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DEVELOPMENT OF *BOOK CREATOR-BASED* ELECTRONIC MODULES ON LEARNING THE HUMAN DIGESTIVE SYSTEM IN MADRASAH IBTIDAIYAH

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Abstract: This development research aims to describe the effectiveness of *book creator-based* electronic modules on learning the human digestive system in madrasah ibtidaiyah. Electronic modules or e-modules are developments in information technology that develop learning resources from printed modules into modules packaged in digital form. The research method used is the *Research and Development (R&D)* method with the ADDIE development model which consists of 5 stages, *namely analysis, design, development, iplementations, and evaluations*. The subjects of the electronic module product assessment for validity were 3 media experts and 3 material experts. The target of the small group trial was 1 teacher and 12 grade V students of MI Darussalam Wonodadi. The target of the large group trial was 2 teachers and 27 students of grade V MIN 14 Blitar. The first steps taken are data collection, planning, product draft development, small group trials and product validation, revision of small group trials, large group trials and product improvement. The results of product validation from 3 media experts obtained a percentage of 90.33%. The validation results of 3 material experts obtained a percentage of 90.22%. Small group trials obtained 86% and large groups 93.88%. The results of the electronic module effectiveness test are effectively used in the learning process.
Keywords: Development, Electronic module, *Book Creator*

INTRODUCTION

Education continues to develop after facing the Covid-19 pandemic in 2020 which was confirmed by president Joko Widodo on March 2, 2020 (Rasyidiana, 2021). The development of education requires releven thinking to apply and improve the quality of educators. This affects the way students learn to receive learning that is adjusted to the learning method.

Learning is a feedback activity that has an influence between educators and students. The learning process is an activity that applies basic competencies that are adjusted to the curriculum (Abdullah, 2017). Thenature of learning requires what is called reciprocity where students respond well to what has been taken bythe educator. The implementation of learning will run with fun and challenging to encourage the thinking of students. The learning delivered by educators is adjusted to the needs of the material and the selection of learning media to be delivered.

The development of learning media is needed in the world of education to encourage the spirit of learning of students in mastering the material. This type of multimedia learning media is a combination of various forms of information elements used in conveying learning information (Suryadi, 2020). Learning media itself is defined as a tool that educators can use to convey messages and information to students. The use of learning media in learning activities can be

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done both individually and in groups. These information elements are text, graphics, images, photos, animations, audio, and video.

The rapid development of technology, making the combination of print technology with computer technology in the learning process take place. This module became one of the printed learning media, changed its presentation into electronic form so that an electronic module or known as an e-module was formed. Changes in the world of education have an impact on the learning methods used E-modules are sources or study guides in electronic form that create an interesting atmosphere for students in learning (Inanna et al., 2021). E-modules can be an independent learning resource for students that can increase students' insight and understanding in understanding concepts and subject matter (Murniati, 2022). The electronic module is made as attractive as possible so that students can receive the material in the electronic module.

The use of digital learning can improve the learning process. There are so many applications thatcan be used in the learning process such as *imovie, green screen, show me, book creator* and others (Puspita et al. 2020). The use of electronic books in learning using the *book creator* application in the classroom can attract students to understand the material during the learning process. Students can express knowledge through *book creators*, besides that students can react with images, videos, and text written with various models (Jalinus &; Ambiyar, 2016). Currently, educators are required to use learning resources that are easy to use and can be used anywhere such as e-modules that are made with an online system and can be accessed easily. Therefore, educators can use technological advances to students so that learning goals can be achieved properly.

Based on the results of initial observations made, there are several problems that arise in the learning process. Such as the low activity of students in the learning process, especially in natural sciences. Where the current generation prefers *gadgets* compared to books (Razal et al., 2021). The low learning activity of students is seen from several problems such as being lazy to read textbooks and notebooks and paying less attention to the material delivered by educators, low students to ask questions, lack of enthusiasm in following learning which results in drowsiness, talking to their friends not listening to the material presented, and not focusing on paying attention to the material. This causes students to not master the material and easily forget about the material that has been learned before.

Low learning activities are caused by improper selection of learning methods, resulting in students being less active in the learning process to understand the material that has been delivered by educators. However, educators are required to understand the use of learning resources that can be used. Electronic modules can be used by educators as a complementary source in learning because in this electronic module can be accessed anywhere, the explanations delivered can be adjusted to the material, and are environmentally friendly because they do not consume too much paper. Therefore, educators can use this electronic module as a learning medium for students in the learning process will be fun so that learning objectives can be achieved properly (Kustandi &; Daddy, 2020).

In the background previously described, the research is interested in conducting research, so the author takes the title of "Development of *Book Creator-Based Electronic Modules* on the Human Digestive System in Madrasah Ibtidaiyah".

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METHOD

The research method used is the research and development method or *Research and Development* (R & D). Research and development (R&D) aims to produce new products through the development process (Sugiono, 2016). The resulting products can be in the form of media, modules, books, evaluation tools and learning tools The research model used in the development of electronic modules or e-modules, namely the ADDIE development model which has 5 stages *of analysis, Design, Development, Implementation* and *Evaluation* (Nuryanah et al., 2021). Adelina said the ADDIE learning design model is a procedural model that is simple and easy in the form of teaching material products, for short-term or continuous training (Hasyim, 2016). The ADDIE steps are as follows:

1. **Analysis**
   The analysis stage of media development by collecting data related to problems faced during learning. The problems analyzed are such as analyzing needs, analyzing material, and analyzing students.
2. **Design**
   The second stage is to design learning objectives that are tailored to the needs of students and the curriculum implemented in school institutions. At this stage can determine core competencies, basic competencies, indicators, designing products, materials and questions to be developed.
3. **Development**
   The development stage is the process of making a real electronic module product and testing it before being applied in school institutions.
4. **Implementation**
   This stage is the implementation of trials of electronic module products using questionnaires that can be used to develop electronic module products.
5. **Evaluations**
   The last stage is an activity to evaluate electronic module products and evaluate student learning outcomes.

Results and Discussion

1. **Analysis**

   The first step taken is the implementation of interviews with educators with the aim of obtaining information about problems that arise during the learning process. (Erica &; Sukmawati, 2021). In addition to interviews, it also analyzes the problems that arise and how to solve them. From the interview results, the learning process only uses limited textbooks and media. This causes students to feel less interested in following learning and less active. Learning feels boring because it only reads, listens to the material and does the questions in the textbook.

   Based on the results of the above problems, researchers developed an electronic module based *on a book creator* that can be used as a learning medium. *Book creator-based* learning media is quite effective in learning, especially in science learning. In the

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electronic module, there are features, images, audio and video that can be used by students or educators (Ayu et al. 2021). The use of this electronic module can be used anywhere and anytime. If students do not understand the learning material, they can learn the material again at home.

2. Design

The second stage is to make a product design, in this activity the researcher makes an electronic module product design with several steps, namely:

a. Formulate basic competencies and learning objectives

First in making electronic modules by determining competencies and learning objectives. Researchers develop science learning in the form of electronic modules.

b. Create *a storyboard*

The next step is to create *a storyboard* as a basic form of the product being developed. In making *storyboards* using images that are still disguised and using different colors with the aim of distinguishing from one shape to another. Here is a *storyboard* image on the development of electronic modules.

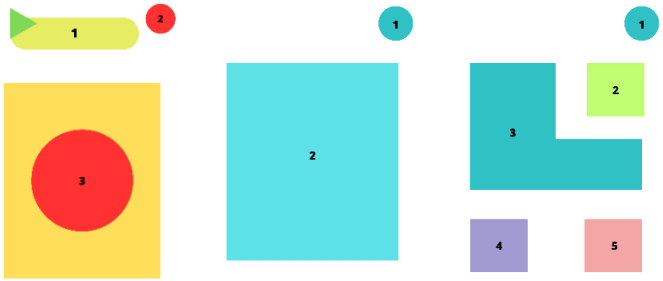

Figure 1. Electronic *Module Storyboard* Section

c. Prepare an initial draft of the electronic module

Book creator-based electronic modules generally have several components that must be present, including:

1. Cover design
2. About digital *book creator*
3. Opening video
4. Prayer before studying
5. Instructions for use
6. Table of contents
7. Basic competence and learning objectives
8. Concept map
9. Materials
10. Group and individual tasks
11. Glossary
12. Summary

d. Create a design for *the book creator*

Making products in the form of *book creator-based* electronic modules starts on the front cover until the material is delivered. Electronic module products are

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designed using canva. The initial part consists of the front cover to the concept map can be seen in the following image.

Figure 2, Beginning on Electronic Modules

The content section of the *book creator-based* electronic module consists of material on the human digestive system and digestive disorders in humans. In each material there is material equipped with pictures and videos. The contents can be seen in the following image.

Figure 3, Content Section

The final part of the product consists of a glossary and a summary of the material. The glossary contains terms that are rarely heard by students. While the summary contains the material conclusions of the human digestive system and digestive disorders. Here is a picture of the final part of the electronic module product.

Figure 4, Electronic Module End Section

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e. Create a testing strategy

The electronic module has two assessments: individually and in groups. This can find out the knowledge of students in learning the material of the human digestive system and researchers give an evaluation value at the end of the material.

3. Development

Development of learning media using *the book creator* application and assisted by Canva. The *book creator* app comes with navigation, *hyperlinks*, video, images, and audio. After all components have been created, they are then saved and linked. The link can be shared with students to learn.

The validation test is carried out after the learning media is ready. After that, validate 3 media validation experts, 3 material validation experts, and 3 question validation experts. The following are the validation summary results from the development of *book creator-based* electronic modules.

Table 1, Validation Summary Results

No.	Validators	Percentage	Criterion
1.	Validator Media	90,33%	Valid
2.	Material Validator	90,22%	Valid
3.	Question Validator	86,66%	Valid

Source: Primary data

The results of the calculation above show that media validation obtained a percentage of 90.33%, which means that this product is valid for use. In expert validation, the material obtained a calculation of 90.22%, which means that it is valid to use. While expert validation of the question obtained a percentage of 86.66%, which means that this question can be used as a form of assessment. The validator gives some suggestions to improve the electronic module product such as the colors used and the size of the image inside the electronic module. The results of the product revision can be seen in the following figure.

Figure 5, Instructions for Use Before Revision

Figure 6, Revised Instructions for Use

Validator experts provide advice on choosing the appropriate color to make it look more attractive. Using harmonious colors makes the eyes painless.

4. Implementation

The next stage is implementation which consists of 2 stages:

a. Small group trials

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The implementation of small group trials is carried out offline by providing questionnaires to students. The results of student validation obtained an average of 86%, then *the book creator-based* electronic module obtained effectiveness criteria.

b. Large group trials

Large group trials use *simple radem sampling* techniques for large group trials (Saputro, 2017). There was a large group trial of 28 students. Based on the results of the questionnaire, large group trials obtained an average of 93.88%, which means that *the book creator-based* science electronic module can be used in learning.

5. Evaluation

a. Comparison of trial stages

The research trial was carried out in two stages, namely small group trials and large group trials. The comparative results of the small group trial can be seen in the following table:

Table 2, Comparative Results of Practicality of the Trial Phase

No.	Assessment Items	Trial		category
		Small groups	**Large groups**	
1.	The appearance of this e-module is attractive	90%	95,84%	Good
2.	The color blend used in the e-module is appropriate	83,33%	95,09%	Good
3.	The display on the e-module provides motivation in learning	90%	96,60%	Good
4.	The look and content are not boring	83,33%	92,45%	Good
5.	The letters used are correct	81,67%	91,69%	Good
6.	The videos, images, and materials are excellent	86,67%	94,71%	Good
7.	The material in this e-module is easy to use	86,67%	92,83%	Good
8.	Images and videos help in 3understanding the material	96,67%	94,33%	Good

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No.	Assessment Items	Trial		category
		Small groups	**Large groups**	
9.	This e-module makes it easier to learn on your own	85%	90,94%	Good
10.	The information presented adds new knowledge	88,33%	94,33%	Good
11.	The practice questions are presented completely	91,67%	92,83%	Good
12.	Sentences and paragraphs are easy to understand	83,33%	95,47%	Good
13.	The use of language is easy to understand	81,67%	97,35%	Good
14.	The instructions for use of the e-module are clear	83,33%	93,20%	Good
15.	Easy use of e-modules	83,33%	90,56%	Good
Average		**90%**		**Good**

Source: Primary Data

The results of the comparison of effectiveness from small groups and large groups obtained a percentage of 90%, which means that *book creator-based* e-module products fall into the "good" category. Then this product can be used in the process of learning science material.

c. Level of effectiveness

The effectiveness of this learning media after conducting trials and obtaining *pretest* and *postest values*, with the data obtained can be analyzed using SPSS 25 for normality tests and T tests (Hypothesis).

Table 3, *Pretest* and *Postest* Values

No.	Value		KKM
	Pretest	***Postest***	
1.	76	92	70
2.	60	76	70
3.	80	92	70
4	68	80	70

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5.	92	100	70
6.	76	88	70
7.	88	100	70
8.	68	92	70
9.	64	76	70
10.	88	100	70
11.	72	88	70
12.	60	84	70
13.	76	88	70
14.	60	80	70
15.	72	88	70
16.	72	88	70
17.	60	84	70
18.	80	92	70
19.	72	84	70
20.	72	88	70
21.	72	80	70
22.	66	88	70
23.	52	80	70
24.	60	72	70
25.	48	80	70
26.	76	92	70
27.	60	80	70
	PT=	**x 100%**	**100%**
	Criterion		**Excellent**

Source: Primary Data

Based on the table above, it can be concluded that the pretest and postest values in class V MIN 14 Blitar below is the table of normality test autput on the pretest and postest values of class V MIN 14 Blitar using SPSS 25 for windows. The following table 4.15 normality test results using I-Sample Kolmogrorov-Smirnov on SPSS 25 for windos are as follows.

Table 4, Normality Test Results

Tests of Normality				
	Kolmogorov-Smirnov[a]		Shapiro-Wilk	
class	Statistics Df	Sig.	Statistics Df	Sig.

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Student learning outcomes	Pretest	.130	27	.200*	.967	27	.515
	Postest	.143	27	.166	.946	27	.175

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Primary Data

The normality test results obtained using one sample Kolmogorov sirmonov test for pretest 0.200 and postest 0.166 with a significance level of 0.05. So at postest values 0.200 > 0.05 and postest 0.166 > 0.05. So with these results it can be stated that H1 with data is normally distributed. Meanwhile, the normality test is accepted and it is stated that there are differences in test results before and after using learning media.

The T test is carried out after conducting the normality test, the T test is carried out to understand if there are differences in improving comprehension abilities during the learning process using book creator-based e-modules. The results of the hypothesis can be seen in the following table be.

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	Df	Sig. (2-tailed)
Pair 1 Pretest-Postest	-16.37037	6.02653	1.15981	-18.75439	-13.98635	14.115	26	.000

Source: Primary Data

Based on table 4.16 *Sig. (2-tailed)* = .000. *Sig* results are less than = 0.05, which is 0.000 < 0.05, then H1 means that there is a difference from the test conducted by class V Ayyub between before and after using *book creator-based* electronic module learning media.

CONCLUSION

Based on the results of research on product development of *book creator-based* electronic modules that can be used by students in the basic class V. Electronic modules can be used as learning media used in the learning process because of their attractive appearance. The use of this electronic module is good and effective in the classroom. Hopefully with this research the *book creator* website can be disseminated so that more people know, can provide benefits for educators, students and further researchers.

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