no animation because of the consideration of the memory that will be used
5. Quiz available only in the form of multiple choice

Conclusions and Recommendations

That the implementation of accounting learning with ADDIE models, with instructional materials, and interesting and interactive accounting learning media can improve the quality of accounting learning. Therefore the need for innovation that learns accounting through the ADDIE model to assist lecturers, in creating effective, efficient and interesting learning programs so that accounting-learning outcomes can improve. And can help the lecturers, in creating effective, efficient and interesting learning programs so that learning outcomes in the introductory accounting subject can be achieved. This can be seen from the feasibility test by experts on accounting learning media and media trials that have been conducted on students with the results showing that accounting learning media is very suitable for use because it can attract students' attention so as to facilitate understanding and increase student learning activities in the classroom. For this reason, there is a need to develop new learning media such as digital accounting learning or with the use of interesting applications so that students who are just learning accounting are easier to understand the material. And analyzing the feasibility and requirements for developing new learning models/methods. Lecturers need to create and implement effective, efficient and interesting learning programs so that students are easier to understand accounting material.

Acknowledgment

Thank you to the Directorate of Research and Community Service Directorate General of Research and Development Strengthening The Ministry of Research, Technology and Higher Education (DIKTI) which has funded this research is in accordance with the Research Contract Number: 318 / II.3-AU / UMSU-LP2M / C / 2018. Thanks are also addressed to the Institute of Research and Community Service of University of Muhammadiyah Sumatera Utara.

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