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Research Paper

Development of Innovative Audiobooks to Optimize E-learning

Azmi Fitriati[1*], Annisa Ilma Hartikasari[2], Tiara Pandansari[3], Rezky Pramurinda[4], Ilham Nuryana[5]

[1*, 2, 3, 4, 5] Universitas Muhammadiyah Purwokerto, INDONESIA

ABSTRACT

E-learning requires innovative teaching materials to improve the quality of learning. But currently, e-learning cannot increase motivation and learning outcomes. Materials and media should adapt to the learning needs of e-learning. This study aimed to develop and test the effectiveness of innovative audiobooks for practical computers. The research method used is research and development. The stages of this model are analysis, design, development, implementation, and evaluation. Instruments used are interviews, observation, validation, questionnaires, and tests. Then, descriptive statistical analysis was used. The research subjects are lecturers and students. The number of respondents was as many as 115 people. The results of the analysis showed that the use of audiobooks could improve students' understanding and skills. Audiobook is an alternative e-learning media. Audiobooks have been designed in a flexible and user-friendly. Audiobooks are equipped with learning sounds and videos that users need. So that users can understand and practice it independently. Users can easily learn and operate it. Based on the evaluation results, it is known that the user has perceived usefulness and ease of use. Users feel satisfied and have a positive attitude. This attitude will foster interest in and actual use of audiobooks. Furthermore, innovative digital books can be developed for other subjects. Students can use flexible audiobooks be outonomous to improve their understanding and skills.

Keywords: e-learning, audiobook, innovative digital book, usefulness, ease of use

INTRODUCTION

The coronavirus pandemic has caused changes in all fields, including education. Learning methods were changed from offline to online to avoid the transmission of covid-19 [1]. This kind has an impact on changes in the use of technology in learning. Lecturers and students must adapt to various applications and online learning platforms to conduct quality learning [2], [3], [4]. Online learning requires innovative teaching materials [5] to increase interest in learning and the quality of learning [6], [7], [8].

Stated that the ease of online learning was only 59.21% [9]. The provision of ineffective materials causes it. Not all respondents have hardware, stable internet signal, and can use online learning applications optimally. Also found that more than 80% of respondents stated online learning could not increase enthusiasm, motivation, and learning outcomes [10]. They find it difficult to implement online learning. It is because teaching materials and media are not adapted to online learning methods [11].

The teaching media used in general still use printed books, digital books (pdf), and power points. The teaching media are quite effective in offline learning. However, online learning requires adjusting strategies and tools to support its implementation [12]. Innovative digital books are an alternative media for effective, efficient, and flexible online

learning [13], [14]. Digital books have several search features, which make it easier to find the required word [15]. Digital books can be accessed and read through personal computers or other gadgets [16]. So, that innovative digital books are designed to be used for self-study repeatedly, anytime, and anywhere. The development of innovative digital books is expected to be a media that can improve the quality of online and offline learning.

This study aims to develop and test the effectiveness of innovative audiobooks for computer practice. This Novelty is an innovative audiobook. The audiobook contains practical computer tutorials with sound and learning videos that can access via a quick response (QR) code or link. Audiobooks can also be printed according to user requirements. Sounds and learning videos can be accessed via the youtube link. It is hoped that audiobooks can help improve students' knowledge and skills, especially practice-based ones. Can obtain knowledge and skills through explanatory videos and tutorials that can be practiced independently by all students. Audiobooks can also be accessed using multiple devices.

MATERIAL AND METHODS

The research aims to produce an innovative audiobook of computer practice tutorials. In addition, this study will test the effectiveness of the audiobook. The research method used is RnD (Research and Development). Using the ADDIE development model. This model consists of five stages, namely analysis (A), design (D), development (D), implementation (I), and evaluation (E).

The first stage of the research is to analyze the need for innovative digital books for offline and online learning. UMP uses onclass as an online learning platform. Lectures are done live via the big blue button or zoom. However, it is often interrupted because the connection network is unstable, the bandwidth is too large, and the camera does not support other obstacles, so lecturers and students cannot interact intensively.

The teaching media used are not designed interactively and are difficult to understand independently. So, it takes media that can use in offline and online learning. The media is an interactive and innovative audiobook. The next stage is to design and develop an innovative digital book. The innovative digital books will become teaching media for offline and online learning.

The hardware and software needed in developing this audiobook include an Intel i3 laptop, 8 GB RAM, Windows 7 Enterprise Edition x64 OS, Snowfox android video converter pro, a professional converter, and Android SDK. Supporting software includes JAWS, Kvisoft Flip Book Maker, Macromedia Flash Professional 8, and Nata Ebook Compiler Gold. Research designs the content, features, and services that users need. An audiobook is a recorded text of a book or written oral in audio form that can be listened to by the audience with the same content as when they read a book. Audio media is an alternative source of learning that is cheap, easy to reach, easy to duplicate and the order of presentation is fixed and definite. This media can serve as an instructional book for self-study. Use and distribution of audiobooks through broadcast technology (radio broadcasts), online technology (LAN, internet), and offline technology (hard drives, flash drives, etc.). It can enjoy audiobook through tape recorders, car tapes, tablets, PCs, laptops, cell phones, or other media. Audiobooks use quick response (QR) code that contains videos and

powerpoints.

The last stage is implementation and evaluation. Before implementing the innovative digital book, a team of experts validated the materials and techniques of use. Implementation through the trial phase of innovative digital books to users (lecturers and students). Next, evaluate the effectiveness of using audiobooks. It can be identified indicators of the effectiveness of this program can be identified by evaluating: practicality, usability, convenience, affordability, and learning independence using audiobooks. The evaluation uses a questionnaire instrument developed by [17], [18].

Collecting data using interview instruments, observation, validation, questionnaires, and tests. Interviews and observations were conducted to collect data for analysis of user needs. The questionnaire was distributed via a google form link. It is open and close-ended questions. Experts validated audiobooks in learning media and digitization techniques. The data analysis technique used descriptive statistical analysis. The research was conducted at the Faculty of Economics and Business, Universitas Muhammadiyah Purwokerto. The research subjects are lecturers and students. The number of respondents who became research subjects were 115 peoples.

RESULTS AND DISCUSSION

Respondents in this study were students of FEB Universitas Muhammadiyah Purwokerto who used audiobooks. The number of respondents was 115 students. The results of these responses indicate that most of the respondents' gender is females (83.5%), and the rest are males. They have frequently used e-books (60.4%). Most students have used e-books as their referral source. They have felt enjoyment and ease in using e-books [19], [20]. Students choose to use e-books because of their familiarity, usability, utility, and attractiveness; they are very efficient and recommended [21]. The results of the ADDIE development model are as follows:

Needs Analysis

Before the covid-19 pandemic, FEB UMP conducted offline learning. Offline learning (including computer practice) carries out the learning process and practice that the lecturer in the classroom guides. The teaching media use printed books, exercise books, and PowerPoint. In offline learning, students interactively receive explanations and practice them. Students can also ask questions or ask for clarification when they don't understand or have problems.

The Covid-19 pandemic has led to interactions between humans through social distancing. Lessons were prepared using online learning methods. The sudden change in learning methods causes lecturers to prepare teaching media that support it. UMP has facilitated the use of on-class applications as an online learning platform. The learning process is done live via the big blue button or zoom. Online learning often has problems due to no connection, unstable network connection, insufficient bandwidth, and unsupported cameras. So, lecturers and students cannot interact intensively.

The teaching media used are also still based on offline learning. Teaching media are not designed for students to be able to study independently. Students find learning and understanding concepts and practices difficult through these media. Therefore, digital

books are needed to make it easier for them to understand these concepts. Digital books are equipped with designed learning audio and video (audiobooks) innovatively. Students can access audiobooks with computers, tablets, smartphones, or text players. With the audiobook, students can access and use learning media repeatedly without being limited by time and place.

Audiobook Design and Development

Computer practice audiobook prototype using Canva. Canva is a web-based platform that can use to create e-books with attractive designs. Canva has advantages such as various templates and font designs, which can integrate with photos, videos, PowerPoint, and sound. Content access can be via Google Drive, Dropbox, or YouTube.

Canva-based audiobooks can be shared via Google Classroom, Microsoft Teams, or the LMS (Learning Management System) platform. The computer practice audiobook has been designed and equipped innovatively with computer practice tutorials in the form of learning audio and video. Audiobooks can be downloaded and printed if users need them. Videos can also be downloaded via youtube and stored separately. So, the audiobook can be used when there is no internet network. The design allows users to use audiobooks as learning media independently and repeatedly until they understand it. The pre-developed computer practice e-book (excel-based accounting), which has been used so far, is presented in Figure 1.
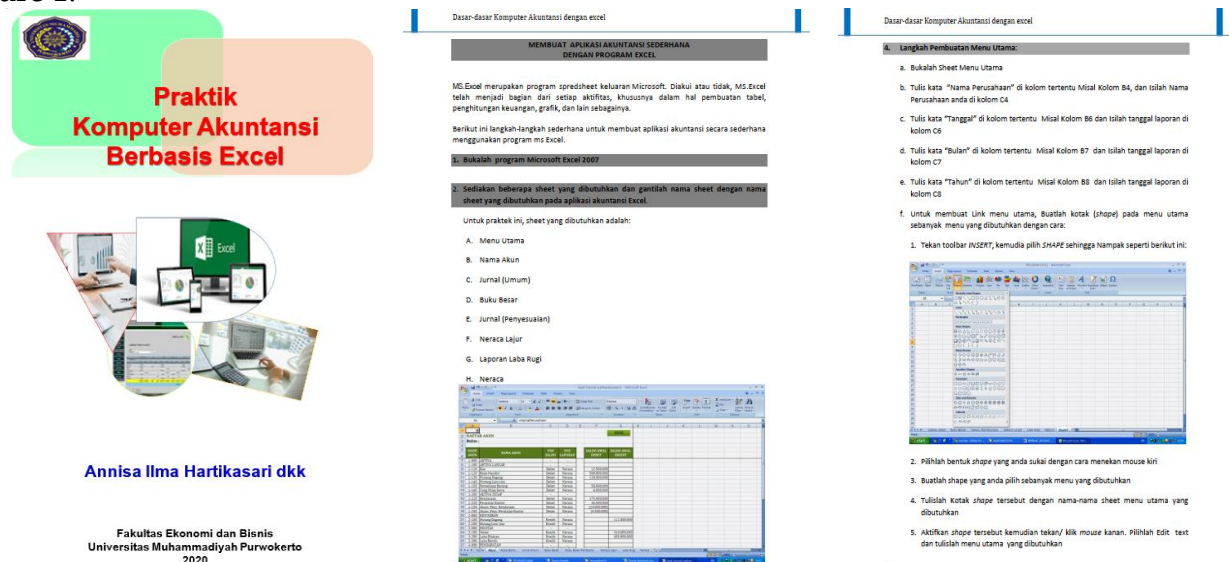
Figure 1. The pre-developed computer practice module (excel-based accounting)

Figure 1 shows the e-book before it was developed. Ebook is a computer practice book. This book is available in print and digital form in pdf format. In offline-based learning in a computer laboratory, this practice book is quite effective because it contains instructions that have been structured with a clear flow.

However, students often do not understand the instructions because they use computer terms. In offline learning, students can interact directly with the lecturer, ask for details, or practice on their computers. In online learning, the interaction between students and lecturers is not optimal.

Based on these conditions, designing an innovative computer practice audiobook is necessary. Audiobooks are designed using Canva with added learning audio and videos. The learning video contains descriptions and tutorials on computer practices that make it easier for users. Audiobooks can be accessed via smartphones, laptops, and other gadgets to make it easier for users. The audiobook is also equipped with a user guide. Audiobook design as in Figure 2.
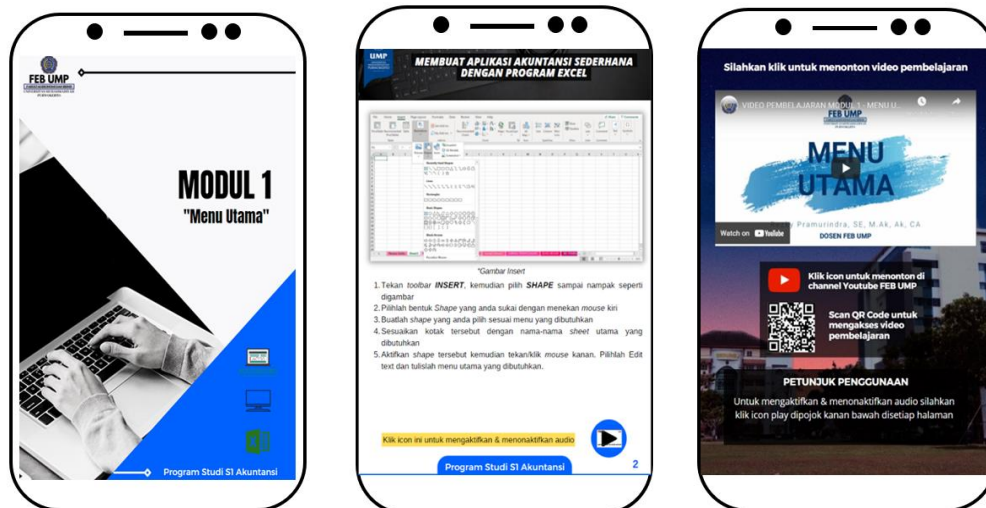

Figure 2. Computer practice audiobook

Figure 2 shows the computer practice audiobook is an e-book containing tutorial modules for preparing excel-based computerized financial reports. The audiobook consists of the main menu module, account name, auxiliary code, general journal, general ledger, subsidiary ledger, worksheet, income statement, and statement of financial position. Modules are presented in text, audio, and video formats.

The advantages of this innovative audiobook are (1) the audiobook uses the Canva design, which has a variety of template designs and fonts; (2) audiobooks integrate modules with learning videos and sounds that can be used repeatedly so that it is easier for students to learn and practice them independently; (3) audiobooks can be in print or digital form, according to user requirements; and (4) audiobooks can be accessed via google drive, dropbox or youtube. Can be share canva-based audiobooks via Google Classroom, Microsoft Teams, or the LMS (Learning Management System) platform.

Audiobook Implementation and Evaluation

A competent team of experts has validated audiobook. The validation includes content and technical validation. Team of experts from the fields of accounting and informatics engineering. Content validation assessment indicators are learning outcomes, cognitive development, and technology.

Audiobooks are easy-to-learn media for preparing excel-based financial reports. Students can solve accounting problems based on logical thinking and are innovative and responsible for the results independently. Students can also use information technology in accounting processes and operate spreadsheet application software, data processing applications (DBMS), and general accounting applications. Audiobooks are designed in a clear, effective, and easy-to-understand format. Audiobooks provide information through

text or images, multimedia, and other illustrations. The audiobook is implemented as an excel-based accounting computer application practice module. Audiobooks are used by accounting undergraduate students in even semesters according to the schedule.

The evaluation of the successful use of computer practice audiobooks is the evaluation of the effectiveness of using audiobooks. These evaluations include practicality, usability, convenience, affordability, and learning independence. The audiobook is designed using Canva, which can be accessed via gadgets and printed in a pdf version. Audiobooks are also integrated with learning audio and videos that can access via a QR code or a youtube link. Audio and video provide practical computer tutorials that make it easy for students to try independently and repeatedly. Evaluation of user satisfaction on practicality, usability, convenience, affordability, and independence of learning using an instrument developed by [17], [18], which was also adopted by [22]. Students and lecturers filled out the questionnaire as audiobook users.

The results of the description analysis explain that most students and lecturers (84.4%) perceive that audiobooks provide usefulness and ease of use. Students (92,2%) feel that the audiobook is easy to understand and can help them understand the material and improve their skills in preparing financial reports using the excel application. The effectiveness of audio and video supports independent practical learning. Innovative audiobooks provide text, audio, and video lessons. Audiobooks support student-centered learning strategies in being responsible for their learning process.

The technical assessment indicators include technically easy-to-use audiobooks that can access anytime and anywhere. The sound quality and the videos are high resolutions, so they can be heard and followed easily. Audiobooks have removed the limitations of previously used print modules. Audiobooks can be an alternative teaching media for offline and online learning. They have a high usability perception of the use of the application. According to their perception, using innovative audiobooks makes learning computer practice more effective. They also feel the ease of use because it is very easy to operate and can be accessed anywhere and anytime. This result is in-line with [15], [20].

Overall, they feel satisfied and sure will always use it. Students will also recommend that other students use the audiobook to learn and practice excel-based financial report preparation. Stated that innovative digital books, like audiobooks, are an alternative media for effective, efficient, and flexible online learning [13], [14]. However, some suggestions and improvements include audiobooks that should be more interactive and have discussion or question and answer features. The features are made more interesting and fun so that they can learn effectively [16], [5], [15]. Satisfactory features and services cause users to feel happy to learn and not get bored [6], [7], [8].

CONCLUSIONS

Innovative audiobooks are an alternative to using teaching media in offline and online learning. The Excel-based accounting practice audiobook that has been developed can be used as a computer practice module. This audiobook is an e-book containing tutorial modules for excel applications to compile financial reports. The tutorial module consists of the main menu module, account name, auxiliary code, general journal, general ledger,

subsidiary ledger, worksheet, income statement, and statement of financial position.

Audiobooks use text, audio, and video learning formats that users need. The use of audiobooks can improve students' understanding and skills. Audiobooks have been designed flexibly and user-friendly so that users can understand and practice them independently. Users can easily learn and operate it. Based on the evaluation results, it is known that users have felt the usefulness and ease of using it. Users feel satisfied and have a positive attitude. This attitude will foster interest in and actual use of audiobooks. Users provide suggestions and improvements for audiobook development. Audiobook added a more interactive discussion feature. Interesting and fun features will cause them to learn effectively, happily, and not boring.

Overall, they feel satisfied and sure will always use a similar e-book. It will also recommend that others use the audiobook to learn and practice excel-based financial report preparation. Furthermore, innovative digital books can be developed for other subjects. Flexible audiobooks can be used for offline and online learning so that students can independently improve their understanding and skills.

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