Design E-Book as an Online Learning Instruction for Teacher

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Abstract

Technology adaptation is not an easy thing for teachers to do with various tasks and high-performance demands. This research aims to develop an e-book for teachers that has the characteristics of being easy to operate and distribute to various media or platforms, contains many files with content, and is supported by video tutorials. The method used is the ADDIE R&D model, with stages namely analysis, design, development, implementation, and evaluation. The subjects in this study amounted to 30 teachers. The results of this study showed a good response to the e-book in the aspects of interest and benefits, with an average value of 4.18. This means that the e-book developed is considered feasible by teachers to be used as a guide in preparing digital learning media and managing online learning.

Keywords: *Adapting Technology, Designing E-books, Research and Development, The ADDIE Method.*

Desain E-book sebagai Instruksi Pembelajaran Online untuk Guru

Abstrak

Adaptasi teknologi bukanlah hal yang mudah dilakukan guru dengan berbagai tugas dan tuntutan kinerja tinggi. Penelitian ini bertujuan untuk mengembangkan e-book untuk guru yang memiliki karakteristik mudah dioperasikan dan didistribusikan ke berbagai media atau platform serta memuat banyak file dengan konten dan didukung dengan video tutorial. Metode yang digunakan adalah model RnD ADDIE dengan tahapan yaitu Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi. Subyek dalam penelitian ini berjumlah 30 orang guru. Hasil penelitian ini menunjukan respon baik terhadap e-book pada aspek minat dan manfaat dengan nilai rata-rata 4,18. Artinya e-book yang dikembangkan dianggap layak oleh guru untuk dijadikan pedoman dalam penyusunan media pembelajaran digital dan mengelola pembelajaran online

Kata Kunci: adaptasi teknologi, desain e-book, Model ADDIE , R&D

INTRODUCTION

The rapid development of technology in the 21st century has had a tremendous impact on the education sector. Various elements of education adapt to be able to follow and implement changes that occur as a commitment to realizing quality education. Adaptations made to elements of education include changes in the educational paradigm that occur in schools. Changes in 21st-century education include that students no longer learn to only focus on printed books but also by using technological devices, analysis of information is not only limited to printed media using pen and paper but also utilizes a variety of multimedia devices, students no longer write ideas only using a pencil, pen, paper, or typewriter but also being able to use multimedia technology devices, the learning objectives are not only mastery of knowledge content but also mastery of skills (accessing, analyzing, evaluating, and participating **(Ginting et al., 2021)**, **(Bayley, 2022)**.

Seeing these changes, many things may be shifted or abandoned by students, such as printed books, pencils, pens, and paper, and will be replaced with digital technology whose renewal will not stop from time to time. The The presence of the teacher directly in the learning room began to lose its meaning and was replaced with interesting and interactive videos **(Lepp et al., 2021)**. This condition is certainly a challenge of globalization for teachers to remain the most important part of students who cannot be replaced by technological sophistication. Being a top priority for students is certainly not easy for teachers, besides having good scientific and communication skills, teachers must also be technology literate. According to **(Darmadi, 2018)**, teachers must be able to adapt responsively, wisely, and wisely which means that teachers must be able to master science and technology products such as learning using multimedia. 21st-century professional teachers must have the ability to prepare methods, strategies, and learning models and be able to use technology and information media in the learning process **(Novita Sonia, 2019)**. Please use APA referencing style for citation. Kindly check all of your citations here.

Technology adaptation or responsive adjustment is not an easy thing for teachers to do with various tasks and high-performance demands. The fact is that teachers have difficulty keeping up with the development of digital technology due to the lack of facilities and lack of information. This is what the teachers of MAS Nurul Islam Air Bakoman Tanggamus face in facing the challenges of 21st-century learning. Teachers have difficulty keeping up with the rapid development of technology, especially in the provision of digital-based learning media. It is undeniable that nowadays students prefer everything digital-based, especially learning media **(Kamil & Hayati, 2023)**. Students are no longer interested in conventional learning media such as printed books that only contain text **(Singer & Alexander, 2017)**. Therefore, teachers need a means in the form of systematic information that can be used and applied in compiling digital-based learning media**(Mansur et al., 2024)**. These facilities can be provided in the form of a guidebook containing information on the preparation of digital-based learning media. To adapt to technological developments in the 21st century, these guidebooks can be compiled in the form of digital books/e-books that are multimedia.

Digital books/e-books are digital learning resources that collaborate with material texts with various media such as video tutorials and simulation-based multimedia **(Mawarni & Muhtadi, 2017)**, **(Embong et al., 2012)**. E-books or electronic books are paperless books that are easily accessible through a Personal Digital Assistant (PDA) or a special pocket created by information technology companies. E-books are collaborations between modules, digital devices, and the use of various types of supporting media that can add interactive power **(Sofyan, 2019)**, **(Sari et al., 2022)**. Some of the advantages of digital books according to **(Hasbiyati & Khusnah, 2016)** include that they are very easy to carry in many files and do not require space, the information conveyed in e-books is more concrete because it can be added with video tutorials.

E-books can be compiled with a particular application such as using the corporate edition Flip pdf Application. **(Putri & Slamet, 2021)** said that it is an interactive media that can easily add various types of animative media into a flipbook, by using this software an e-book can contain videos, YouTube videos, hyperlinks, animative text, images, and audio and flash **(Rahmadi et al., 2018) (Jannah et al., 2020)**. Thus, the e-book that will be produced using this software will be interesting and interactive. Several previous studies that have developed digital books using the Flip Pdf corporate edition application include those that state that Flip Pdf corporate-based e-modules on broad material and volume are practical and effective to use **(Ferdianto & Nurulfatwa, 2019) (Komikesari et al., 2020) (Sa'diyah, 2021)**. Likewise, research **(Putri & Slamet, 2021)** states that the e-book learning media using the Flip Pdf Corporate Edition is considered practical to be used by teachers and students in learning. The same thing is also found in research **(Zinnurain, 2021)** which states that learning modules compiled using Flip pdf corporate edition have implications for the quality of learning as indicated by increased student interest, effectiveness, and efficiency of learning.

Based on the results of previous research and the facts on the need for information on the preparation of digital-based learning media for teachers in meeting the competencies of 21st-century teachers, it is necessary to develop an e-book containing information on the preparation of digital-based learning media. Through these e-books, teachers can independently develop learning media for their students to support the learning process. Therefore, in this study, an e-book will be developed for teachers so that valid and practical results are obtained.

METHODS

The method used in this research is the development research method which is usually referred to as Research and Development. This development research aims to produce a product in the form of an e-book that can be used by teachers as a guide in the preparation of digital learning media. The development research process uses the ADDIE model with stages, namely Analysis, Design, Development, Implementation, and Evaluation **(Aldoobie, 2015) (Rayanto, 2020)**. The subjects involved in this study were the MAS teacher Nurul Islam Airbakoman Tanggamus who consisted of 30 people.

The ADDIE instructional model is an instructional process that consists of five phases, namely analysis, design, development, implementation, and dynamic evaluation. The stages of the ADDIE Model are implemented as follows **(Cahyadi, 2019)**: The first stage in this

development research is Analysis which aims to obtain information related to the needs used in developing e-books. The activities that will be carried out in this first stage are 1) Needs analysis, which aims to explore various materials or content that will appear in the e-book according to the needs and problems faced by the MAS teacher Nurul Islam Airbakoman Tanggamus. 2) Analysis of teacher characteristics and abilities, aims to determine whether the characteristics and abilities of MAS Nurul Islam Airbakoman Tanggamus teachers are by the e-book that will be developed. 3) Analysis of technological developments, aims to see the availability of supporting facilities for teachers in implementing e-books.

The second stage is Design. The process of activities carried out at this stage is the design of scientific material/content that will be presented in the e-book, the preparation of the book script, the design of the media scenario, the making of supporting videos, the preparation of the e-book using the Flip Pdf Corporate Edition. At this stage, an initial product will be produced which will then be analyzed to determine the feasibility and practicality for the next stage.

The third stage is Development or development to find out whether the e-book product produced at the Design is feasible to use. Measurement of the feasibility of e-books uses a standardized instrument, namely Instrument D Assessment of Educator's Guidebooks issued by the Education Standards, Curriculum and Assessment Agency of the Ministry of Education, Culture, Research, and Technology. The instrument is used to measure the feasibility of the e-book based on components and aspects which include material/content, presentation, language, and graphics. The measurement of the feasibility of the e-book is carried out by 3 validators based on the predetermined assessment instruments and rubrics. The feasibility assessment can be seen based on the table. 1 following.

Table 1. E-Book Feasibility Assessment

Score	Meaning
Score ≥ 360	Eligible with very good predicate
315 ≤ score < 360	Eligible with good predicate
260 ≤ score < 315	Eligible with sufficient predicate
score < 260	Not eligible

The fourth stage, namely Implementation, and Evaluation is a liaison between the designer and the user. The process of activities carried out at this stage is the application of e-books that are declared eligible with a minimum predicate of good to 30 MAS Nurul Islam Airbakoman teachers. E-books that have gone through the development stage will be used by teachers in compiling digital learning media for one month. Next, the teacher will respond by filling out a questionnaire to assess whether the e-book used is practical or not. In the questionnaire, the teacher will provide an assessment of the presentation of material/content, media/display, and benefits.

RESULTS AND DISCUSSION

This development research resulted in a product in the form of an e-book entitled Online Learning Technology. The first stage, namely Analysis obtained data about the needs, characteristics, knowledge, and technological developments of the MAS teacher Nurul Islam

Airbakoman. In general, based on data analysis, information is obtained that teachers have characteristics that are open to changes and developments in digital technology, and have high motivation to always actualize their knowledge. In terms of knowledge, in general, teachers have proficient knowledge in using and following developments in digital technology, as well as having sufficient and supportive laptop and internet facilities to create digital media. The needs expected by teachers are e-books that contain material or content that can support the implementation of teacher tasks in the learning process, such as information on learning management using LMS, preparation of digital-based learning media, and the use of education platforms for online learning processes. realtime. Based on the information obtained from the analysis, the e-book with the title of online learning technology that will be developed is the right solution for the problems of teachers at MAS Nurul Islam Airbakoman.

The second stage, namely Design, produces material/content designs that will be presented in the e-book including Learning Management Systems (LMS), Online Learning Media, and Platforms Feedback Real-Time This material is based on the teacher's need for information about the use of digital technology to support the 21st-century learning process. The e-book is designed in the form of a script or text that is equipped with links and tutorials in the form of youtube videos.

The product will then be measured for its feasibility through Development which is the third stage in this research. The feasibility assessment was carried out by 3 validators, namely validator 1 Mrs. Binti Anisaul Khasanah, validator 2 Mrs. Robia Astuti, M.Pd., and validator 3 Mrs. Ana Istiani, M.Sc. The feasibility assessment uses a standard instrument that contains an assessment of the components of the material/content, language, presentation, and graphics. Based on the assessment of 3 validators obtained information such as Figure 1. Below
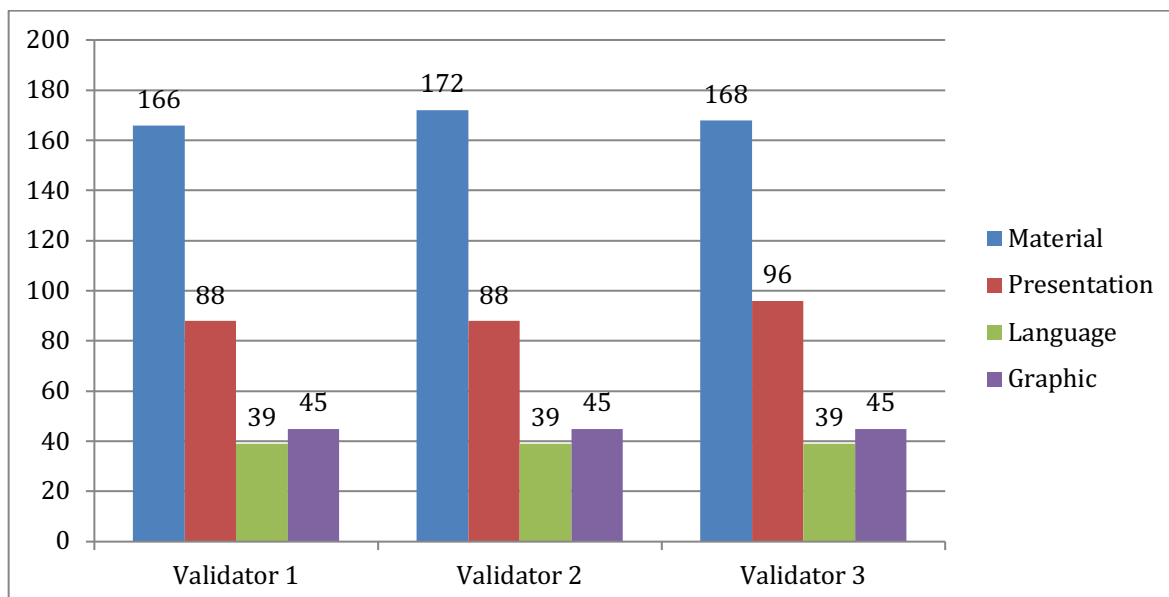

Figure 1. E-book assessment results by 3 validators

The average assessment on the aspects of material, presentation, language, and graphics is 343. This score shows that the results of the e-book assessment are in the proper category with a good predicate. The average rating for each component, namely material, is 168.67;

presentation is 90.67, language is 39, and graphics is 45. Based on the analysis results of the validator's assessment of the material component, it is found that: 1) the material/content is appropriate and supports the achievement of educational goals, and 2) the material/content does not conflict with the laws and regulations. invitation, 3) the material/content does not cause gender discrimination problems, 4) the material/content contains the correct concepts to support the pedagogic and professional competence of teachers, and 5) the material/content is very adequate to develop teacher competence. The assessment of the presentation component of the 3 validators shows that the presentation of the material in the e-book is carried out in a sequential, systematic, straightforward manner, and the explanation is easy to understand. In addition, the presentation of the material also develops academic skills, creativity, and innovation for teachers in preparing digital learning media.

Assessment of the language component shows that the language used in the e-book is considered ethical, functional, communicative, and by the target audience, namely teachers/educators. In addition, the use of spelling, punctuation, vocabulary, sentences, and paragraphs is judged to be by standard rules and terms. As for the assessment of the graphic component, it is assessed that the e-book has an aesthetic, dynamic, and attractive layout and uses illustrations that clarify the understanding of the material/content. The illustrations presented in the e-book are very varied (images, videos, audio, links) so it is not easy to cause boredom to the reader. If it is seen based on the average results of the assessment by 3 validators, namely 343 and compared to Table 1, it can be concluded that the product produced at the design can be said to be feasible with a good predicate. Thus the product development process will be continued at the implementation and evaluation.

The last stage of the e-book development process is to implement or apply the finished product at the development stage to 30 MAS Nurul Islam Airbakoman teachers. At this stage, 30 teachers tried to use e-books as a guide in compiling digital-based learning media according to the subjects taught. After 1 month of using the e-book, the teacher was then asked to give an assessment using a questionnaire. The questionnaire aims to see the teacher's response to the interest and benefits of e-books. Based on the teacher's assessment, the results obtained are as shown in Figure 2. below.
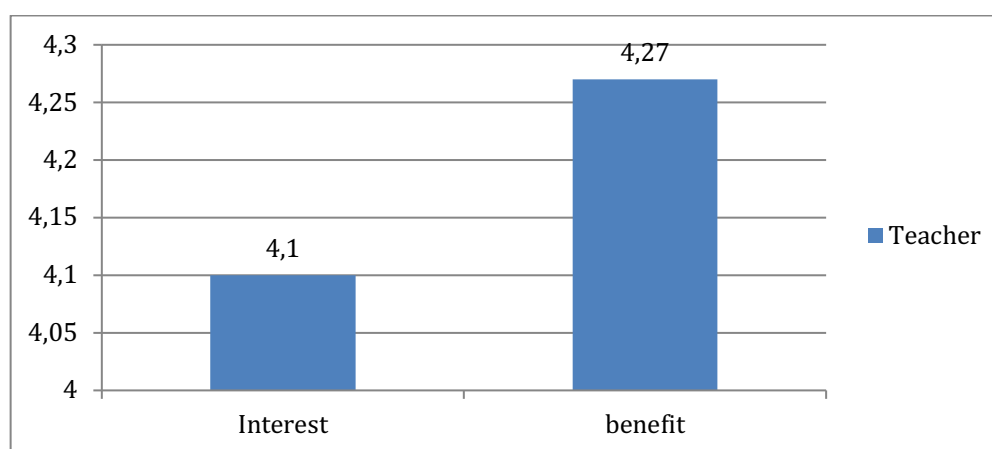

Figure 2. The results of the e-book assessment by the teacher

Based on the graph, it appears that the teacher gave a good response to the e-book on the aspects of interest and benefit with an average value of 4.18. This means that the e-book developed is considered practical by the teacher to be used as a guidebook in the preparation of digital learning media. The e-book can be accessed through the link http://teknologipembelajarandaringebook.netlify.app/

Teachers' adoption of e-books is fragmented, due to several factors including the e-book design. Therefore, instructional designers, teachers, and policymakers need to work together to facilitate the design and adoption of open and interactive e-books. (Zhang et al., 2021) Analyzing technological developments can help identify the availability of supporting facilities for teachers in implementing e-books. E-books have multiple interactive features that enrich the learning experience in students and help them perform better in school. They are easily accessible and help teachers find the best and most up-to-date method of teaching their students. Additionally, the application of information technology to e-book learning causes it to outperform traditional teaching with paper textbooks in terms of learning motivation and effectiveness. Using modern technology, each teacher may build their curriculum and support materials, employing their most creative side to personalize learning. (Haleem et al., 2022)

CONCLUSION

Based on the results of data analysis through the process stages that have been described in the results and discussion of the research, it can be concluded that the e-book with the title Online Learning Technology is feasible and practical to use and can be utilized by teachers in compiling digital media and managing online learning; (1) The results of the feasibility test to the expert obtained an average overall percentage was 86%, eligible with a good predicate. This shows that the e-book using Flip Pdf Corporate Edition is suitable for supporting information on the preparation of digital-based learning media; (2) The teachers have a good response to the interest and benefits of e-book using Flip Pdf Corporate with an average value of 4.18.

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