

The Effect of Using Learning Modules on Student Learning Outcomes

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ABSTRACT: The purpose of this study is to find out the effect of epub-based learning modules on the learning outcomes of students in macroeconomics courses of the teacher training of Jambi University and faculty of education, economic education. This type of study is parallel convergent mixing. The sample of this study is 105 students of the Faculty of Teacher Education and Education, University of Jambi. Questionnaires and multiple-choice questions were used as working tools. The results showed that the use of epub-based modules affected the academic performance of the 2020/2021 students of Jambi University Teacher Training and Faculty of Education in macroeconomic subjects.

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INTRODUCTION

Technological progress in this century has been very rapid. Advanced technology affects all aspects of human life, from politics, economics, law, culture, art and even the world of education. Technological developments provide innovations that can facilitate human work. One of the most influential technological advances is information and communication technology. The development of information and communication technology also affects the world of education (Simamora et.al, 2017; Joneska et.al, 2016). Therefore, in terms of preparing the millennial generation who are ready for technology, very high skills and competencies and a more straightforward mastery of conceptual theories are needed (Tanti et. al 2020; Nilasari et.al, 2016). Education is an attempt to nurture and develop a person's personality both mentally and physically (Syahrial et.al, 2019; Nilasari et.al, 2016). Education is an effort to gain knowledge, skills, and good habits in everyday life (Asrial et.al, 2020). The essence of education is substantially a normative effort to develop human nature through the basic concept of education, namely the intrinsic value which is the basis of education in maintaining aspects related to changes in behavior and moral improvement of students.

In order to create an appropriate educational atmosphere that can support in the process of teaching and learning activities, a management strategy and the use of learning support and appropriate learning materials are needed. One of them is the choice of learning model and contextual learning material. (Darmaji et.al, 2019; Tanti et.al, 2020). Education can improve human resources because education is basically learning that develops cognitive and attitudinal skills of students (Syahrial et.al, 2019; Putra & Wiza, 2019). The aim of the study is to

develop students' potential for creative and critical thinking, which can be achieved through the learning process by providing students with experiences (Susanti et.al, 2020). Learning materials for contextual learning are learning materials that enable students to understand the content of the presented material. Good study materials are study materials that allow students to understand the subject and can improve students' learning outcomes and help solve, offer solutions to problems that students encounter in their daily lives. One of the learning materials often used in learning is a module. (Darmaji et.al, 2020; Syahrial et.al, 2020; Maison et.al, 2019; Asrial et.al, 2019).

A study module is a study material that teachers usually use in teaching and learning. The advantage of the module is that students have the opportunity to practice independent learning, learning becomes more interesting because it can be learned outside the classroom and outside the class, the opportunity to express learning methods that correspond to their abilities and interests, the opportunity to test their skills by doing the exercises provided in the module, to be able to teach oneself, develop the student's ability to communicate directly with the environment and learning resources (Setiawati, 2015). Modules are part of a comprehensive and systematically packaged set of learning materials that contain a series of learning experiences designed and designed to help students achieve specific learning goals. (Hafsah, et.al, 2016). The material of educational materials used in teaching and learning activities is limited, therefore, one day of educational activities, when the lecturer learns through the lecture method and on his own tasks with the help of student task sheets prepared by the teacher himself, is not enough. The use of worksheets also makes it difficult for students to answer them. Likewise with other levels of education, especially at the tertiary level, which require various aspects of empowerment. Because in the demand for Educator Development in the 21st Century which requires broad skills related to knowledge, for example academic knowledge, pedagogic, social and cultural mastery, besides that, critical thinking skills are needed that are able to respond to every development and be able to alleviate problems (Setiawati, 2015; Hafsah, et.al, 2016).

If we talk about the content in scientific and technological progress, it is felt that it has grown very broadly. Although the need for physical learning materials such as books has been marginalized by the development of easy access to digital books, the use of learning materials in the form of books still exists. Now, the development of books that were in physical paper form until now is gradually abandoned due to the use of digital conversion, which is the trendy term Digital Book (Daryanto, 2013; Mawarni & Muhtadi, 2017; Knowles, 2015; Syahrial et.al, 2019; Muga et.al, 2017. Other things are accelerated by the ease of use of information, which is easier when distributing book information, which is cost-effective and access is faster. The advancement of digitization has made it easier to create more portable "hackless" or "virtual" book teaching materials when needs. Digital books have made it easier for students because they have been equipped with the types of teaching materials in the form of soft files from hard copies of books, moreover, they have been equipped with various content of instructional videos and animations as well as audio that will make readers learn them (Iden & Eikebrokk, 2014). The shift from the use of physical books into digital books that has been developing so far will affect the visitation of book visits in libraries (Gunawan & Palupi, 2015).

The use of a digital book enhances the simplicity of the teaching and learning process for pedagogues, which is also evidenced by the presence of an open access digital book format that is easily accessible in a fast and comprehensive way. The ability to understand the use of limited data shapes are confusing the acquisition of more specific information, both in the user's application

development. Therefore, a more innovative solution is needed in this case in considering all available content and is able to support all formats through the use of Electronic Publishing 3.0 which makes it easier to load audio and visualization data devices into an animated form in the form of a digital book. The use of electronic publishing is the development of a digital book format was standardized into a standardized format by the International Digital Publishing Forum (IDPF) (Tanti et.al, 2020). Electronic publishing will play the war as a Main Feature in Ebook as an open access book which is compatible in various device formats such as html5, css, xhtml, xml extensions. A selection of electronic publications is expected to be a pilot for the use of other devices that are more user friendly and portable for users who have previously used computer devices such as AZARDI, Caliber, Firefox plugins, google chrome plugins, as well as use on IOS and Android platforms such as FBReader, Ideal Reader, ireader and various other types of devices are used. Furthermore, so that the information can be integrated in a more flexible and accessible manner, the ePUB format Digibook is designed to be as attractive as possible with the help of sigil software (Darmaji et.al, 2020).

Learning outcomes have three domains, one of which is the cognitive domain (Asrial et.al, 2020). The outcomes of financial education are the skills acquired after completing the learning activities. Learning is the process by which someone attempts to induce a relatively permanent change in behavior (Darmaji et.al, 2019). In economic learning or learning, learning objectives are usually set by the lecturer, in learning, successful students are those who manage to achieve learning or teaching objectives. Learning outcomes such as changes in student behavior, viewed as cognitive, affective and psychomotor, after students have completed the learning (Maison et al, 2020). Learning outcomes play an important role in learning. Learning outcomes can be also provide teachers with information about students' progress toward learning goals through learning activities.

This is the reason researchers use modules as a reference for supporting resources in learning tailored to student needs. Modules are essentially learning materials organized systematically according to students' knowledge level and age in easy-to-understand language so that they can learn independently with minimal or no teacher guidance. Students can measure their mastery of the material covered in each unit of the module, so that when we master it, they can move on to the next module (Darmaji et.al, 2019).

Based on this explanation, it is necessary to have a process of change to the learning process that can motivate students are active during learning process. The update recommended by researchers is the use of contextual learning modules. By implementing this contextual learning module is expected to be able to improve student learning outcomes.

METHOD

This study is a type of parallel convergent mixed method study. A mixed method data collection strategy is a strategy specifically designed to combine elements of a single method. (Axinn & Pearce, 2006). Basically, a mixed data collection strategy is a strategy that combines two methodological techniques (Fisher, 2017). In this study, researchers combined qualitative and quantitative research. The data collection tool used the method of triangulation. The triangulation method compares information gathered through interviews, observations and documentation (Creswell, 2012).

For quantitative data, it was received from a response questionnaire to the given learning media. This response questionnaire consists of 25 statements using a Likert scale. The statement consists of positive and negative statements. A four-point Likert scale was used in the questionnaire (Creswell, 2012). For a positive statement consisting of VnG = Very not good with a score of 1, NT = Not Good with a score of 2, G = Good with a score of 3, VG = Very Good with a score of 4. And for a negative statement consisting of a score of VnG = Very not good with a score of 4, NT = Not Good with a score of 3, G = Good with a score of 2, VG = Very Good with a score of 1. For the response questionnaire range can be seen in the following table:

Table 1. Response questionnaire scale categories

Interval	Category
25-43.75	Very not good
43.76-62.5	Not Good
62.6-81.25	Good
81.26-100	Very Good

At the same time, multiple choice questions consisting of 20 points were used in the learning outcomes. The learning outcomes are presented in the following table.:

Table 2. Categories of learning outcomes

Interval	Category
0-20	Very not good
20.1-40	Not Good
40.1-60	Passble
60.1-80	Good
80.1-100	Very Good

In the interviews, semi-structured interviews were used, which, when carried out, gave more freedom for open observation of problems, where the informants were asked for their opinion and ideas about the implementation of the observation (Cramer, 2003). Researchers use this type of unstructured observation because researchers are free to explore, note what is interesting, analyze, and then draw conclusions. Also gathering information in the form of documents in the form of interviews and observational evidence in the form of photographs of researchers and subjects.

This study was conducted as part of the Economic Education Program 2020/2021 at the University of Jambi. The population of this study was 105 people, of which 34 were students of class A, 35 students of class b and 35 students of class c. Quantitative data analysis technique is

Anova test and regression with SPSS application. In the data analysis technique of interviews on the use of learning modules, data analysis using the interactive analysis model has been used since the year by Miles and Huberman, (1994), namely:

- 1) Compression of information. This process of data aggregation is obtained when the researcher conducts interviews and obtains written data from the field, which is then sorted to provide the research focus required by the researcher. In this study, researchers interviewed a number of students. The results of the interview are then presented in text form.
- 2) Transmission of information. This Presenting of information about something is organizing, combining and summarizing information. Presenting the data helps to understand the context of the research in order to conduct a deeper analysis. The textual information is then presented and summarized to find the focus of the research.
- 3) Conclusion Cancellation. The researcher draws conclusions from the beginning, the researcher collects information, for example, seeks understanding without formulas, considering the regularity of explanations and the flow of cause and effect, which in the final phase ends with all the information that the researcher receives. The final step is to draw conclusions based on the information previously presented.

RESULT AND DISCUSSION

This study deals with the effects of the use of macroeconomic material in economics modules on the academic performance of economics students at Jambi University in 2020/2021. The results of the survey are presented based on the information gathered from the response questionnaire and student learning outcomes from classes provided with different learning media. For class A, an ePUB-based macroeconomics learning module is given, for class B a pdf learning module is given, and for class C study materials in the form of a textbook are given. For that, the data collected is in the form of response data and learning outcomes. The following can be found the results of descriptive statistics from student responses and learning outcomes:

Table 3. Descriptive statistics of student response questionnaires

Class	N	Std deviasi	Mean	Median	Modus
Class A (Modul ePUB)	34	4.85394	80.5	80	81
Class B (Ebook pdf)	35	12.3499	61	60.75	59
Class C (Package Book)	36	16.1798	57	56	56.5

Based on table 3, it can be seen that student responses to the use of modules as teaching materials are different. In class A, using epub-based modules with a median of 81 in the range 62.6-81.25

with a good category. Furthermore, in class B, using pdf-based ebook teaching materials, with a median of 60.75 in the range 43.76-62.5 which is included in the bad category. Furthermore, in class C, using printed books with a median of 57 in the range 43.76-62.5 which is included in the bad category. The following can be seen the statistics of student learning outcomes in table 4:

Table 4. Descriptive statistics of student learning outcomes

Kelas	N	Std deviasi	Mean	Median	Modus
Kelas A	34	5.38895	79	81	78
(Modul ePUB)					
Kelas B	35	13.8988	60	59	60
(Ebook pdf)					
Kelas C	36	15.7899	59	57	56
(buku paket)					

Based on Table 4, it can be seen that student learning outcomes are different. In class A, using epub-based modules with a median of 81 in the range 80.1-100 with the very good category. Furthermore, in class B, using pdf-based ebook teaching materials, with a median of 59 in the range 40.1-60 which is in the bad category. Furthermore, in class C, using printed books with a median of 57 in the range 40.1-60 which falls into the bad category.

These results are supported by the results of interviews with several students from each class. The results of the interviews show that students who use epub-based modules are more enthusiastic in the learning process, this is because students feel that using epub-based modules can make learning more active, competitive and fun to make it easier for the students to understand the learning material. Meanwhile, the use of pdf-based teaching materials and printed books tends to make students feel bored and bored. This will then affects the learning outcomes achieved by students.

From the data that has been collected, anova test and regression test show the effect of given media or modules on students' learning outcomes. An Anova test was performed for between-class comparisons (Bachri, 2010; Idris et.al, 2019; Ein & Sopandi, 2018; Kuswandari et.al, 2013). Meanwhile, a simple the linear regression test determines the effect of one independent variable on one dependent variable (Putrayasa et.al, 2014; Eliza, 2015; Asrial et.al, 2019); Fatmawati, 2015. In this analysis, there is a coefficient of determination which has a value between 0 - 1. If the value obtained is closer to 1, it means the higher the ability of the independent variable to explain the variance of the dependent variable. Decision making to see the influence of independent variables on the dependent variable can be seen based on the comparison of the significance value of the processed data with a significance level of $\alpha = 0.05$ (Darmaji et.al, 2020). The ANOVA test results can be seen in table 5 as follows:

Table 5. Anova test results in response to learning outcomes

Class	f	Sig.
Class A	10.665	0.000
Class B	7.809	0.061
Class C	2.194	0.125

From the table above, it shows that the significance value obtained in class A is equal to 0.000 < 0.05. That means learning module variable has a significant effect on student learning outcomes. These results also indicate that the regression model obtained can be used to see how the relationship between the two dependent variables.

Furthermore, a simple linear regression analysis was carried out. In simple linear regression analysis, a regression coefficient will be generated that can be used to see the magnitude of the influence of each independent variable with the dependent variable. A positive regression coefficient (unidirectional) indicates a positive (unidirectional) the relationship between independent variable and dependent variable (Asrial et.al, 2020). This positive relationship means that there is an effect between the independent variable (X) and the dependent variable (Y). The results of simple regression analysis carried out on the learning module variable (X) on the economic learning outcome variable (Y) can be seen in table 6 as follows:

Table 6. Results of response regression tests on learning outcomes

Kelas	R	R Square
Kelas A	.867 ^a	.751
Kelas B	.499 ^a	.249
Kelas C	.489 ^a	.239

The number 0.867 in class A indicates that the correlation/relationship between module use and learning outcomes is strong because the R value is greater than 0.5. whereas for classes B and C, the correlation value is smaller than 0.5, so the relationship between module use and learning outcomes is weak.

This information is confirmed by interviews with several students in each different class. The results of the interview stated that when learning using epub-based modules would make students enthusiastic and easily understand each material, learning would be innovative and creative, then this would have an effect on student learning outcomes. Likewise, when using pdf and print-based books that make students bored, then the material is difficult to understand because learning is boring and will also affect student learning outcomes that are not good (Lestari & Siswanto, 2015; Asrial et.al, 2019; Astalini et.al, 2020; Syahril et.al, 2020).

CONCLUSION

The results of the research previously described show that it can be concluded that the student response to the epub-based learning module is good, and the pdf and printed book modules are not good. This response affects student learning outcomes. In learning using epub-based modules, student learning outcomes are very good, and in pdf modules and printed books are not good. This shows that the use of epub-based modules can improve student learning outcomes.

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