

DEVELOPMENT OF E-MODULE USING EXE IN LEARNING MATERIALS LEARNING MATERIALS FOR FOUR CLASS VII JUNIOR HIGH SCHOOL STUDENTS

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ABSTRACT

This research is motivated by students who still do not understand rectangular flat shapes because the learning that is done by the teacher tends to be boring and less interesting. There are several factors that cause a lack of attractiveness for students in understanding mathematics learning, among others, teachers still use the usual teaching media / materials such as: rulers, printed books, lks and others. To solve this problem, one of the efforts that can be done is to make teaching materials in the form of e-modules in mathematics learning materials of rectangular flat shapes for seventh grade students of junior high school which are valid and practical with a validity level of 91.26% and a practicality level of 87.35%. In making this e-module, it uses the application *Exe (Elearning XHTML Editor)* which can insert audio, video and images into the e-module which can increase students' attractiveness and understanding in mathematics learning. Therefore, it can be concluded that the e-module using *exe* in mathematics learning is valid and practical. Valid because it fulfills four aspects of validation. Practical because it gets a positive response and helps students understand mathematics, especially the rectangular shape material.

INTRODUCTION

The background in this study is the lack of attractiveness and understanding of students in learning mathematics and teachers still use the usual media / teaching materials. To overcome this problem, the authors make media / teaching materials in the form of attractive e-modules in order to increase the attractiveness and understanding of students in learning mathematics.

The media / teaching materials used are e-modules, e-modules are ready-made modules that can be read on a computer and designed with *software* the necessary, according to [1] "E-Module is a learning tool that contains material, limitations, methods, ways of evaluating that are arranged in an orderly and attractive manner to achieve the desired competencies according to the level of complexity. Compared *software* to other, e-modules are also good to use to increase the participation of students during the learning process, because in this e-module there are various kinds of programs or *software*. These

programs or *software* can be used as media or teaching materials for teachers to increase students' understanding and participation in the learning process, for example, such as *exe (e-learning XHTML editor)*, *3D Pageflip Professional*, *sigil*, *macromedia flash*, *mircrosoft office*, *lectora* and etc. In this case, the author uses an application *exe(e-learning XHTML editor)*.

Exe (e-learning XHTML editor) is an application *open source* that is used to create learning media. According to [2] *Exe (e-learning XHTML editor)* is a free application program (*open source*) that can be developed as based *e-learning* teaching materials and teaching materials that are arranged using this application are arranged hierarchically and systematically covering topics, sections, and a unit that makes it easy for students to learn systematically.

METHOD

Type of research used in this research is development or *Research and Development (R&D)*. According to [3] *Research and Development (R&D)* is a writing

method used to produce certain products and test the effectiveness of these products.

This e-module development writing procedure is a development procedure, according to [4] namely: 1) Potential and problems, 2) Collecting data, 3) Product design, 4) Product manufacturing, 5) Product validation, 6) Product revision, 7) Trial use, 8) The final product. The validation data analysis technique is calculated by the following steps: 1) Giving the criteria answer score based on the Likert scale, 2) Determining the highest score. 3) Determine the score of each validator, 4) Determine the validity value

$$\text{Validation Value} = \frac{\text{Total score obtained}}{\text{Highest score}} \times 100\%$$

5) Provide an assessment of the validity of the criteria according to Purwanto (2012).

90% -100% = very valid

80% -89% = valid

65% -79% = quite valid

55% -64% = less valid

≤54% = very invalid

Practical data analysis technique is calculated by the following formula:

$$\text{Practicality Value} = \frac{\text{Total score obtained}}{\text{Highest score}} \times 100\%$$

then calculate the number of scores according to the indicators by giving practicality assessments with the following criteria according to Purwanto (2012):

86% -100% = very practical

76% -85% = practical

60% -75% = quite practical

≤54% = very impractical.

RESULTS AND DISCUSSION

This research resulted in a product in the form of an e-module in mathematics learning with rectangular flat shape material for seventh grade students of junior high school which was developed through seven stages of development, namely: 1) Identifying potential problems, the problem found is in the mathematics learning process the teacher still uses the media / the usual teaching materials such as: rulers, printed books,

worksheets and others. Some students still do not understand rectangular flat shapes because the attractiveness of learning tends to be boring so that there are still many students who pay less attention to the teacher explaining mathematics learning material, 2) Gathering information, before the teacher starts learning the tools / media used by the teacher still uses a blackboard, a ruler, printed books and worksheets. So that there are still some students who feel bored during the learning process, 3) Product design results: a) Cover page, b) Menu page, c) Material page, d) Video page, e) Audio page, f) Profile page.

Table 1. Validation results from validators 1, 2, and 3

Number	Component	Validator			Number of	Validity Value	Criteria
		1	2	3			
1	Material Substance	12	12	12	36	85.71 %	Valid
2	Visual Communication Display	15	15	15	45	100 %	Very Valid
3	Learning Design	20	20	20	60	95.24 %	Very Valid
4	Utilization of Software	9	8	9	26	78.79 %	Sufficiently Valid
Average					167	91.26 %	Very Valid

Based on table 1, the average value of the validity test is 91.26% and categorized as very valid. This shows that the e-module of mathematics learning is designed "very well", both in terms of the feasibility of material substance, visual communication display, learning design, and aspects of utilization software.

After the validation test, then it was tested on 12 students at SMP Negeri 17 Padang, the trial was carried

out directly on students for 1 day. The implementation of the e-module trial was carried out on February 17, 2021 for class VII students.

After students know how to use the e-module, students are then asked to fill in the practicality sheet provided. Based on the practicality questionnaire given to students, the practicality value was 87.35% with the very practical category. The results of this practicality can be seen in table 2 below:

Table 2. Practicality test results

No	Name	Practicality Assessment Practical		Value	Category
		Highest	score Score Students		
1	Alfredo Raul Ragis	56	43	6.79%	Practical
2	Aurell Natawi Hendri	56	56	100%	Very Practical
3	Dhani Firmansyah	56	56	100%	Very Practical
4	Hidayatul Anshari Lutfi	56	42	5.00%	Practical Enough
5	Hasanul Irfan G	56	47	3.93%	Practical
6	Diamond Permata Sari	56	46	2.14%	Practical
7	Ika Nandika	56	49	87, 50%	Very Practical
8	Don Rafia	56	49	7.50%	Very Practical
9	Alxbra Sandy	56	51	1.07%	Very Practical

10	Latifah	56	49	7.50%	Very Practical
11	Mirza Sumatha	56	52	92.86%	Very Practical
12	A. Xabby Khwan	56	47	3.93%	Practical
Average				87.35%	Very Practical

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research conducted, it can be concluded that this study has produced an e-module in learning mathematics material for quadrilateral students of class VII SMP which is very valid, as evidenced by an average validity of 91.26% in the very valid category. . For practicality, it can be seen from the practicality test which obtained an average value of 87.35% in the very practical category used for class VII junior high school students. The author's suggestions can be used in the learning process as the latest innovation by mathematics educators so that students' abilities increase and students can learn independently, and also for other researchers it is hoped that they can add animation to the e-module so that it can increase the attractiveness of students in learning mathematics.

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