



## Development of E-Modules With Problem-Based Learning (PBL) to Increase Economic Learning Outcomes

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Article Info	Abstract
<p>Article History :</p> <p>Received December 2021</p> <p>Accepted March 2022</p> <p>Published June 2022</p> <p>Keywords:</p> <p><i>E-Module, Kvisoft Flipbook Maker, Problem Based Learning, and Learning Outcomes</i></p>	<p>The aim is to find out how valid, practical, and effective e-module development with the Kvisoft Flipbook Maker application is used in economics learning to improve learning outcomes for high school students. This development research resulted in a product in the form of e-module teaching materials with the Kvisoft Flipbook Maker application, which was developed with a 4-D model into 4 stages, namely defining, designing, developing, and disseminating. Based on the validation by the validator used for the very good e-module and the reliability of all validators in the reliable category, so that the e-module is feasible to use in learning. The form of innovation in learning resources and learning approaches gives a positive response to students, where the results of student responses to e-modules are obtained from all aspects of economic e-modules with the Kvisoft Flipbook Maker application very well. Different learning outcomes between the control class and the experimental class, meaning that the e-module product proved to be effectively applied in economics learning, where the increase in student learning outcomes in the experimental class in the learning outcome was in the medium category.</p>

## INTRODUCTION

Education is a process of changing one's knowledge, attitudes, and behavior through the process of learning efforts. Education is a means to develop knowledge, through education can form a nation that excels in knowledge, attitudes, and skills. Efforts to improve the quality of education are continuously carried out, both conventionally and innovatively. Improving the quality of learning that can be done in the form of changes in various components of the education system such as curriculum, learning strategies, learning aids, teaching materials, and so on. The quality of education through learning is important, where learning is a process of interaction between students and teachers and learning resources in a learning environment.

The learning process in educational units is carried out interactively, inspiring, fun, and motivating for students, so that students participate actively, as well as the process of providing sufficient space for the initiative, creativity, and independence following the talents, interests, and physical and psychological development of students. According to (Anggraenia & Dewi, 2021) Bruner reveals the learning theory that learning must be through the active involvement of students with concepts and principles in solving problems and the teacher serves as a motivator to gain experience that allows students to find and solve the problems studied. Meanwhile, according to (Farihatun & Rusdarti, 2019) Learning is a series of processes from individual experiences in interaction with their environment related to cognitive, affective, and psychomotor activities of body and soul to obtain a change in behavior and learning to strengthen behavior through experience. The implementation of the 2013 Curriculum in the subject of economics emphasizes active students and the use of a scientific approach. However, the difficulty faced by most

students is in interpreting various concepts in economics because they are required to be able to interpret the economic knowledge appropriately and not vaguely, this requires a learning process with maximum quality so that learning objectives can be maximally achieved.

Based on the results of interviews with economics teachers, on Thursday, September 24, 2020, at SMA Negeri 2 Mesuji, one of the economics teachers stated "Economics lessons conducted at SMA Negeri 2 Mesuji use economic textbooks, worksheets and learning resources have not fully utilized information technology. Learning is done with an approach in the form of a lecture method ". Many students have economics textbooks, that are loaned by the school. However, 56.7% of students consider textbooks to be less helpful in understanding the material being taught and students are less than optimal in utilizing existing textbooks where 70.1% answered that they do not use or read textbooks outside of class hours, meaning that students are less interested in available learning resources. There are and students who are less interested in reading existing textbooks and only use books during learning and when there are instructions from the teacher. And as many as 92.5% of students need more innovative learning resources. It is still not optimal in the use of teaching materials provided by the teacher, this will have a less than the optimal impact on the quality of learning which will have an impact on student learning outcomes.

The value of the daily test results of economic subjects at SMA Negeri 2 Mesuji, information can be seen that the results of the daily test scores of students are 60% who have not achieved, and students who have completed the achieved are only 40%, thus there is still a high number of students who have not completed achieved, this means that economic learning is still not optimal. Student learning outcomes can be seen in the table below:

**Table 1. Economics Learning Outcomes of SMAN 2 Mesuji**

Class	Total Students	Achieved	Percentage	Not Achieved	Percentage
X IPS 1	34	21	62 %	13	38%
X IPS 2	33	23	70 %	10	30 %
XI IPS 1	33	19	58 %	14	42 %
XI IPS 2	32	17	53 %	15	47 %
XII IPS 1	34	23	68 %	11	32 %
XII IPS 2	33	17	52 %	16	48 %
Jumlah	199	120	60 %	79	40 %

Source : SMAN 2 Mesuji (2021)

According to (Kurniawan et al., 2017) explaining external factors that affect learning outcomes are in the form of teaching methods, learning resources, and social environment. external factors in the form of teaching methods and learning media and social environment, if it refers to the existing facts regarding the low learning outcomes of students, more innovative learning is needed so that the learning process is more optimal. Learning innovations that can be carried out by teachers include the creation of innovative learning resources and a more innovative approach, innovations in learning resources need to be carried out by teachers in order to make students more interested and make more use of learning resources in support of improving student learning outcomes, and one one learning media innovation using technology in the form of electronic teaching materials by developing e-modules, according to (Laili, 2019) electronic modules are a form of presenting teaching materials, methods, and ways of evaluating systematically arranged in an electronic format, electronic modules which is used with the Kvisoft Flipbook Maker application

Electronic modules have many advantages, including being able to present modules more attractively, it is hoped that with the use of electronic modules, students can more easily accept the material presented by the teacher and students can study independently at school and outside of school so that it will improve the quality of learning and learning outcomes students. Learning innovation can also be done with a Problem Based Learning (PBL) approach according to (Cordeanita et al.,

2019) The PBL learning model is a learning model that utilizes thinking skills in cognitive processes that involve mental processes that are faced with the complexity of a problem that exists in the real world,, as well as to gain knowledge through the use of real-world problems, this will encourage students to be more able to be more active because in learning, while (Hakim et al., 2016) Problem-Based Learning (PBL) is a method in the student-oriented learning process that involves learning through solutions sourced from a real problem context and student-focused approach that encourages reflection, skills in communication and collaboration, and requires reflection from multiple perspectives.

Problem-Based Learning (PBL)-based learning encourages students to be able to be more active because in learning Learning with Problem Based Learning (PBL) will encourage students to be accustomed to facing various problems and feel motivated to solve problems, not only related to classroom learning but also face problems that exist in real everyday life, thus the quality of learning outcomes will increase. This is following the results of previous research conducted by (Cordeanita et al., 2019), based on the results of his research, learning with the Problem Based Learning (PBL) learning model assisted by interactive videos is more effectively applied in learning activities. Another study by (Dewi et al., 2019) shows that the learning outcomes of groups of students who use technology in the form of e-modules, learning outcomes are higher than groups of students who are taught using economics textbooks.

The results of different studies in learning research using technology such as what was done by (Khoirunnisa et al., 2018) learning that uses technology in the form of e learning shows that there is no significant effect on student learning outcomes. Another research conducted by (Lee et al., 2016) The results show that technology with technology is not effective for students in learning physics.

Some of the research results above are less consistent in their findings in learning using technology, therefore this researcher tries to use the Kvisoft Flipbook Maker e-module, and innovate through Problem Based Learning (PBL)-based learning. The software tools used as teaching materials are Kvisoft Flipbook Maker which makes the display of books or teaching materials into digital electronic books, Kvisoft Flipbook Maker software is a means of converting PDF documents into digital publication pages that are displayed as varied, innovative, and efficient magazines. It is hoped that the use of this media can help students learn e-modules to learn independently. In addition, the use of learning media will be able to create learning variations so that it does not cause boredom to students.

The Kvisoft Flipbook Maker application was chosen in this study because it has several advantages including being easier and more attractive for students. After all, it has an image and video features, and audio that can later be filled with material that can make it easier for students to understand the material being taught. easy to operate by not requiring an application to open the learning media that has been created, the use of Ubisoft flipbook maker media can be accessed offline so that it is easy to use.

That during the COVID-19 pandemic, learning must be done online, so teachers must have an innovative breakthrough, innovative breakthroughs can be made through innovation in learning resources and learning approaches, so researchers are interested in studying the development of e-modules with the Kvisoft Application. Flipbook Maker with a problem-based learning approach to know how to develop e-modules with the valid, practical, and effective Kvisoft Flipbook Maker application used in

economics learning to improve learning outcomes for high school students.

## RESEARCH METHODS

The design of this research is Research and Development (R&D), the design of this development research was adapted from the development of the Thiagarajan model which is better known as the 4-D model. Thiagarajan explained the development of the 4-D model into 4 stages, namely define, design, develop, and disseminate. The subjects in this study were students of SMA Negeri 2 Mesuji class X IPS which consisted of two classes, namely class X IPS 1 and X IPS 2. Used in this study, class X IPS 1 was used for the experimental group and class X IPS 2 was used for the control group.

The steps taken to produce a product include: 1) define, at this stage, the analysis of the potential and problems of students is carried out by observing the learning process in class, the results of these observations will be the basis for developing a new teaching material to improve results. study. 2) design. Some things are done at the design stage, namely making a map of the needs of teaching materials, determining the structure of teaching materials, compiling research instruments, and validating research instruments by validators. 3) Development, namely the manufacture of electronic modules, and validation of teaching materials by material experts and media experts. 4) Product Trial, In this product trial phase, an e-module that has been improved upon suggestions and input by the validator is applied, so the e-module is used in a real situation, namely in the classroom. After the product trial results are successful, the e-module is then evaluated whether the module can be declared effective in improving learning outcomes.

The effectiveness of electronic modules (e-modules) with the Kvisoft Flipbook Maker application on students' economic learning outcomes using a different test. The indicator of success in this study is the difference in student learning outcomes between the control group and the experimental group after and after using the e-module. A normalized gain test (N-Gain) was conducted to determine the increase in student

learning outcomes after treatment. N-Gain aims to avoid errors in interpreting the gain of a student.

## RESULTS AND DISCUSSION

This research is motivated by the potential and need to develop teaching materials and approaches used in learning, this is based on the results of observations and interviews with economics teachers, the results of observations that there are problems faced by students, namely 1) learning has not fully utilized information technology as a medium and source study. 2) The use of teaching materials in the form of worksheets and textbooks in economics learning is still a lot of students who are less interested in the teaching materials that have been provided. 3) A lot is enough for that not student textbooks to help students understand the material being taught. 4) Students are not optimal in using existing textbooks and students only use books during learning and when there are instructions from the teacher. 5) The number of students who have not completed the KKM is still high. 6) The teacher's learning approach in its implementation is less varied so that it has an impact on the less optimal student learning outcomes.

From the problems described above, researchers see the potential need for developing learning resources where teachers do not have to be the main learning source, in this case teachers need various innovations so that the learning process is always relevant and learning innovations that can be carried out by teachers include other innovative materials. and learning with Problem Based Learning (PBL) approach. This study composes an electronic module using the Kvisoft Flipbook Maker application. The material chosen in this development module is management material that is taught to class X students who are in the economics field in the even semester. Aspects that are considered by researchers in developing teaching materials on media are screen design, Ease, Consistency, Format, Usability, while the material consists of aspects of conformity of content, language, presentation, graphics.

The development stage, validation of the validation process by experts and economists to determine the economic e-module using the Kvisoft Flipbook Maker application which will be tested, with the following validation results:

**Table 3. Validation By Lecturer**

No	Aspect	Total	Score	Category
Media	1 Screen Design	7.3	3.67	Very Worthy
	2 Convenience	4	4	Very Worthy
	3 Consistency	11	3,67	Very Worthy
	4 Format	7,7	3,83	Very Worthy
	5 Benefits	11,7	3,89	Very Worthy
Theory	6 Content Eligibility	12	4	Very Worthy
	7 Language	11	3,67	Very Worthy
	8 Serving	15	3,75	Very Worthy
	9 Graphic	11,7	3,89	Very Worthy
Total score		34.36	3.82	Very Worthy

Source: processed primary data (2021)

Based on the validation results of several lecturers and teachers, the e-module developed in this study is feasible to use, the data analysis of the table above is the result of validation carried out by expert lecturers on e-modules with the Kvisoft

Flipbook Maker application by getting an overall score of 3.82. it was stated that the entire module received an assessment with very feasible criteria for use in a lesson.

**Table 4. Validation By Teacher**

No	Aspect	Total	Score	Category
Media	1 screen design	8	4	Very Worthy
	2 Convenience	4	4	Very Worthy
	3 Consistency	11	3,67	Very Worthy
	4 Format	8	4	Very Worthy
	5 Benefits	12	4	Very Worthy
	6 Content Eligibility	12	4	Very Worthy
	7 language	11	3,67	Very Worthy
Theory	8 Serving	16	4	Very Worthy
	9 Graphic	12	4	Very Worthy
	Total score	35.33	3.93	Very Worthy

Source: processed primary data (2021)

The evaluation of e-modules conducted by economics teachers on e-modules with the Kvisoft Flipbook Maker application scored an overall aspect score of 3.93. It can be stated that the entire module received an assessment with very decent criteria. the

total score of the overall validation aspect of phase II by lecturers and teachers on the e-modules that will be used in learning obtained a score of 3.87 with this validation phase II of the e-modules obtaining a very feasible category.

**Table 5. E-Module Reliability**

No	Aspect	Score		Average Score	Reliability
		Lecturer	Teacher		
1	Screen Design	7.3	8	7,65	95.42%
2	Convenience	4	4	4	100%
3	Consistency	11	11	11	100%
4	Format	7,7	8	7,85	98.09%
5	Benefits	11,7	12	11,85	98.73%
6	Content Eligibility	12	12	12	100%
7	Language	11	11	11	100%
8	Serving	15	16	15,5	96.77%
9	Graphic	11,7	12	11,85	98.73%
Total Score		34.36	35.33	34.845	98.61%

Source: processed primary data (2021)

The reliability obtained from all aspects assessed for the economic e-module with the Kvisoft Flipbook Maker application is 98.61%. Based on the percentage agreement, it is stated that the data obtained is reliable because it is above 75%. From the explanation above, it can be concluded that the electronic module with the Kvisoft Flipbook Maker application can be used as an alternative teaching resource to support the economic learning process in

schools. This module is suitable for use as a source of management learning in the classroom as well as independent learning.

After the e-module passes the validation test stage, the e-module is implemented in learning, at the end of the lesson a questionnaire is given and data on the results of student responses to the economic e-module are obtained from a questionnaire sheet answered by 33 students. The

results of students responses to the economic e-module in the trial there are 3 aspects which are shown in the following table:

**Table 6. Student Response**

No	Aspect	Score	Percentage	Category
1	Convenience	337	85.10%	Good
2	Attractiveness	352	88.89%	Very good
3	Efficiency	345	87.12%	Very good
Total score		1034	87.04%	Very good

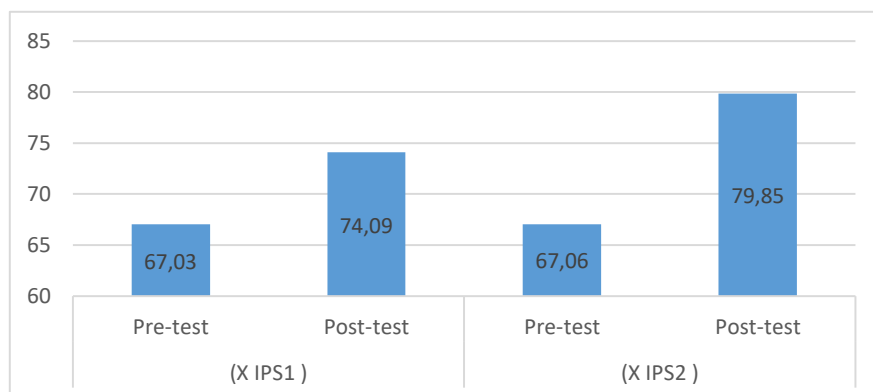
Source: processed primary data (2021)

The results of student responses to the economic e-module in the trial there are 4 aspects shown in Table 5 student assessments of the e-module on the ease of use aspect obtained a score of 85.10% in the good category, in the attractiveness aspect it scored 88.89%, in the efficiency aspect a score of 87.12% in the very good category, the results of student responses obtained from the overall economic aspect of the e-module is 87.04% in the very good category.

Very good response by students because the electronic module has many advantages, including being able to present the module more attractively, it can be seen that the highest percentage score of student responses is in the attractiveness aspect. delivered by teachers and students can learn independently at school and outside school. In line with the results of this study with Bruner's theory of cognitive psychology where he emphasizes that teachers must make every student participate

actively, their motivation and interests need to be increased, then they need to be guided to achieve certain goals (Sutatro, 2017) with a very good response, of course, each student will increase their active participation, motivation, and interest in learning will increase. This is in line with research conducted by (Budiarti et al., 2016) which states that e-modules are considered the most effective for attracting student interest in learning and students who use e-modules can study anywhere and anytime. A similar study was conducted by (Putra et al., 2017) in his research on the development of e-modules in learning which received student responses included in the positive category.

Learning outcomes were obtained from the results of the answers when working on the pre-test questions and the post-test scores obtained from the results of the students' answers. The learning outcomes data for the implementation phase are presented in the following figure:



**Picture 1. Student Learning Outcomes**

Based on the learning outcomes in picture 1 in the control class, the mean value of the pre-test was

67.03 and the post-test was 74.09 from 34 students of class X IPS 1 SMA Negeri 2 Mesuji. In the

experimental class, the mean pre-test score was 67.06 and the post-test was 79.85 from 33 students of class X Social Sciences 2 SMA Negeri 2 Mesuji.

The effectiveness of electronic modules (e-modules) with the Kvisoft Flipbook Maker application on student economic learning outcomes using the Independent Samples Test. The indicator of success in this study is the difference in

student learning outcomes between the control group and the experimental group on post-test scores. The analysis with Independent Samples Test using SPSS 21 is as follows:

Tabel 7. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Hasil Belajar	Equal variances assumed	3.267	.075	-3.657	65	.001	-5.76025	1.57523		-8.90621	-2.61429
	Equal variances not assumed			-3.646	61.749	.001	-5.76025	1.58001		-8.91890	-2.60160

Source: Processed Primary Data (2021)

The effectiveness of e-modules with the Kvisoft Flipbook Maker application on student economic learning outcomes using the Independent Samples Test. In the Independent Samples Test different test in table 6, the results of the sig value of  $0.001 < 0.05$ , it can be concluded that the research data has different learning outcomes between the control class and the experimental class, meaning that the e-module product developed with the Kvisoft Flipbook Maker application is proven effectively applied in economics learning. The normalized gain test (N-Gain) was carried out to determine the increase in learning outcomes of students in the experimental class, namely X IPS 2 after treatment, from the calculation results obtained an N-Gain score to see the increase in student learning outcomes in the experimental class (X IPS 2) at pre-test and post-test learning outcomes obtained a score of 0.388 in the medium category.

The difference and improvement in learning outcomes in the experimental class is the result of an innovation in learning resources using technology that makes students more interested and makes more use of learning resources to support improving

student learning outcomes, encouraging students to be able to be more active. According to (Putra et al., 2017) Bruner states that learning must be through the active involvement of students with concepts and principles in solving problems and the teacher serves as a motivator to gain experience that allows students to find and solve problems being studied, in learning with Problem Based Learning encourages students will get used to facing various problems and feel motivated to solve problems, provide more communication space so that the quality of learning is maximized and has a real impact on student learning outcomes achieved.

The results of this study are in line with the research conducted by (Zaka & Suprptono, 2020) it can be concluded that the use of the developed e-module is proven to be suitable for use for learning, and the e-module is effectively used in learning by improving student learning outcomes. Another study by (Zaka & Suprptono, 2020) Based on the results of the study, it can be concluded that the problem-based learning model has an effect on and contributes to improving student learning outcomes and science process skills.



Another study by (Dewi et al., 2019) shows that the learning outcomes of groups of students who use technology in the form of e-modules, learning outcomes are higher than groups of students who are taught using economics textbooks

## CONCLUSION

Based on research on the development of e-modules with the Kvisoft Flipbook Maker application in economic learning to improve student learning outcomes, it was concluded that this development research resulted in products in the form of e-module teaching materials with the Kvisoft Flipbook Maker application. This was developed with a 4-D model into 4 stages. namely defining, designing, developing, and disseminating.

Based on the results of the validation by the validator, the feasibility of the e-module is very good and the average reliability of all validators is in a reliable category so that the e-module is feasible to use in learning. forms of innovation in learning resources and learning approaches provide a positive response to students, where the results of student responses to e-modules obtained from all aspects of economic e-modules with the Kvisoft Flipbook Maker application are very good.

Different learning outcomes between the control class and the experimental class, meaning that the e-module product has been proven to be effectively applied in economics learning, where the increase in learning outcomes of students in the experimental class on learning outcomes obtained a score of in the medium category.

The Kvisoft Flipbook Maker application was chosen in this study because it has several advantages including being easier and more attractive for students. After all, it has an image and video features, and audio that can later be filled with material that can make it easier for students to understand the material being taught. easy to operate by not requiring an application to open the learning media that has been created, the use of the kvisoft flipbook maker media can be accessed anywhere and quickly so that it is easy to use and

has been proven to have an impact on improving learning outcomes

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