The Development of Electronic Teaching Materials for Learning ICT on Language Teaching During Covid-19 Pademic

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ABSTRACT

This article is an article on the results of research on the development of ICT on Language Teaching teaching materials in the form of an electronic book (e-book) with an electronic publication file format (epub) for online learning during Covid-19 pandemic. The method used is the method of research and development (R&D). The development stages include information gathering, product design, design validation, product improvement, product testing, and product revision. The subjects in this study consisted of 40 students of the English Language Education Study Program. The research instrument used was a validation sheet for media experts, material experts, and linguists as well as a student perception questionnaire to measure students' perceptions of the use of e-books. The data analysis process was descriptive quantitative. The results of expert validation in this study indicate that the media in the form of e-book teaching materials is suitable for use and the questionnaire on students' perceptions of media use also gives a good category score. So it can be concluded that the development of e-book teaching materials in the epub format is effective for online and independent learning during Covid-19 pandemic.

Keywords: Online, ICT on Language Teaching, Covid-19.

1. INTRODUCTION

Education has a very important role in the life of society. The level of community welfare is one of the indicators influenced by the average level of education that the community has. A society with a high level of education is also expected to have a high quality of life so that prosperity can be achieved [1]. In Indonesia, formal education starts from Early Childhood Education (PAUD) to the tertiary level. Efforts to improve the quality of education continue to be made, a variety of varied learning concepts began to be developed of course by looking at the appropriateness based on the characteristics of the material, situation, and conditions, as well as the environmental conditions of learners.

As is the current situation, when various countries in the world are experiencing difficult times because of the Corona Virus Disease 2019 (Covid-19) epidemic. This condition has changed and influenced the pattern of daily life that has been carried out by people in various fields including the field of education. In the field of education, especially in Indonesia itself, the existence of the Covid-19 epidemic has affected the learning system that has been carried out so far [2]. The government, through the Ministry of Education and Culture, adopted a policy stipulated in its circular number 4 of 2020 to change the learning patterns that were previously carried out face-to-face, turning to learn through the use of technology in networks known as online. This was done to minimize the spread of the Covid-19 virus. Even though learning is carried out online, the government still urges all education administering bodies to be able to continue to optimize the learning process carried out by utilizing information technology.

The utilization of information technology in the learning process is one of them by choosing the right media that suits the situation and conditions of online learning. As the learning activities conducted in the English Language Education study program of the Faculty of Teaching and Educational Sciences (FKIP) Muhammadiyah University of Kotabumi in the subject of ICT On Language Teaching, learning activities that have been done in practice directly in the computer lab today must be done online, of course, requires media

appropriate to be able to present good learning. One of the media that is considered appropriate that can be used as a means of online learning is to make electronic teaching materials (E-Book). An e-book is a publication that consists of text, images, and sound and is published in digital form that can be read on computers or other electronic devices. A digital book is usually an electronic version of a printed book, but it is not uncommon for a book to be published only in digital form without a print version [3]. According to Prastowo, digital books (e-books) as teaching materials that are well designed and equipped with interesting content and illustrations will stimulate learners to utilize teaching materials as learning resources [4]. The research conducted by Darlen et al stated that learning using interactive e-books for learning junior high school Physics has increased, in addition, the use of e-books is more efficient in terms of time [5]. One of the software that can be used to create e-books is Sea Digital Learning (Sigil). Sigil is an open-source editor software that can be downloaded for free virtually. The e-book produced by this application is an e-pub that can be read through a digital book reader application that can be accessed through a digital device. According to Sari, e-pub is a standard digital book format introduced by the International Digital Publishing Forum (IDPF). The e-pub format can be read by various devices including Android so that all students can access this e-book easily and effectively [6]. In addition, Febriati and Budiono presented learning in electronic form that is presented using digital media accessible through computers, gadgets, or other digital devices [7].

The e-book teaching materials that will be developed are expected to be able to provide students with an understanding of the material taught. ICT Learning On Language Teaching includes learning in theory and practice. Through e-books, the online learning process becomes more interactive, in addition, students can better understand the content of the material by repeating the material that has been studied independently. The presentation of the material in the e-book is not only in the form of theory but also equipped with practical simulations in the form of video tutorials that are inserted. At the end of the session, the sub-material in the e-book also provides practice questions as a form of feedback/evaluation of the learning process. In addition, as a test of the finished product, researchers will provide questionnaires to measure students' perceptions of the use of e-books in learning. Based on the above description, the focus of this article answers the following research questions; (1) How to develop electronic teaching materials (e-book) for the course ICT On Language Teaching?, (2) What is the student's perception of the use of this e-book?.

2. METHOD

The method used in research is the research and development method (R & D) with the ADDIE development model which includes five stages, namely Analysis, Design, Development, Implementation and Evaluation. This can be seen in the following figure.
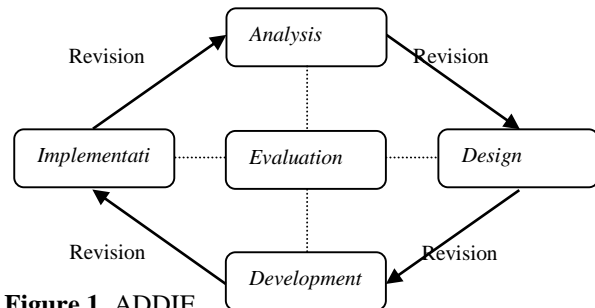

Figure 1. ADDIE

From the picture (figure 1) above, it can be seen that the e-book development process was first carried out by conducting a needs analysis to dig up more information related to the development of e-book teaching materials. Second, the design stage, namely the process of designing teaching materials in the form of e-books that pay attention to several aspects by identifying, detailing, and systematically arranging the main concepts to be studied such as the relevance of the material, the language used, and the e-book display design. Third, the development stage involves creating and combining content that has been designed at the design stage which also focuses on the validation of three experts, material experts, language experts used, and media experts. The three experts assessed this e-book objectively with the rubric guidance provided by the researcher. Fourth, the implementati stage of the revised and tested e-book development results in the ICT On Language Teaching learning process. Fifth, the evaluation stage.

2.1. Participants

The research consisted of 40 fourth semester students of the English language education study program FKIP Muhammadiyah University Kotabumi.

2.2. Instrument

The instruments used in this study were the expert assessment sheet and the student perception questionnaire. Both instruments were validated through expert judgment. The validation results indicate that both instruments are valid and can be used to collect data for this study.

2.3. Data Collection Techniques

In collecting data, the researcher conducts literature and documentation studies, observations, and questionnaires.

The data analysis technique is carried out through the expert validation stage of the product. The score is obtained from the interpretation of the assessment questionnaire given by the expert. The commentary notes and expert suggestions will be taken into consideration in the product revision. The following is the reference for calculating the score used:

Table 1. Data Conversion

Calculation Pattern	Calculation	Interpretation
$\bar{x}>Mi+1,8SDi$	$\bar{x}>4,20$	Very Good
$Mi+0,6SDi<\bar{x}\leq Mi+1,8SDi$	$3,40<\bar{x}\leq4,20$	Good
$Mi-0,6SDi<\bar{x}\leq Mi+0,6SDi$	$2,60<\bar{x}\leq3,40$	Moderate
$Mi-1,8SDi<\bar{x}\leq Mi-1,8SDi$	$1,80<\bar{x}\leq2,60$	Low
$\bar{x}>Mi+1,8SDi$	$\bar{x}\leq1,80$	Very Low

Note:

Mi= Ideal Average

Sdi= Ideal Standar Deviation

$\bar{x}$= Empirical Average

The questionnaire analysis process used quantitative descriptive. Data in the form of a scale likert (1-5).

3. RESULT AND DISCUSSION

The results and discussion of this study will be presented based on the focus of the research questions:

3.1. How are the steps to develop electronic teaching materials (e-books) for the ICT on Language Teaching course. Some of the steps taken in the development of electronic teaching materials (e-books) include

3.1.1. Needs Analysis Stage

Results the final product in this research is ICT on Language Teaching teaching materials in the form of an e-book with the epub format which is accessed by an electronic book reading application. First, the development process begins by conducting a needs analysis related to the ICT On Language Teaching course including (1) Analysis of the curriculum used, (2) Analysis of the Semester Learning Plan (RPS), (3) Analysis of the needs for learning facilities and infrastructure and product development. . After all data is collected, learning topics are then formulated, developing teaching materials and also providing exercises in each sub. Theory.

3.1.2. Design Stage

At this stage, the process of identifying, detailing, and systematically arranging the main concepts of the material to be studied is designing a cover with extension (.jpg). Creating supporting images and videos that are tailored to the content of the material to be developed, preparing reference sources to make it easier during the process of creating and developing an e-book.

3.1.3. Development Stage

Supporting materials and data that have been collected at the design stage are then processed using the sigil application into systematic teaching materials that are arranged consistently and well so that students can learn and understand the material easily. Use language that is easy to understand. Another thing that also needs to be considered is the appearance of the teaching material design because it will affect the attractiveness of students to use the teaching materials that are made. Such as a systematic arrangement of material by taking into account the use of fonts, font sizes, color selection, placement of images and videos, use of page numbering, and others. All efforts are made to be well designed and proportionate to produce attractive and effective teaching materials. After the e-book creation process is finished using the sigil program, the book is saved in epub format. After the product is finished, expert validation is carried out. The validation was carried out by 3 experts which include; material expert, linguist, and media expert. Expert validation includes several aspects, namely (1) the suitability of the content and presentation of the teaching materials, (2) the language used, and (3) the appearance of the teaching materials. Validation has been carried out twice for each aspect. Based on an assessment using a scale of 1-5. In the first validation process, the expert assessment score was obtained as follows: the material expert's assessment data obtained an average score of 4.0 by providing several important notes for revision. Furthermore, a score of 3.8 is obtained from the aspect of language use and the researcher still needs to revise it in several parts. A score of 4.1 was obtained from a media expert with a note that several parts need to be revised to make it better.

Product revisions are made based on suggestions and improvements from experts related to their respective expertise. In general, there are some fixes suggested by experts. First, the improvement of the material aspects that were previously used in teaching materials has not explained the more basic concepts in each material. The purpose of adding this concept is so that students can easily understand the material to be studied. So that in the revision the researcher adds a more detailed explanation of basic concepts and provides practical examples that are easy to understand. Second, the illustration aspect also has to be revised because it is considered a little monotonous, less illustrative, and less proportional. Based on the expert's notes, the researcher then revised the appearance of the teaching material

illustrations so that the illustrations were more attractive. Third, the lack of examples and practice questions in each sub-material, so that can make students less understanding of the material well because they are considered a little practice. Based on the expert's notes, the researcher then added some more examples and practice questions. Fourth, is the spelling aspect. The most recommended revision is a typo. Revisions are made to double-check typing spelling. Fifth, revisions related to the layout and tidiness of the content of teaching materials. Improve the suitability of the content of the material with the working paper is used, the selection of fonts, colors, and clarity of legibility to make it easier for students to understand the content of the material.

In the next validation process, after revisions to the product, the validation results get a very good category score from all three aspects. In the aspect of the feasibility of the content and presentation of teaching materials, an average score of 4.2 was obtained and the material experts stated that the teaching materials were suitable for use in terms of the content and presentation of the material. For the aspect of using language in teaching materials, the score is 4.2 with consideration that it is feasible to use. The display aspect of teaching materials is given a score of 4.3 in the final stage which is coupled with appropriate comments to be used as teaching materials.

3.1.4. Implementation Stage

In the implementation stage, the results of the revised ICT On Language Teaching-learning e-book will be used in the online learning process to get the results of student perceptions of the e-book that has been developed. Previously, students were facilitated with the installation of applications that are used to access e-books that are shared in class groups, distribution of ICT On Language Teaching e-book files as well as guidelines on how to use the e-book reading application for students through trials. The trial of this teaching material was conducted several times in online classes. The process of testing this teaching material is following the learning process. The trial process was carried out at several meetings.

3.1.5. Evaluation Stage

To find out students' perceptions of the use of electronic teaching materials, it was carried out by distributing questionnaires to students. The questionnaire calculation is based on a Likert scale of 1-5. Several aspects are used as indicators, namely aspects of relevance, consistency, practicality, and effectiveness. These aspects are developed into appropriate question items. The following is the result

of the analysis of the student perception questionnaire calculation:

Table 2. Student quitionnaire result

Aspek	Skor	Interpretasi
Relevance	3.8	Good
Consistency	4.0	Good
Practice	4.1	Good
Effective	4.4	Very Good

In table 2 above, it is known that the relevance aspect gets a score (3.8) with a good interpretation. The consistency aspect gets a score (4.0) with good interpretation. Furthermore, the Practice Aspect gets a score of (4.1) with a good interpretation. Students can access material through their gadgets/smartphones by installing a book reading application with the epub extension. The fourth aspect is the effectiveness of the category score is very good (4.4). Effectiveness is based on using easier and lighter learning resources with limited space due to the COVID-19 pandemic. In terms of access to e-book files, it is quite easy and students do not need a long time to open the page and search for the desired material. The material presented is not only in the form of theory but there are also practical tutorial videos. The e-book comes with a table of contents with a link and just click on the subtitles listed in the table of contents, the material will appear immediately. From the results of the data above, it can be concluded that the four aspects get a score that is classified as good and very good. It can be concluded that the teaching materials for ICT on Language Teaching in the form of e-books are quite effective and can be used in online learning in the era of the Covid 19 pandemic.

The development of electronic teaching materials on ICT on Language teaching has been successfully done and is suitable for use in both online and independent learning based on validation tests by several experts. Based on the student perception questionnaire, the score results also showed a good category. This certainly shows that students have a positive perception of the use of teaching materials in the form of e-books on learning ICT on Language Teaching. In line with the results of research that has been done in previous related research, such as the results of research conducted by Suparno concluded that electronic books positively improve student achievement and critical thinking [8]. That is, the development of e-books can have a positive impact on students. In addition, the results of Astuti and Kusumajanto concluded that Epub-based electronic books for Display Course can be used effectively [9].

The result of this study is a product of e-book teaching materials in learning ICT on Language Teaching. The e-book teaching materials developed can be used because they are arranged systematically and easily used in online learning and independent learning by students, especially in the current situation and conditions. As pointed out by Kristian, Nova Kristian, and Suyono that good teaching materials are organized

systematically, can motivate students to learn, anticipate students when they feel difficulty in learning, and provide enough practice training to allow students to practice independently [10]. Students only need to access it for free through their technology devices such as gadgets/smartphones.

The process of developing e-book teaching materials in the ICT on Language Teaching class is prepared as an alternative learning source for online learning for students in the Pademi Covid 19 era. The focus of using e-book teaching materials is to help students understand the material presented well even though learning is carried out online, the development of electronic teaching materials that are arranged can trigger independent student understanding to master the material as well as apply it to practice.

4. CONCLUSION AND SUGGESTION

The conclusions of this study are as follows: 1) Based on the expert's assessment of ICT On Language Teaching teaching materials development in the form of an e-book it is feasible to use based on the content/content aspect material, grammar used, and design appearance; 2) Based on the student perception questionnaire, the use of e-books in ICT On Language Teaching-learning gets a good category score and is a positive perception. E-books can be an alternative media used in online learning in the Covid 19 era as it is today and is a source of independent learning by students.

SUGGESTIONS

Suggestions for further researchers to be able to develop and explore electronic teaching materials in other learning materials by utilizing information technology with similar applications or other more innovative applications. The characteristics of the material, the situation, and also the conditions of students also note that need to be considered in determining the right media in product development.

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REFERENCES

[1] E. N. Aini, I. Isnaini, S. Sukamti, and L. N. Amalia, "Pengaruh Tingkat Pendidikan Terhadap Tingkat Kesejahteraan Masyarakat di Kelurahan Kesatrian Kota Malang," *Technomedia J.*, vol. 3, no. 1, pp. 58–72, 2018, doi: 10.33050/tmj.v3i1.333.

[2] A. J. Mahardhani, "Menjadi Warga Negara yang Baik pada Masa Pandemi Covid-19: Persprektif Kenormalan Baru," *J. Pancasila dan Kewarganegaraan*, 2020, doi: 10.24269/jpk.v5.n2.2020.pp65-76.

[3] D. Mentari, S. Sumpono, and A. Ruyani, "Pengembangan media pembelajaran e-book berdasarkan hasil riset elektroforesis 2-d untuk mengukur kemampuan berpikir kreatif mahasiswa," *PENDIPA J. Sci. Educ.*, vol. 2, no. 2, pp. 131–134, 2018, doi: 10.33369/pendipa.2.2.131-134.

[4] M. Wijayanti, "Pengembangan E-book IPA Fisika Berbasis Program Sigil Peserta Didik SMPN 23 Simbang Kabupaten Maros," *Semin. Nas. Fis. 2018*, pp. 1–5, 2018.

[5] R. F. Darlen, S. Sjarkawi, and A. Lukman, "Pengembangan e-book interaktif untuk pembelajaran fisika SMP," *J. Tekno-Pedagogi*, vol. 5, no. 1, pp. 13–23, 2015.

[6] A. S. Sari, "The Development of Digital Book through Sigil Application in Cookies dan Candys Lessons," *J. Sci. Tech*, vol. 1, no. 2, pp. 46–54, 2016.

[7] ANISSA FITRI FEBRIANTI, "Pengembangan Modul Biologi Berbasis Web Untuk Mendukung Pembelajaran Interaktif," pp. 2–156, 2017.

[8] S. Suparno, "Development of E-Book Multimedia Model to Increase Critical Thinking of Senior High School Students," *Din. Pendidik.*, vol. 12, no. 2, pp. 196–206, 2018, doi: 10.15294/dp.v12i2.13567.

[9] O. W. Astuti and D. D. Kusumajanto, "Development of Electronic Book (E-Book) EPUB-Based for Display Course," *J. Pendidik. Bisnis dan Manaj.*, vol. 3, no. 2, pp. 157–164, 2017, doi: 10.17977/um003v3i22017p157.

[10] N. Kristian, Suyono, and Sunaryo, "Pengembangan Bahan Ajar Menulis Laporan Penelitian Berbasis Pengayaan Skemata Bacaan," *J. Pendidikan, Vol. 1, No. 2,* vol. 1, no. 1, pp. 203–213, 2016.