The Effect of Learning Media on Accounting Student's Achievement

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ABSTRACT: The purpose of this research is to develop digital book and to examine the effect of this book on student's achievement. This study uses a modified Borg & Gall (1983) design consists of needs analysis, planning and development of teaching materials, expert validation, revision, field trials to produce the final product, and dissemination of research. Research conducted on the university students in East Java who have taken accounting computer courses. Validation is done by a lecturer as a material expert and a lecturer as a learning media expert. After going through a series of validation experiments, a flipbook that is packaged in a compact disk will be disseminated to students and lecturers. Expert validation results show that this flipbook-based digital book has met the criteria of "very feasible" to be used as a learning medium and used in computer accounting course study.

1 INTRODUCTION

Information technology becomes an integral part of the teaching and learning process at university today (Bawaneh, 2011). This shows that the use of technology in the university is a must so that the support of facilities and infrastructure is very important. Lamanauskas, *et al.* (2011) states that one of the missions of educational institutions today is no longer focus on dissemination of information but how to create "perceivable" and "learnable" learning. Modern teaching and learning focusing on a digital-based learning is one of strategy used today.

Previous research has examined the influence of technology used in teaching and learning process on student achievement (Beglau, 2005; Phye & O'Connell, 2007; Martin, Strother & Reitzes, 2009; Shapley, Sheehan, Maloney & Caranikas-Walker, 2010). Research conducted by Tabor and Minch (2013) found that the higher access of students to digital media influenced the way of students in attending lectures and taking exams. This research suggests that the use of digital-based teaching materials is preferred than traditional teaching materials. The results suggest that the use of digital media is integrated into the curriculum. Furthermore, Irafahmi and Andayani (2012) conducted the development of computer-based teaching materials for vocational school. This research was conducted by

developing Borg and Gall (1983) model to produce Accounting teaching materials relevant to the needs of business practice. The results showed that the use of computer-based teaching materials proved more successful in improving student achievement compared with conventional methods. This is also confirmed by Lamanauskas, *et al.* (2011) that digital teaching and learning is one way to improve the educational process.

The phenomenon that occurs among teenagers in Indonesia today is the trend of reading a digital book. In fact, in developing countries especially Indonesia, reading habit is still very low when compared with developed countries. In developed countries, reading has become a habit and people already have a high awareness about the importance of reading as a window of world information. Indirectly, this may indicate that the quality of human resources in developing countries is still very low. Observations in the class found that students have not read the lecture material and did not bring the literature. As a result, students just waiting for an explanation from the lecturer. It is caused by the price of the book is relatively expensive and some students are lazy to bring the books. It is undeniable that the existing teaching materials for Accounting Computer courses are now mostly printed textbooks.

With this phenomenon, lecturers are required to be always creative and innovative to create

a fun learning activities by integrating ICT in learning so that students will be more motivated to learn. The development of digital books can be a solution for a lecturer to stimulate students to learn. The digital book in Indonesia has developed quite rapidly. This is based on the content and appearance of digital book more interesting and interactive enough so that students are more motivated to use digital books compared with printed book. The purpose of this research is developing digital-based teaching materials that is packaged in the form of a flipbook and to examine this ebook on student's achievement. The results of this research are e-books for accounting computer courses where the books are packaged in digital form more attractive, more practical, more economical, and easy to carry everywhere because this digital book can be read on mobile phones, tabs, laptops and other devices.

2 REVIEW OF RELATED LITERATURE

2.1 ICT-Based Teaching Materials

Teaching materials are all forms of materials that can be used by lecturers / teachers to help the process of learning activities. The teaching materials consist of printed materials, audio visual, audio, visual and multi media such as interactive CD, computer based and internet. According to the Ministry of National Education that ICT-based teaching materials are instructional materials that are developed using ICT tools to process, organize, store and manipulate data to obtain quality data. The advantages of ICT-based teaching materials are as follows:

1. Provide convenience for educators to explain things that are abstract
2. Changes in the role of learners from the normally passive to be active and have an interest in the material being discussed
3. Learners can learn at any time because the teaching materials stored on the computer
4. Educators and learners can use instructional materials and learning instructions in a more structured and scheduled through the Internet network
5. Availability of e-moderating facilities where educators and learners can communicate easily anytime without being limited by distance, place and time.

2.2 Digital Book Excellence Compared to Printed Books

E-book (digital book) is a publication consisting of text, picture, and sound and published in digital form which can be read on computer, HP, tablet or other electronic device. A digital book is usually an electronic version of a printed book, but not infrequently a book is only published in digital form without a printed version. The format of digital books varies, ranging from formats supported by large companies (PDF by adobe, swf by flash, doc by Word) and various other formats supported by certain devices and digital book readers. In 1990 there was also developed an open e-book format that allows publishers and software developers to use one format that can be read on any device and using various digital book reader software ([http // hartz.wordpress.com](http://hartz.wordpress.com))

Epub (electronic publication) is one of the digital book format which is a standard form format introduced by International Digital Publishing Forum (IDPF) in October 2011. Epub replaces Open eBook role as an open book format. Epub consists of multimedia files, html5, css, xhtml, xml which are made into one file with extension .epub. The epub format is one of the most popular digital book formats today, as a format that does not refer to any particular developer, making this format readable on various devices ([http // hartz.wordpress.com](http://hartz.wordpress.com)).

3 METHODOLOGY

This research is to develop digital book and to examine the effect of this book on student's achievement. This study uses Borg & Gall (1983) design which includes the following stages: research and data collection, planning, development, field trials, revision I, field trials, revision II, field tests, dissemination and implementation. The modification of research designed by Borg & Gall (1983) into 7 stages are needs analysis, planning and development of teaching materials, expert validation, revision, field trials, and dissemination. This research was conducted at State University of East Java which amounted to 8 universities. Universities who do not have accounting majors are not included in this study. Sampling method using purposive sampling.

4 RESULT AND DISCUSSION

4.1 Content Analysis of Syllabus and Learning Practice for Computer Accounting Course

Accounting Computer Courses presented in 3 SKS aims to provide students in preparing financial reports service companies, trade and manufacturing using MYOB software. MYOB (Mind Your Own

Businnes) is a computer software data processing in accounting by recording data transactions into the computer, then the computer will process into financial statements. This application program is used as an automated bookkeeping application that is easy and accurate. The observations made by researchers at college X coincide with the initial meeting of lectures for accounting computer courses. The first meetings are used by lecturers to explain lecture contracts based on Computer accounting syllabus. In the lecture contract (explanation of the syllabus), it appears that the accounting computer course with a load of 3 credits has a goal to provide understanding to students in making financial statements services company, trade and manufacturing using computer and MYOB software. The syllabus of accounting computer course used in organizing and guiding lecturers during one semester is also explained about teaching materials and teaching methods. The teaching materials used are textbooks and learning media used only LCD and laptop. It doesn't in line with the aim of KKNi which requires students to be able used technology.

Further observation on the learning practice of Computer Accounting course and syllabus content analysis resulted some findings, namely; 1) expected competence can be achieved from this course that students can arrange data file company and make financial report for service company, trade and manufacture with program of MYOB version 18 based on transaction / case prepared by lecturer; 2) the reference used by most universities in this course are textbooks or modules because the learning is teacher centered where the active lecturer explains and the students just listen, record and practice the explanation of the lecturer; 3) Lecturers do not recommend digital media (e-book / flipbook / audio visual) as the main reference and supplement for this course because they do not have the ability in the field of IT; 4) teaching methods used by lecturers are demonstrations in the accounting laboratory room. This is an implication of the lack of competence of lecturers in the field of IT that impact on the methods used by lecturers are still conventional; 5) there is a college that uses a module system. The use of modules is more appropriate because computer accounting courses are very technical and procedural; 6) Practice and simulation of the preparation of financial statements for service companies, trade and manufacturing using computers have the highest component in learning;

Based on the observations and the analysis of the syllabus, it appears that lecturers still use conventional teaching methods and did not use ICT-based

learning media whereas the competence of graduates for the mastery of information technology is mandated in the KKNi, the degree program under the sixth level of qualification must be able to apply, study, design, utilize science and technology and solve problems. Based on the KKNi it appears that one of the competencies of college graduates is the ability to utilize science and technology. Therefore, learning in higher education should be directed to ICT-based learning so that the learning process is student centered to foster an active learning atmosphere.

Given these findings, the recommendation of teaching materials in accordance with the conditions in the field are as follows: 1) teaching materials include accounting cycles for service companies, trade and manufacturing; 2) teaching materials prepared by applying MYOB software version 18; 3) teaching materials with examples of transaction cycle work for both service, trading and manufacturing companies using MYOB or tutorial based; 4) teaching material packed in the form of video / audio visual; 5) teaching materials as well as video / audio visuals are packaged in the form of e-books as an alternative solution because printed materials are expensive / less affordable by students and less attractive; 6) teaching materials that have been packaged in the form of an e-book converted into a flipbook because of more attractive appearance that is accompanied by animation.

4.2. User Characteristics and Preferred Materials

User characteristic of teaching materials is one of the factors that need to be considered when developing teaching materials / textbooks. Characteristics of user include gender, age, learning style, and teaching materials. The results showed that the majority of respondents are women as much as 72 respondents (81.8%) while men as many as 16 (18.2%). Data of respondents can be seen in table 5.1 as follows.

Table 1. Gender

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Woman	72	81.8	81.8	81.8
Man	16	18.2	18.2	100.0
Total	88	100	100.0	

The average age of students who follow accounting computer course is between 20-21 years that can be categorized as a teenager. The questionnaire results show that the average student prefers digital-based teaching materials compared to printed materials because it is more practical, cheaper, and

more interesting. The learning style of the majority students is the learning style of audio visual learning style that not only learn through visual relationship (sight) but also using audio (hearing) as a way to achieve maximum learning result. With this type of learning style it will be very suitable if the teaching materials used in the lectures are teaching materials that are tailored to the learning style of students so that the quality of student learning will increase.

Teaching materials desired by students is also one of the factors to consider. The result of data analysis shows that only 1% use more than one textbook, 17% have one book reference, 16% use two books and 66% most do not even have textbook in following Accounting Computer course. This shows that the students lack the preparation in following the Computer Accounting lecture. Furthermore, the average length of student study is less than one hour for Accounting Computer course which is 48% while only about 13% are studying over two hours. This can be caused by the lack of teaching materials that are owned by students so that students are lazy to search or browse the internet about the subject matter computer accounting so that it affects the intensity of student learning.

The lack of textbooks as well as the limited time of students to study accounting computer courses cause the difficulties of students to study this course. This is evident from the results of the questionnaire analysis that says that 89% of students have difficulty in lectures for accounting computer courses, 9% rare and 2% said never had trouble. This can be suspected because the absence of materials / textbooks owned by students because the lecturer does not provide reference or teaching materials / textbooks printed and digital versions of the students so that students only get the material from the explanation from lecture only in the class. In addition, the results of the study also showed that the learning resources used by the students of 47% said that the students studied Accounting Computer courses from books they borrowed from the library because the lecturers did not provide certain teaching materials, as much as 40% of students browsing the internet to find the material as well as complete The tasks given by the lecturer, by 11% of students read the ebook obtained from browsing on the internet and the remaining 2% reading other literature. Based on this data can be concluded that the teaching materials, especially ebook that is used as teaching materials by lecturers is still very low. So it is necessary to develop digital-based teaching materials to help simplify students in

learning because students can study anywhere and anytime with ebook.

Students have the perception that digital-based teaching materials are very important to them. It is proven that 72% majority of students said that the existence of the ebook is important for students to help students learn because lecturers do not give textbooks, especially digital-based textbooks. The existence of digital books can facilitate student learning because of its ease of carrying anywhere and can be read anytime by the students because digital books can be stored and opened on the phone. The availability of facilities and infrastructure to support the use of digital teaching materials (flipbook) is very important because digital teaching materials can only be used with the computer / hand-phone and 83% of students say have a computer while the remaining 13% have laptops and computers at home.

4.3 Development of teaching materials

Development of teaching materials is the stage of making the product after the needs analysis. In the requirement analysis phase, product specifications will be developed based on the results of syllabus analysis, observation of learning practices, characteristics of users who will use the product, and product characteristics desired by the user. This development stage is the stage to develop the product that is based on flipbook. There are several stages in the development of textbooks based on this flipbook are: developing teaching materials for Accounting Computer course on the subject of service companies and trading companies using MYOB version 18 which will produce textbooks print version, creating tutorial videos for service companies and trading companies, creating animation as a supplement in tutorial and flipbook video, converting printed material / textbook into digital version and textbooks that have been converted in the form of flipbook and then validated by 2 people validator.

4.4 Expert Validation

After the process of developing a flipbook, the next step is the validation of experts to get advice and feedback about the product developed. The first validator is one accounting lecturer to validate the material content. The goal is to ensure that the material created in this flipbook has been in line with the competencies of the Accounting Computer course and the material presented is also valid. Overall ma-

terial validation results show that the material presented in a digital book (flipbook) is well suited to the competence of accounting computer courses, which can be described as follows. (1) The range of teaching material (content and case presented) fits perfectly with the competency of the computer course accounting. The expected competence of this course is that students are able to prepare financial statements for service and trading companies using MYOB version 18; (2) completeness and ease of teaching materials to be understood is appropriate. This means that all material content that should be presented in the instructional material is complete and the language used is easily understood by the students; (3) the material presented is also systematic and logical. This shows that the presentation of the material in the flipbook is coherent and the plot is clear; (4) the case presented is complete; that is the case for service companies and trading companies; (5) the level of difficulty of cases presented in appropriate teaching materials, which means that the cases given are able to cultivate students' critical thinking, (6) the instruction of case work is also appropriate, meaning that the instructions in the case work have been clearly described and no ambiguity.

The second validator is a media expert who aims to provide advice and input to the learning media that has been developed. Validation of textbooks based on flipbook is validated by a lecturer who is expert in learning media. Validation results show that this flipbook has several advantages, namely (1) the use of flipbook packaged in the form of CD is very easy to use. Students and lecturers can easily copy and use flipbook. This media can be opened and operated by using media player, flash or GOM player; (2) flipbook operation is also very easy because the choice of simple navigation buttons that make it easier for students and lecturers in using this flipbook; (3) flipbook display is very interesting because it is equipped with video and animation tailored to the subject of service and trade companies so that students not only read the material but students can also see examples of video tutorials in completing the accounting cycle for service and trade companies. With this flipbook is expected to make it easier for students to understand the material and improve students' motivation to learn the students.

Different tests (t-test) were used to analyze whether two related samples were related to different mean values. The results of the analysis can be seen in table 2 below:

Table 2. Pretest Posttest Result

	N	Mean	Std. Deviation
Pretest	74	56.6	24,83
Posttest	74	81.0	24,7

Table 2 shows a summary of pretest and posttest data of all students. The number of students who followed the pretest and posttest of 74 students. The average pretest student score is 56.6 while the average posttest score is 81.0. In absolute terms it is clear that the average pretest and posttest score of students is different, to see if this difference is indeed statistically significant then it should look at the output of the next section. Table 3 shows the result of paired sample t-test.

Table 3. Paired Sample t-test

	Mean	SD	t	Sig
Pretest-Posttest	2.43919	27.59731	-7.603	0.000

In the second analysis result, the paired sample t-test shows a significance value of 0.000 is smaller than the value of 0.05 then the hypothesis stating that there is a difference between before and after using the flipbook received. In other words that, the use of flipbook in Accounting Computer course that uses MYOB software proved to influence student learning outcomes. To see the broader result how the pretest posttest student achievement in Accounting Computer course, can be seen on line chart below:

Chart 1. Result after Using Flipbook

From the graph above, it can be seen that students' learning outcomes about service and trading companies are better when using flipbook with pretest-based pretest value of 56.6 and posttest average of 81.0. This shows that students more easily understand the difficult concepts related to the learning process in Accounting Computer course by using flipbook. In the learning process lecturers only function as mediators and facilitators who provide facilities and supporting situations while students are re-

quired to find the concept and develop it themselves so that knowledge obtained more meaningful. This result is supported also from the results of the student questionnaire that 72% majority of students said that the existence of the ebook is important for students to help students learn because lecturers do not give textbooks, especially textbooks based on digital. The existence of digital books can facilitate student learning because of its ease of carrying anywhere and can be read anytime by students because digital books can be stored and opened in mobile phones. Based on the above description, it can be said that learning by using flipbook based learning media is more effective than conventional learning in Computer Accounting courses.

5 CONCLUSION AND SUGGESTION

This study aims to develop a flipbook-based digital book using Borg and Gall (1983). The results of requirement analysis indicate that students have difficulties in studying Accounting Computer courses because of the absence of teaching materials given or recommended by lecturers. Students only obtain material from the explanation of lecturers in class. Difficulties of students in obtaining this teaching materials impact on the level of student laziness in learning. In addition, the results of the needs analysis also shows that the teaching materials Computer Accounting borrowed in the majority library is still print-based so that students want a digital-based textbook because of its ease that can be taken anywhere and read anytime because digital books can be stored and opened in mobile phones. In general, the results of expert validation indicate that the flipbook-based digital book is very feasible to be used as media and teaching materials on accounting computer courses.

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