Development of E-Module Using Flip PDF Professional to Improve Economic Learning Outcomes of Class X Social Studies Students of Prayatna College Private High School Medan

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ABSTRACT. This study aims to find out: (1) the feasibility of e-modules using a professional PDF flip for class X social studies students of Prayatna College Private High School Medan; (2) the effectiveness of the e-module using a professional PDF flip to improve the economic learning outcomes of students X social studies private high school Prayatna College Medan. This research is a development research with ADDIE model. The samples for this research were students of class X social studies of Private High School, Prayatna College Medan, class X social studies 1 totaling 35 students and class X social studies 2 totaling 35 students. The results of this research are: (1) e-module using professional PDF flip on economics subjects is feasible to be used for the students based on the validator's assessment with a very decent category; (2) e-module using a professional PDF flip in economics subjects is effectively used for class X students based on the results of the t-Test where the sig value of 2 tailed is 0.000<0.05, then Ho is rejected and Ha is accepted so that there are differences in learning outcomes before and after being treated with the e-module using a professional PDF flip.

Keywords: E-Module Development, Flip PDF Professional, Economic Learning Outcomes

1. Introduction

Education is very important for every individual. With education, various aspects of life are created that develop through the learning process. A teacher is required to choose and use the right learning resources to be given to students in order to support the learning process. One of them is by providing reading resources in the form of teaching materials to students. But reality in schools, there is no provision of adequate teaching materials and is still not innovative so students feel less motivated to learn and trigger low learning outcomes. So it takes an innovation in learning that will trigger to increase student learning outcomes.

One form of teaching material that can be used in the learning process is giving the module electronically or as we know as electronically module (e-module). E-modules or electronic modules are a form of learning material that is systematically arranged and displayed in an electronic format (Rara, 2019). The provision of e-modules to students will support more innovative learning process in line with the opinion of Rindaryanti (2021) which states that with

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electronic modules combined using technology, it can support the on going learning process and better student learning outcomes. According to Khairinal (2021) that the e-module used by teachers is designed to generate active thinking students and can be obtained by all students and can be accessed anytime and anywhere.

One of the software that can be used in the development of e-modules is Flip PDF Professional, where this software is a software that makes e-modules more innovative. E-module using flip PDF professionals is not limited to writing only but can include motion animation, video, and audio that can make it a learning media that looks interesting so that learning will be more interesting (Indah, 2019).

There are several advantages of the professional flip pdf application, namely: (1) Interactive publishing; (2) There are various templates, themes, scenes, backgrounds, and plugins to customize the e-module; (3) E-modules can be supported by providing text and audio; (4) The resulting output or output format is more flexible, such as html, exe, zip, Mac App, mobile version, burn to CD and does not require other supporting applications to be able to access the e-module (Khairinal, 2021).

From several previous studies, some of them according to Seruni (2019) the provision of e-modules using professional flip pdfs has a positive effect on improving student learning outcomes. Sriwahyuni (2019:146), who stated that teaching materials using flip PDF professional were declared feasible and effective to be used in the learning process. Based on this, this research was conducted to develop an e-module using a professional flip pdf to improve student economic learning outcomes.

2. Method

This research is a type of development research and uses the ADDIE development model. The ADDIE model consists of five steps that are: analysis, design, development, implementation, and evaluation. At the analysis step, curriculum analysis, student needs analysis, material analysis and learning module analysis were carried out by conducting interviews. Then at the design step, activities are carried out to design e-modules packaged with professional flip pdf applications. At the development step, e-module validation is carried out based on experts, namely material experts, media experts and learning design experts. The next step of implementation is to test students to see the feasibility of the e-module. And the evaluation step, which is an evaluation of the e-module to the stage of producing a product that is suitable for use in learning.

The research location was carried out at the Prayatna Medan Private High School in the even academic year 2021/2022. The samples in this study were students of class x social studies 1 which amounted to 35 students as an experimental class and x social studies 2 which amounted to 35 students as control class.

To test the feasibility of the e-module that has been developed, namely through the validation results of experts, namely material experts, media experts and learning design experts. Then to test the effectiveness of the e-module, a t-test was used which is an average difference test to find out whether there is a significant difference at the 0.05 significance level with SPSS version 25 software.

The formulated hypothesis are:

Ho : $\mu_1 = \mu_2$ (there is no difference in the average between the classes that are given treatment and not given treatment).

Hal : $\mu_1 \neq \mu_2$ (there is an average difference between the treated and untreated classes).

Decision making Ho is accepted if the significance value is greater than 0.05. The following is the calculation by testing the difference between the two population averages according to Sudjana (2009).

$$t = \frac{\bar{X}1 - \bar{X}2}{s\sqrt{\frac{1}{n1} + \frac{1}{n2}}} \quad (1)$$

Where:
$\bar{x}1$: the average of the experimental class sample
$\bar{x}2$: control class sample mean
S : standard deviation

3. Result And Discussion

Description of Economic E-Module Development Data Using Flip PDF Professional

Analysis Step

In the main ADDIE development mode, namely the analysis stage. At this stage of the analysis, the first step takenby the researcher is to analyze several things to recognize the needs analysis, the material analysis and analyze the student's abilities. This analysis stage is also carried out to find out the initial picture in order to get information about how the economic learning process is carried out at the research site. Then at this stage, researchers conduct interviews with economics teachers regarding the economic learning process carried out to students.

Design Step

The next stage of the ADDIE model is the design stage. At this desalin stage, it includes the creation of an economic e-module using a professional PDF flip. This stage is carried out so that the e-module developed gets maximum results with several preparations, namely:

a) Reading literature sources recognizes the procedure for creating e-modules.
b) Determining the learning objectives of the material to be developed on the e-module.
c) Search and prepare materials needed to compile e-modules such as design, material content, images or videos and relevant sources to be included in the e-module.
d) Preparing an application in making an e-module, namely a flip pdf professional

Figure 1.1 ***Flip PDF Professional App***

e) The form of the working display of making e-modules using a flip pdf professional

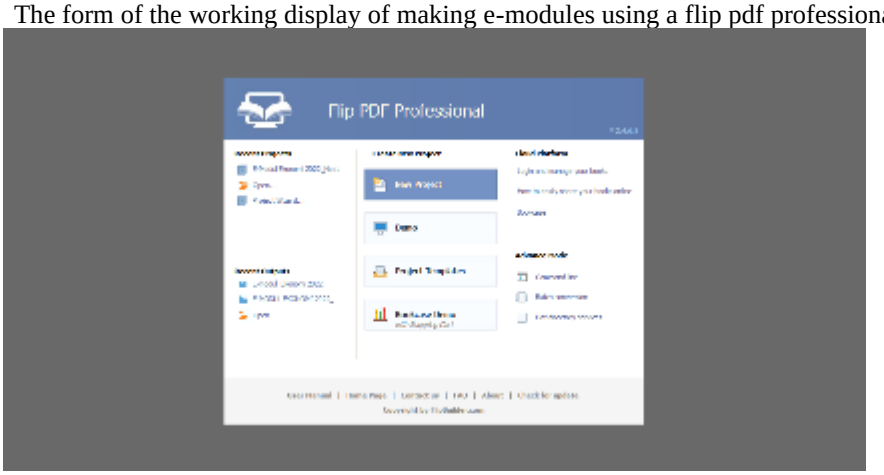

Figure 1.2 ***Flip PDF Professional*** **Start View**

f) Inserting modules that have been created and pre-designed and converted into pdf form

Figure 1.3. E-Module Start Page View with ***Flip PDF Professional***

g) Insert an image recognizing relevant learning by using the edit page menu

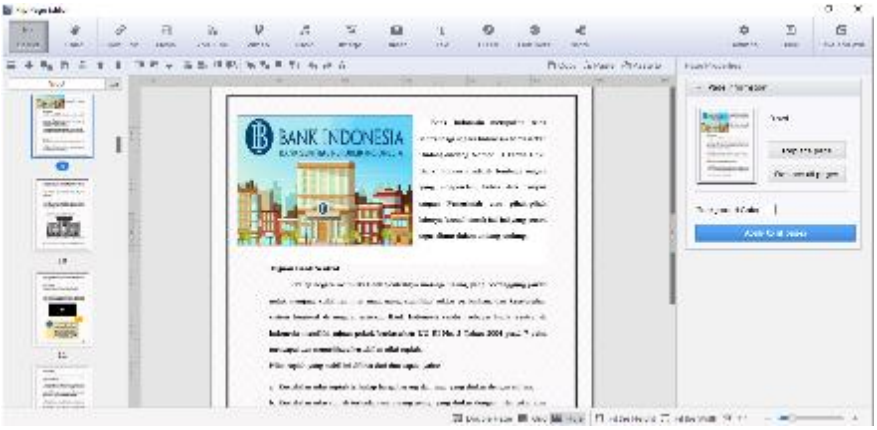

Figure 1.4 Inserting an image on *Flip PDF Professional*

h) Insert videos about relevant learning using the edit page menu.

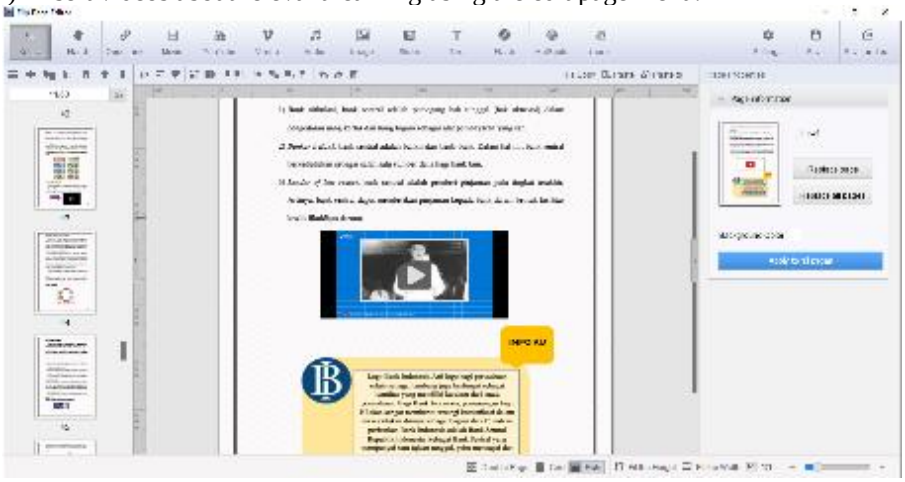

Figure 1.5 Inserting a Learning Video on *Flip PDF Professional*

Development Step

The next stage in the ADDIE model is the development stage. This stage is an advanced stage of the design that has been designed to be a product. Products that have been made must be validated for the product to be suitable for use. Vaidation is carried out by validators, namely regarding material validation, media validation, and design validation. Assessment in the form of suggestions for improvement is a guideline for researchers to carry out the process of improving the economic e-module using a flip pdf professional.

The following is a talmpilan of the economy e-module using a professional PDF flip application on the material of central banks, payment systems and payment instruments:

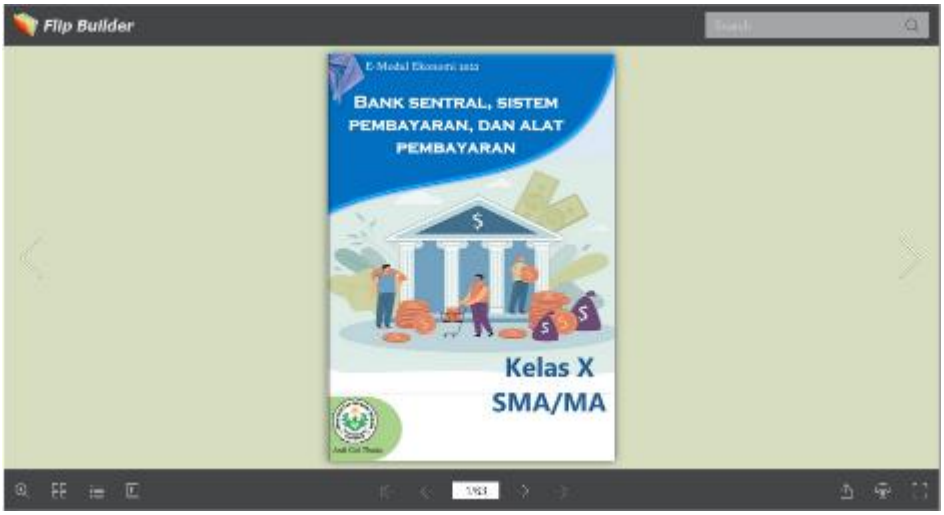

Figure 1.6 Cover View of the E-Module Using *Flip PDF Professional*

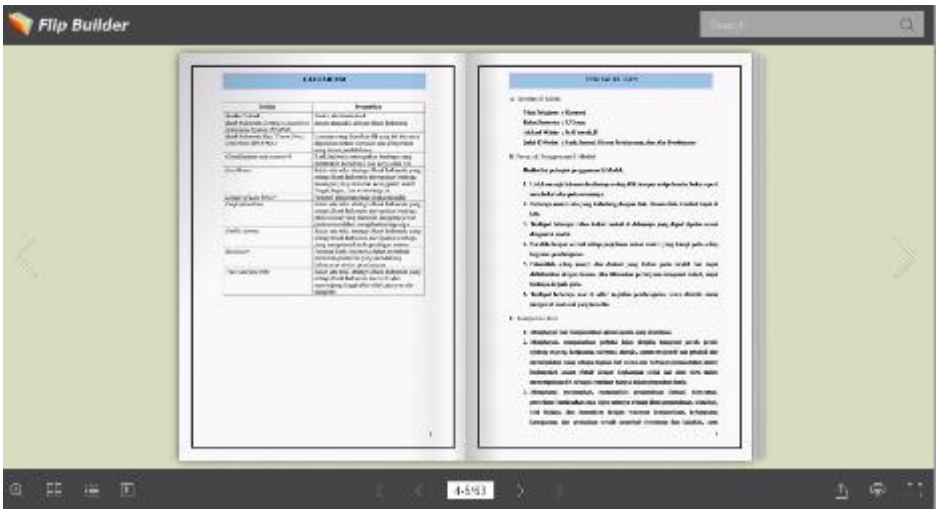

Figure 1.7 E-Module Instructions for Use Page View

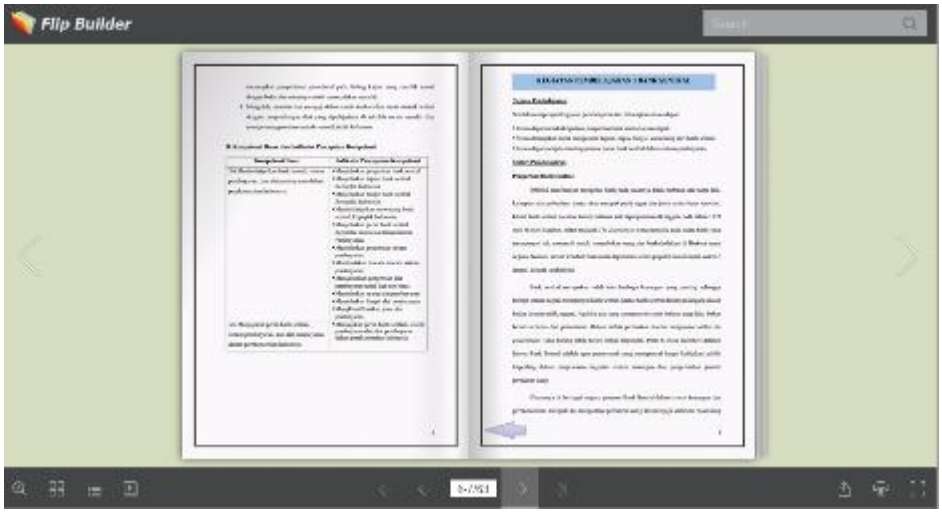

Figure 1.8 Basic Competency Display and Competency Achievement Indicators

Figure 1.9 Page View of E-Module Material Using *Flip PDF Professional*

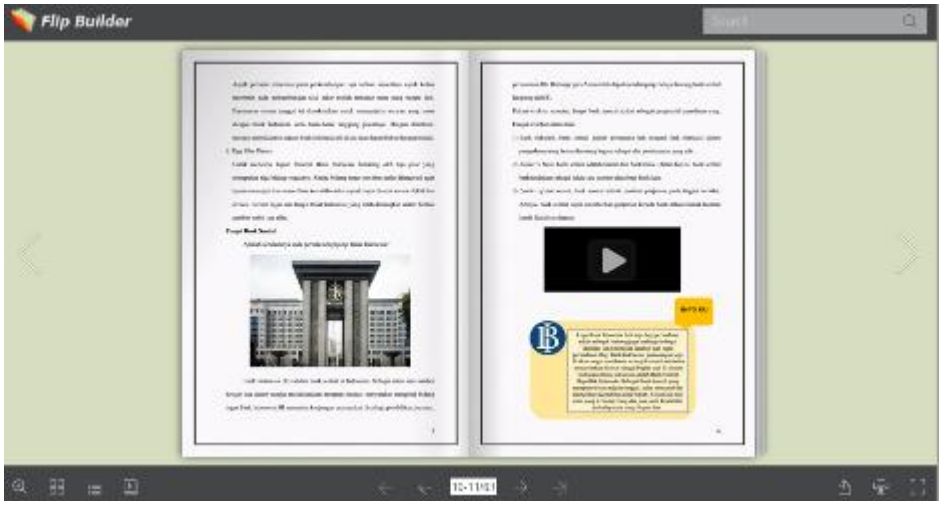

Figure 1.10 E-Module Learning Images and Videos Page View using ***Flip PDF Professional***

Furthermore, the economy E-module using a professional PDF flip is validated by the following materials, media and designs:

a. Expert Validation of Learning Materials

The average result is obtained based on aspects of the suitability of learning objectives, the quality of the material, the presentation of the material content. The average aspects of the material can be seen in table 1.1:

Table 1. 1 Average Aspects of Matter by Material Experts

No.	Media Aspects	Average Score	Criterion
1.	Suitability of learning objectives	4,00	Excellent
2.	Material quality	3,33	Good
3.	Presentation of material content	3,25	Good
Average Score		**3,42**	**Very Valid**
Percentage		**85,41%**	**Very Worthy**

Based on tabe 1.1 material experts assess the economic e-module using a professional PDF flip based on 4 aspects, namely the suitability of learning objectives, the quality of the material, the presentation of the material content. The table shows that the conformity aspect of learning objectives obtained an average score of 4.00 with excellent categories, material quality obtained an average score of 3.33 with good categories, material content presentation obtained an average score of 3.25 with good categories. Overall the assessment given by the material expert stated

that the e-module using flip PDF professional obtained an average score of 3.42 with a percentage of 85.41% with the category very feasible.

b. Learning Media Expert Validation

The average result is obtained based on indicators of media benefits, general appearance, media interactivity, media presentation, media design, media role. The average aspects of the media can be seen in the table:

Table 1.2 Average Media Aspects by Media Experts

No.	Media Aspects	Average Score	Criterion
1.	Media Benefits	3,33	Excellent
2.	General View	4,00	Excellent
3.	Interaktivitas Media	3,00	Good
4.	Media Presentation	3,33	Excellent
5.	Media Design	3,50	Excellent
6.	The Role of the Media	3,33	Excellent
Average Score		**3,33**	**Very Valid**
Percentage		**83,69%**	**Very Worthy**

Based on table 1.2 media experts assess the economic e-module using a professional PDF flip application based on 6 aspects, namely aspects of media benefits, general appearance, media interactivity, media presentation, media design, the role of media. The table shows that the media benefit aspect obtained an average score of 3.33 with excellent categories, general views obtained an average score of 4.00 with excellent categories, media interactivity obtained an average score of 3.00 with good categories, media presentation obtained an average score of 3.33 with excellent categories, media design obtained an average score of 3.50 with excellent categorization, and media roles obtained an average score of 3.00 with good categories. Overall, the assessment given by media experts stated that the economy e-module using flip PDF professional obtained an average score of 3.33 with a percentage of 83.69% with the category very feasible.

c. Learning Design Expert Validation

The average result is obtained based on the aspects of the feasibility of the content, presentation, graphicness. The average design aspects can be seen in the table:

Table 1.3 Average Design Aspects by Design Experts

No.	Media Aspects	Average Score	Criterion
1.	Eligibility of Contents	3,00	Good
2.	Serving	3,27	Very Good
3.	Kegrafikan	3,50	Very Good
Average Score		**3,27**	**Very Valid**
Percentage		**81,67%**	**Very Worthy**

Based on table 1.3 design experts assess the economic e-module using a professional PDF flip based on 3 aspects, namely the feasibility of the content, presentation, graphics. The table shows that the content feasibility aspect obtained an average score of 3.00 with a good category, the presentation obtained an average score of 3.27 with an excellent category, the graphic obtained an average score of 3.50 with an excellent category. Overall the assessment given by the design expert stated that the economy e-module using the professional PDF flip obtained an average score of 3.27 with a percentage of 81.67% with the category very feasible.

Implementation step

For the implementation step, the e-module that has been developed is given to students during the learning process at school. At this stage, tests are also conducted on students to determine the effectiveness of the e-module using Flip PDF Professional. where the learning outcomes test is carried out by giving tests to students in the form of 30 multiple choice questions. The following are the results of student learning with the economics e-module using a flip PDF professional in X social studies 1:

Tabel 1.4 Learning Outcomes of Class X Social Studies 1 Economics Subject Q.A 2021/2022

Value	Category	Prayatna College Private High School Medan	
		Frequency	Percentage
90-100	Very Good	18	51,43%
80-89	Good	14	40 %
70-79	Enough	3	8,57%
< 69	Less	0	0
Sum		35	100%

Based on the data in the table above, student learning outcomes with economic e-modules using a professional PDF flip in class X IPS 1 Prayatna Medan Private High School are already 100% above KKM, where as many as 51.43% of learning outcomes with very reverse categories, 40% with good categories, and 8.57% with sufficient categories.

Evaluation Step

The last stage in the ADDIE model is the evaluation stage. This evaluation stage is carried out at each stage of the development of the e-module by the researcher. Evaluation is carried out to get responses and inputs and then revisions are made to the economic e-module developed. In the previous implementation stage, an evaluation was carried out related to the results of the e-module trial developed. The evaluation stage is carried out to find out the response and learning outcomes of students after using the economics e-module developed using a professional PDF flip application which aims to find out the practicality and effectiveness value of the economic e-module.

Hypothesis Test

The hypothesis test in this study was carried out using an average difference test or t test (independent sample t test) because the data used was homogeneous and normally distributed.

The t test is an average difference test used to determine whether there is a significant average difference between the experimental class and the control class with a significance level of 0.05 and is carried out with the help of the SPSS version 25 datal processor.

The formulated hypothesis are:
Ho : $\mu_1 = \mu_2$ (there is no difference in the average between the classes that are given treatment and not given treatment).
Hal : $\mu_1 \neq \mu_2$ (there is an average difference between the treated and untreated classes).

In making the decision, namely Ho is accepted if the significance value is more than 0.05.

Table 1.5 Experimental and Control Class t-Test Results

		Levene's Test for Equallity of Valrialnces						
		F	Sig.	T	Df	Sig. (2-taliled)	Mealn Difference	Std. Error Difference
Learning Outcomes Student	Equall Valrialnces alssumed	.099	.754	9.429	68	.000	16.429	1.742
	Equall Valrialnces not alssumed			9.429	67.904	.000	16.429	1.742

Based on the table above, the results were obtained that the Sig.2-taliled value of 0.000<0.05 with a statistical test using the t test showed a calculation of 9.429 > ttabel 1.667 with a α of 0.05 and df = 68 that can be concluded that Ho was rejected and Ha accepted, namely that there were differences in learning outcomes before and after being treated using the economics e-module with the help of a professional PDF flip application. Therefore, it can be said that the economic e-module developed is effectively used in learning activities in the classroom.

4. Conclusions And Suggestions

Conclusions

Based on the results of the analysis and discussion in this study, several conclusions are put forward as follows:

1. Based on the validation carried out by validators and based on trials to students, it can be concluded that the e-module using a professional pdf flip is suitable for use in the economic learning process.
2. Based on the hypothesis t-test that has been carried out, the results were obtained that the e-module using a professional pdf flip is effectively used to improve student economic learning outcomes.

Suggestions

1. The application of this research product in the form of an economic e-module using a professional PDF flip is expected to be used as a source to be used as a reference for relevant research.

2. This e-module using a professional pdf flip developed is expected to be used in the learning process in other schools.
3. for subsequent researchers who wish to conduct relevant research, it is expected to include other factors and for more representative samples.

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