

# Development of Electronic Economic Book Learning Media For Class XI IIS Students

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## ABSTRACT

This study aims to 1) Develop economic electronic book learning media that is feasible to be applied as an economics learning medium in class XI IIS, 2) Determine the feasibility of economic electronic book learning media to be applied as economic learning media for students. class XI IIS. This research uses research and development research and development (R&D) methods. This study shows the following results 1) produces a product in the form of an economic electronic book learning media. 2) The learning product of economic electronic book has been declared feasible as a learning medium by media experts from the validation results with an average value of 3.8 valid categories. The average score of 4.3 from material experts in the valid category. The results of the field trial assessment of this learning media are in the good quality range with a range of 28-36. From the results of media validation and testing of learning media products, it was concluded that this economic electronic book could be used as a learning medium for the learning process.

**Keywords:** *Learning media, Electronic book*

## 1. INTRODUCTION

The development of science and technology is growing rapidly so that it encourages every human being to respond to all these developments quickly. The rapid development of computer and internet technology makes electronic-based learning an important learning method. Human resources are required to have the ability to respond to the development of science and technology. To obtain these abilities, education must be directed at mastering competencies in order to be able to compete in the world and improve the quality of the nation.

The development of information technology has an influence on the world of education, especially in the learning process. Research conducted [5] shows the results that students are motivated through the use of technology in classroom learning. The learning process can be easy and interesting with the use of technology. According to Rosenberg, the use of developing information technology has several shifts in the learning process, namely: 1) from training to appearances, 2) from classrooms to unlimited places, 3) from paper to paperless, and 4) from physical facilities to facility network.

Along with technological developments and the emergence of the industrial revolution era 4.0 which leads to digital technology, it affects the learning process. The learning needed in the era of information and communication technology will be carried out properly through the use of technology. Students can access all

subject matter by utilizing technology such as the internet. Students who use the internet for positive things will use the internet to access as much material as possible. However, there are also students who use the internet only for social media or playing games.

The era of the industrial revolution 4.0 also requires teachers to change the learning process. Teachers are required to be able to achieve the 4C learning objectives, namely critical thinking, creative thinking, collaboration and communicativeness. Teachers, students, and the learning environment must synergize in the learning process to achieve learning objectives. Media is one of the factors supporting the achievement of learning objectives. Media as a supporter of the learning process is needed by teachers and students. Learning media is very important in learning activities implementing the 2013 curriculum emphasizing the active learning process with a scientific approach [3]. This encourages teachers to use media that can stimulate students' critical thinking skills. This is in line with what is expected by the government in implementing the 2013 curriculum, namely so that students are able to think critically. Learning is an effort made by a person to obtain a change in behavior as a whole, as a result of his own experience in interacting with the environment. [2]. Meanwhile, according to Gage and Berliner, learning is a process of changing behavior arising from experience. According to some of the experts above, it is explained that learning is a process of changing behavior. Learning is a process of changing behavior that arises from experience [12]. According to some of the

experts above, it is explained that learning is a process of changing behavior. Learning is a process of behavior change that arises due to experience [12].

Learning media is a tool used to distribute messages, information, or materials to the recipient of the message or learner [13]. The use of appropriate and varied media in learning activities can increase learning motivation and reduce students' passive attitude [6]. There is a significant difference between the average learning outcomes of students who are taught the charm of physics learning media and students who are taught conventional learning media [16].

Learning media must be made as attractive as possible so that students have an interest in understanding the material being taught. One of the media that is often used in the learning process is a book. However, sometimes students are lazy to bring books for serious reasons. Even though the availability of books in the school library is quite adequate. The results of observations and interviews with DEK SMA librarians that the books available in the library are sufficient for the number of students. However, not all students borrow books from the library. The following is data on the number of economic books in the DEK SMA library.

**Table 1.** Data on the Number of Economics Books and High School DEK Students for the 2020/2021 Academic Year

| No | Class   | Number of students | Number of Books | Number of Students Borrowing | Percentage |
|----|---------|--------------------|-----------------|------------------------------|------------|
| 1  | X IIS   | 15 people          | 17              | 12 people                    | 80%        |
| 2  | XI IIS  | 16 people          | 22              | 5 people                     | 31.3%      |
| 3  | XII IIS | 21 people          | 22              | 15 people                    | 71.4%      |

*\*Source: DEK HIGH SCHOOL library*

Based on Table 1 above, it can be seen that the students who borrowed some books from the library were students of class XI IIS. Less than half of students borrow books from the library. After conducting interviews with several students, they stated that the reason for not borrowing books from the library was because it was heavy and they could access all the materials using their cell phones. Therefore, the development of electronic books can be used to overcome the problem of the low interest of students in bringing books to school. Electronic books make it easy for students to study without the need to carry books and can be accessed anytime and anywhere through their smartphones.

Research on e-book media has been widely carried out and e-book media can be used as an interesting learning media. However, research on e-book media is mostly found in science lessons.[9] This e-book of interactive high school chemistry material for the XI semester is worthy of being used as a learning resource. Student response to electronic book media is 88.91%, this shows students are interested in electronic book media in the teaching and learning process.

Interactive learning environment, acceptable screen size, self-efficacy, perceived self-regulation positively affect perceived satisfaction in using e-books as a learning tool [8]. Furthermore, research conducted by Fauzi and Wiyono [4] showed that e-book learning media about the types of materials and characteristics of steel materials were suitable for use in the teaching and learning process.

The development of mobile technology is currently so fast. Cell phones are one of the most commonly used

mobile devices. All students already have one or even more than one cell phone. The majority of students already own and use mobile devices, providing great opportunities for teachers to use technology devices in education. Learning media that utilizes cell phone technology is called mobile learning (M-Learning). Mobile learning can be used as an alternative to develop learning media. Mobile learning can be used as a complement to learning and students can learn material that is less mastered anywhere and anytime.

Based on 2014 IDC (International Data Corporation) data, Android controls 84.4% of the smartphone market share worldwide, the iPhone operating system is the iPhone operating system, which ranks second with 11.7%, followed by Windows Phone in second. rank. third with 2.9%, and Blackberry in fourth place with 0.5% market share. Android's success cannot be separated from its open nature, which can provide free software source code so that developers can develop, distribute, and copy it without paying any license.

The results of observations made in class XI IIS SMA DEK Padang with 16 students, all of whom already have their own cellphones and the majority use Android smartphones. At SMA DEK Padang there is already a learning media that uses mobile phones. However, its use is only in exact subjects, such as mathematics, physics, chemistry, and biology. As for social studies and language subjects, teachers still use laptops, LCDs, and whiteboards to teach. Developing learning media by utilizing cell phones is making electronic books that can be accessed by students through their cell phones. In this electronic book media, it will be designed like a printed book which is

made to resemble reading a book on their cellphone. Besides that, There will also be practice questions and exams that students can answer when they have completed all the material. Learning through smartphone media will be more practical to do anywhere and anytime so that it can make it easier for students to learn. Therefore, the authors are encouraged to develop an economics electronic book learning media for students of class XI IIS.

Restiyowati and Sanjaya conducted research on the development of an interactive e-book on chemistry for class XI SMA [9]. This study aims to determine the feasibility of an interactive e-book on chemistry in the eleventh semester of senior high school as a learning resource in terms of the criteria for suitability of content, presentation and language. This research is development research using a 4-D development model to the development stage. *Methods Data collection used in this study using questionnaires, observation sheets and tests were analyzed descriptively. Research results show that the interactive e-book of chemistry material for the eleventh semester of class XI SMA is feasible to be used as a learning resource with eligibility criteria including: content 84.06%, language 83.42%, presentation 85.73%, student activity level 81.66% and the response of students who answered yes was 88.91%.*

Furthermore, research conducted by Wavirotn and S (2016) have conducted research on the development of electronic book learning media (e-books) for economic subjects with international trade subjects in class XI IIS students of SMA Negeri 1 Talun Blitar. The purpose of this research is to compile and produce learning media in the form of an electronic book (e-book) for class XI IIS students of SMA Negeri 1 Talun Blitar on the subject of International Trade. This development research uses the ADDIE model which is adapted to the type of product being developed. Validation is carried out through several stages, including validation of media experts and subject matter experts, and testing. The results of the media expert's assessment were declared very valid and could be used without revision as a whole/basic with the criteria of 91.67%. While the results of the validity of the material experts obtained at 88.97% with very valid criteria and can be used without revision. Youmedia product trials in this study were carried out in 3 stages, namely: individual trials, small group trials, and large group trials. Individual trials were carried out on 3 students with the results of individual trials getting a validity percentage of 72.92% with quite valid criteria. Small group trials were carried out on 10 students, the results of small group trials obtained the percentage of validity of 76.72%. Large group trials were conducted on 30 students, the results of large group trials obtained a validity percentage of 87.63% with very valid criteria. [17].

Dirgatama, et al (2017) conducted a study entitled "*Effectiveness of Achieved E-Book Based Curriculum 2013 as an Effort to Improve Learning Outcomes in Vocational High Schools*". The research conducted is research and development. Data for media was developed using Sigil software with the help of Supreader software. The instruments used in this study were questionnaires and tests. The results of the analysis of the average value of the experimental group was 81.25 and the control group was 75.94 for the post-test. Learning media using the 2013 Curriculum e-book is effective for improving student learning outcomes [3]. Liaw and Huang (2014) conducted a study entitled "Investigating learner attitudes towards e-books as a learning tool: based on an activity theory approach". This study analyzes the use of e-books as a learning tool in terms of learning effectiveness, student satisfaction and behavioral intentions. This study aims to understand students' attitudes towards e-books in two physical sizes, namely 10" and 7". The results showed that screen size can affect students' self-efficacy in using e-books. Interactive learning environment, self-efficacy, acceptable screen size, and self-regulation have a positive effect on perceived satisfaction from using e-books as learning media [8].

Reid (2016) conducted a study entitled "Electronic Books and Printed Books Can Have Different Effects on Literacy Understanding". This research analyzes e-book and printed books that can be used as literacy tools. This study was conducted to determine whether e-books can help students improve reading comprehension skills. The results of the study found that e-books contain interesting reading features to help students improve reading comprehension [10].

## 2. METHOD

Based on the problems studied, the type of research used is development research. Research and development is a scientific way to research, design, produce and test the validity of the products that have been produced [14]. This development research is used to develop economic learning media for class XI IIS. This research will be conducted at SMA DEK Padang. This research was conducted on students of class XI IIS Economics SMA DEK Padang. Research time is in semester 2 of the 2020/2021 academic year. The research period is May-June 2021.

The economics electronic book learning media was developed with a development model adapted from the Thiagarajan model. Thiagarajan suggests that the steps in research and development consist of 4D, namely Define, Design, Development and Dissemination. [14]. This development model is used because it is in accordance with the type of research and development carried out.

This model is intended to develop teaching materials for teachers [11]. However, this research has only reached the development stage due to the limitations of the researcher in terms of time and cost.

The steps of research and development with the 4D model developed by Thiagarajan are as follows: Define Stage, This stage contains activities to determine what products will be developed along with their specifications [11]. This stage is a needs analysis activity carried out through research and literature studies [14]. There are 5 steps in the definition stage, namely: Preliminary Analysis, Student Analysis, Task Analysis, Concept Analysis, and Formulation of Learning Objectives. Design stage (design) This stage contains activities to make designs for products that have been determined [14]. The steps at this stage include: Media Selection, Format Selection, Initial Design. Development Stage The development stage is the stage for producing development products. This activity aims to collect data to determine the level of validity, practicality and effectiveness of economic learning media in the form of electronic books. At this stage there are two steps taken, namely: Expert Assessment, Development Trial. The instruments used to collect data in this study were: Instruments in the initial analysis, Practicality Instruments and Effectiveness Instruments. The analysis technique used is validity analysis and practicality analysis.

### **3. RESULT AND DISCUSSION**

#### ***3.1 How is the development of economic electronic book learning media for class XI IIS students?***

Learning media are not just tools or objects that can be used by teachers to convey the contents of learning materials. Learning media is everything related to software and hardware that can be used to convey the contents of teaching materials from learning resources to students that can stimulate students' thoughts, feelings, concerns and interests so that the learning process becomes more effective.[7] . The learning process in this case is not only the learning process in the classroom, but also the learning process outside the classroom.

The process of developing e-book-based media as an economic learning medium adapts the 4D research model developed by Thiagarajan [11]. As the name suggests 4D, the steps for developing media with 4D have 4 stages of development. However, in this study only up to 3 stages.

The first stage is define, this stage contains activities to determine the product to be developed. This stage consists of 5 steps, namely the initial analysis which aims to find out the basic problems in the teaching and learning process and the use of media. The next step is student analysis, this analysis is a study of student characteristics, abilities and

experiences of students at school which will be used as a reference in determining appropriate learning media. The next task analysis step is an analysis to detail the tasks contained in the material that will be explained in the learning media, in this study the material is about international trade. The next stage is concept analysis which aims to identify the main material in the learning media developed so that the learning concept is more systematic and relevant from one concept to another. And the last step is to formulate learning objectives. Learning objectives are targets that students will achieve in learning activities

The second stage is design. At this stage there are several steps of product design, namely media selection. Media research is carried out to identify learning media that are suitable for the characteristics of the material and students. The second step is the selection of the format, the format is carried out so that the format chosen is in accordance with the learning material. And the last step is the initial design, namely the design of the electronic book media that has been made by the researcher and given input by the supervisor. Input from the supervisor is used to improve the electronic book media before production is carried out.

The third stage is develop or development, where the development stage is the stage to produce development products. This activity aims to collect data to determine the level of validity, practicality and effectiveness of economic learning media in the form of electronic books. At this stage there are two steps, the first is expert assessment. Expert judgment is used to get advice from several experts in improving the designed media. Expert validation is divided into two parts, namely media expert validation and material expert validation, in the e-book of economic learning. Media expert validation is a construct validation regarding the suitability of the parts applied to the designed media. The second step is test development, In this step,

#### ***3.2 How is the feasibility of the economic electronic book learning media according to material experts, media experts, practitioners and students of class XI IIS?***

##### **Media expert**

Media expert validation is validated by lecturers with Multimedia expertise. Media expert assessment includes supporting theory, structure and desired learning outcomes. From the results of the data obtained by 3.8, then the learning media is in the good category. From the response questionnaire data filled out by the validator, it is known that the three aspects that become the media validation assessment meet the criteria with an average of 3.8. However, there are some suggestions and comments

given by media experts on the development of this learning media. One of them is the improvement of the structure of learning media. Next, the addition of supporting theory.

#### **Material expert**

Material expert validation is validated by expert lecturers. In the expert's assessment, this material includes supporting theory, syntax, social systems, reaction principles, support systems and media implementation. From the processed data, the value of material expert validation on this learning media is 4.3 with a valid category. Based on the table above, overall the raters are in the valid criteria with an average value of 4.3. The assessment of this material received several suggestions and comments from the validator. As for some suggestions and comments given to the media provided, one of them is the achievement of learning syntax, giving awards to students and others.

#### **Student assessment**

The trial of e-book-based learning media was carried out by SMA DEK Padang students. There are 9 aspects of assessment in the field trial assessment criteria given to students. The results of field trials on e-book learning media are 86.11% with a very practical category. As for the comments and suggestions of students, the overall response showed satisfaction and overall there was no significant increase according to the results of the field validity test of class XI IIS SMA DEK Padang.

#### **4. LIMITATION OF THE RESEARCH**

Research on Economic Learning Media in the Form of Electronic Books can be concluded that this media has gone through development research procedures, but there are several limitations in this research, including:

1. Product Trial application limitations, this research was conducted when the teaching and learning process took place with a limited time, the researcher had to adjust the schedule to the one that had been set. So that in the implementation of product trials and the limited time given, researchers can only do product trials with four implementations.
2. Implementation of practicality and effectiveness tests simultaneously so that no revision can be made between the two activities.
3. The product of this research is still limited to Economic Learning Media in the form of Electronic Books, International Trade materials.
4. The implementation is only carried out in one class with 16 students.
5. This medium has not been tested on a wider class for perfection.
6. Economic Learning Media in the Form of Electronic Books needs to pay attention to four things that are limiting factors in learning International Trade.

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