

## Development of Material Economics Modules That Experience Misconceptions in Students of the Economics Study Program Medan State University

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**ABSTRACT:** *The online learning system has an impact on limited access to information. As educators in universities, we are required to be more creative in improving the quality of learning. For this reason, it is necessary to compile module that are feasible to support learning, especially economics courses on material that has experienced misconceptions. Misconception means the existence of a model of thinking, understanding or wrong ideas formed by students and contrary to theories and concepts used in economic terms. Some students do not have a correct understanding of each concept listed in economic learning, misconceptions also occur when students make a general view based on observations, lack of understanding of concepts, namely unclear and very vague, less tactful, narrow, less exposed, and there are conflicts in the meaning of language between everyday language and terms used in economics. This research uses the research and development (R&D) method with the concept of Borg and Gall. This research was conducted in the economics study program of Medan State University with a total population of all students taking economics courses in the 2021/2022 academic year. Samples are determined by purposive random sampling and sample classes are used to test individual, small group, and limited field samples To see whether or not this module is feasible is first validated by expert lecturers in economics, as well as to see whether or not this module is effective is first tested on students. This research at the same time produced a decent module, effectively having an ISBN. After all the revision notes were corrected as recommended by the validator, then this module was tested on an individual group of 3 people, a small group of 6 field groups consisting of 33 students. From the results of the effectiveness trial, it can be concluded that the average student learning outcomes by using modules are better than the learning outcomes of students who do not use modules. Hopefully this research can further motivate student learning and can also increase student learning independence.*

**KEYWORDS :** development, modules, economics, and misconceptions

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## INTRODUCTION

The problem that has arisen recently is the existence of a covid-19 pandemic. Almost all countries implement a policy of working from home. The Indonesian government made a rule by closing all schools starting from the basic high schools and replacing the learning process with an online learning system. In accordance with what I experienced in the lecture process using a network system, many problems were found, both from students and from the lecturers themselves. There are two main issues that are often discussed by teachers and lecturers; a) how a lecturer makes a good learning design, and b) if the learning design made is good, then how is the material aspect or content content, in addition to these two things the living environment of the student is not supportive and less conducive to learning in this network, as a result there are some teaching staff making decisions to carry out online learning activities at night.

The main focus of this study is to discuss misconceptions about the concept of economics in economics subjects among students. Misconception means the existence of a model of thought, understanding or wrong idea formed by the student and contrary to the theories and concepts used in economic terms. Some students do not yet have a correct understanding of each concept listed in economic learning. Misconceptions from the perspective of language meaning in providing definitions for each concept, misconceptions also occur when students make a general view based on observation, lack of understanding of concepts that are unclear and very vague, less thoughtful, less exposed, and there are conflicts of language meaning between everyday language and terms used in economics. Therefore, misconceptions need to be addressed in order for learning to be effectively accepted by students.

### Problem Formulation

The existence of modules that have been made before without going through a series of relevant research and development (R&D) is the core of the problem to be researched. For this, it is necessary to carry out a series of research and development (R&D) that includes module relevant to the concept of 6 tasks of the KKNI. From a series of research and development (R&D) processes, this module is expected to be relevant to equip student competencies, improve learning outcomes and increase student learning independence. To operationalize this research agenda as a whole, this study will focus on developing modules in the form of material economics modules that have experienced misconceptions. The agenda is detailed in the following formulation of the problem; 1. Is the economics module on the developed misconception material suitable for use in student learning?; 2. Is the economics module on the misconception material effective for use in student learning?

### Research Objectives

In line with the formulation of the problem I put forward above, the objectives of this study are; a) to see if the economics module on the developed misconception material is suitable for use in

learning in students?; b) . To find out whether the economics module on the misconception material is effective for use in student learning?

## RESEARCH METHODS

This research is a type of development research, which aims to develop research products after validation by a team of experts in their fields, as for the process that must be carried out in this research is to first study the results of research that is related to the product to be developed, then develop a product based on what was found, test and determine where later this product is used, and make revisions to certain parts that are found to be deficient, and if necessary further reviewed until all the data tested have shown that all the products developed have met their feasibility in accordance with the goals set forth.

The subjects of this study as a source of data are lecturers who teach economics courses both mycro and macro as well as students in the economics science study program at the Faculty of Economy Unimed. The economic module developed will be of high quality if it has fulfilled two aspects, namely the aspect of its validity and the aspect of its effectiveness as described in this article:

### Due Diligence

The data obtained from the validator is then analyzed descriptively with a qualitative analysis that will be used as a guideline to discuss the product, so that the resulting product is feasible to use. The product design to be developed is then evaluated by a team of validators using a validation sheet. The results of the assessment of all aspects assessed are then determined by the Likert Scale, which is a number of statements that are both positive and negative with regard to the object. The main principle of the likert scale is to determine the location of a person's position in determining the attitude to the object that changes from negative to positive. In this study, the options in the questionnaire given were made in four options, namely:

**Table 1: Feasibility Scale Indicators**

Scale	Informatio
4	very good
3	good
2	not good
1	unkind

In the next stage, we can assess the product in the form of a module that will be applied to the economic learning of the material that has experienced misconceptions, from the data collected, we can know how much the response weight of the expert validator is, for that a formula is used to calculate the score in the following way:

$$\text{Average total score} = \frac{\text{Total score}}{\text{Number of Assessors}} \times 100\%$$

Then to reduce the percentage, it can be searched using the following formula.

$$\text{Result} = \frac{\text{Average Total Score}}{\text{Max Value}} \times 100\%$$

Whether or not the module is feasible is used the following criteria:

**Table 2: Module Eligibility Criteria**

No	Scor in %	Eligibility Criteria
1	< 41%	Unfit
2	41 – 60 %	Quite Decent
3	61 – 80 %	Worth
4	81 – 100 %	Very Worthy

### **Effectiveness Test**

To test the effectiveness of this module is based on the results of student learning tests, both for control classes, as well as experiential classes using paired sample t-tests. According to Kadir (2015) the essence of analyzing the difference between two averages of non-free samples is that the two data to be tested must come from the same group and produce two distributions of data. The design of these experiential classes and control classes is used to test the effectiveness of modules using this economic module, in the form of hypotheses:

Ho : There is no difference in learning outcomes between an experiment class that uses an economics module and a control class that does not use an economics module.

Ha : There are differences in learning outcomes between experiment classes that use economics modules and control classes that do not use economics modules.

With the accept Ho criteria, if the Sig value > 0.05 and reject Ho, if the Sig value < 0.05.

## **PRODUCT RESEARCH AND DEVELOPMENT RESULTS**

### **Module Product Design**

The initial discussion of the design of this module is the suitability between the learning objectives, the subject matter of learning, the methods used, evaluation tools and so on, in general the discussion process is more focused on determining what material will be poured into the module that is adjusted to the syllabus. It next displays the design framework of the module to be developed. Each item in this design is based on the provisions in creating the default module. Although the initial product design is a draft that must be validated by experts, researchers are trying their best to develop modules that are suitable for use by lecturers and students.

### **Data from the validation of material experts**

Validation from material experts on the material used in the module materials developed was carried out by economic experts, namely Dr.M.Yusuf, M.Si. He is a lecturer at the postgraduate school of Medan State University, material expert validation is carried out in order to get input that is used to improve the quality of the material in the economics module on material that has

experienced misconceptions. Validation results in the form of assessment scores on the components of the quality of module materials contained in the module development product, can be seen in table 3 below

**Table 3: Assessment Scores of Economics Teaching Modules by Material Experts**

No	Aspect	Indicator	Score	Catagory
1	Conformity of Learning Objectives	Clarity of basic competencies	3	proper
2		Clarity of learning objectives	4	very worthy
3	Material Quality	Accuracy of the content of the material	4	very worthy
4		The correctness of the content of the material	3	proper
5		Clarity of the content of the material	4	very worthy
6		Systematics of the content of the material	3	proper
7		Conformity of the material to basic competencies	4	very worthy
8		Completeness of the content of the material	4	very worthy
9	Presentation of Material Content	Clarity of language	3	proper
10		The expediency of the image to support the material	3	proper
11		The expediency of the video to support the material	3	proper
12		Ease of understanding the content of the material	4	very worthy
13	Self Evaluation Presentation	Clarity of practice questions	4	very worthy
14		The suitability of the question exercise with the material	4	very worthy
15		Giving feedback on practice Questions	3	proper
<b>Sum</b>			<b>53</b>	
<b>Average</b>			<b>3,5</b>	
<b>Percentage</b>			<b>88%</b>	<b>very worthy</b>

(Source: processed by researchers based on the results of assessments from validators)  
 From the assessment obtained from the expert team in Table 3, it can be seen that from the entire indikator as many as 15 indicators displayed obtained an average response value of 3.5 or 88% with a very decent category, when viewed from each indicator there were eight indicators of very

feasible response, while the remaining seven indicators received a decent response. Based on these results, it can be concluded that in general that the module developed are very feasible it is worthy of being developed as a module in material economics courses that have experienced misconceptions in the science study program of the Faculty of Economics, Medan State University.

### **Small group trials**

The small group trial was carried out to 6 students of the economics study program, and was divided into three categories, each for the category of high-achieving students as many as 2 people, medium-achieving students as many as 2 people, and low-achieving students as many as 2 people. The goal is to find out more about the shortcomings of this developed module if we look at the aspect of learning quality.

Based on the results of the assessment data of small group students on the economics module, it appears that for the category of material aspects with the first question, the description of the learning material has been easy to understand with a total of 21, the average score of 88% and is included as an excellent criterion. The next question the material in the module is clearly and easily followed by a total of 22 average score of 92% and is included as an excellent criterion. The next question is that the material presented in the module is generally able to attract students to learn to get a total of 22 with an average score of 92% with excellent criteria. The next question about the delivery of the material in the module and in accordance with the material that has experienced misunderstandings was obtained a total of 21 with a percentage of 88% included as an excellent criterion. The next question of this economics module contains an evaluation that looks at how far my understanding of the material presented is that 18 average scores of 75% are included as good criteria. The last question of using this module made me even more eager to study economics obtaining the number 22 average score of 92% entered as an excellent criterion from the material aspect obtaining an average percentage of 88% with excellent criteria. When viewed in the category of material aspects, of all the questions the answers of the respondents five are in the excellent category, and one is in the good category.

When viewed from the presentation aspect of the five questions can be classified as follows, for the first question the presentation of this module made me interested in reading it obtained a percentage of 88% entry as an excellent criterion. The question of these two modules is equipped with a summary of the material that includes the content of the material obtaining a percentage of 83%. entered as a very good category. The third question of using modules in the learning process allowed me to learn more quickly and easily understand the learning material gaining a percentage of 88%. entered as a very good category. The fourth question of each learning step in this module clearly gains a percentage of 88%. entered as a very good category. The fifth question example given in this module helps to understand material that is difficult to understand, obtaining a percentage of 92% entry as an excellent criterion. If we look at the five questions, all the answers are in the very good category.

Looking at the language aspect, of the three questions asked we can see as follows, for the first question the language used in this module already corresponds to the enhanced spelling obtaining a percentage of 88% entry as an excellent category. The statements of the two languages used in this economic module are easy to understand, obtaining a percentage of 79% entered as a good category. The third question of sentence structure used in this economics module clearly and simply obtains a percentage of 88% entry as an excellent criterion. If we look at the three questions, there are two excellent answers and one in the good category. Overall, the answers from the results of this small group trial can be for the three categories of aspects that are assessed to obtain average results for material aspects of 88%, presentation aspects of 88% and language aspects of 84%. When we merge for the three categories, the average is obtained by 87% and enters the category very well

For more details on the percentage of average assessment results of the economic module, small group trials can be seen in table can be seen in Table 4

**Table 4: The average percentage of assessment results of the Economics module Small group trials**

No	Category	Percentage	Criteria
1	Material aspects	88%	Excellent
2	Presentation aspects	88%	Excellent
3	Language aspects	84%	Excellent
Avarage		87 %	Excellent

### Field Trial Results

These field trials were conducted after correcting the weaknesses found, in small group trials. This field trial was conducted on students. This trial was carried out in economic learning totaling 33 respondents through online learning, the questionnaire was distributed to 33 students. Based on the results of the assessment data of field group students in the economics module, it can be seen that for the category of material aspects with the first question, the description of the learning material has been easily understood with a total of 114, of which 4 respondents chose 2, and 10 respondents chose 3, and 19 respondents chose 4, with an average obtained of 86% and entered as an excellent criterion. The second question of the learning material in the module is presented clearly and easily followed with a total of 112 with an average of 85% and is included as an excellent criterion. The third question is that the content of the material in the module as a whole is able to attract students to learn to get a total of 112 with a percentage of 85% with very good criteria. The fourth question of material delivery in the module and according to the material that experienced misconceptions obtained a total of 113 with a percentage of 86% entered as an excellent criterion. The fifth question of this economics module contained an evaluation that tested how far my understanding of the material presented obtained a total of 111 with a percentage of 84% entered as an excellent criterion. The sixth question using this module made me more excited to learn economics, with a total of 111 with a percentage of 84% entered as an excellent criterion from the material aspect obtaining an average percentage of 85% with excellent criteria. If we look at the category of

material aspects, of the six items of questions the respondents' answers are in the very good category,

When viewed from the presentation aspect of the five questions can be described as follows, for the first question the presentation of this module made me interested in reading it obtained a percentage of 83% entry as a good criterion. The question of these two modules is equipped with a summary of the material that includes the content of the material obtaining a percentage of 84%. entered as a very good category. The third question of using modules in the learning process allowed me to learn faster and easier to understand the learning material gaining a percentage of 86%. entered as a very good category. Fourth question Each learning step in this module clearly gains a percentage of 80%. entered as a very good category. The fifth question example given in this module helps to understand material that is difficult to understand, obtaining a percentage of 86% entry as an excellent criterion. If we look at the five questions, all the answers are in the very good category.

Looking at the language aspect, of the three questions asked we can see as follows, for the first question the language used in this module already corresponds to the enhanced spelling gaining a percentage of 83% entry as an excellent category. The second question, the language used in this economics module is easy to understand, obtaining a percentage of 85% entered as a very good category. The third question of sentence structure used in this economics module clearly and simply obtains a percentage of 86% entry as an excellent criterion. If we look at the three questions, all the answers are in the very good category.

Overall, the answers from the results of this field group trial were obtained for the three categories of aspects that were assessed to obtain average results for material aspects of 85%, presentation aspects of 84% and language aspects of 86%. If we merge for the three categories, the average is obtained by 85% and enters the category very well.

For more details on the percentage of average assessment results of the economic module, field trials can be seen in table can be seen in Table 5

**Table 5: The average percentage of assessment results of the Economics module field trials**

No	Category	Percentage	Criteria
1	Material aspects	85%	Excellent
2	Presentation aspects	84%	Excellent
3	Language aspects	86%	Excellent
Avarage		85 %	Excellent

Based on the results of the tabulation of trials carried out, which include individual trials, small group trials and field group trials as a basis for determining whether the modules developed are feasible to use, where the scores obtained are respectively for individuals by 86%, for small groups by 87%, and for field groups by 85%, and the average score is as large as 86%, with categories

very good or feasible to use. For clarity, the results in the acquisition of individual, small group and limited field trial data can be seen empirically in Table 6 below:

**Table 6: Average percentage of media review results Individual group trials, small groups, and field groups**

No	Category	Percentage	Excellent
1	Individual Groups	86%	Excellent
2	Small Groups	87%	Excellent
3	Field Group	85%	Excellent
Avarage		86%	Excellent

**Two Average Difference Test**

The next step is to test whether the resulting product is effective or not, then the researcher uses the t test to see if there is a significant difference between the learning outcomes of the control class without using the module and the experiment class using the module, carried out using the difference test (t-test). with the following criteria:

- If the t-count value > the t-table then it is said that there is a significant difference in the learning outcomes of the control class and the experiment class
- If the t-count value < ttable then it is said that there is no significant difference in the learning outcomes of the control class and the experiment class

In summary, the results of the hypothesis test calculations are listed in Table 7 below:

**Table 7: Hypothesis Test Results with T test F-Test: Two-Sample Assuming Equal Variances**

	<i>Posttest</i>	<i>Pre-test</i>
Mean	86,33333333	83,39393939
Variance	28,85416667	27,37121212
Observations	33	33
Pooled Variance	28,11268939	
Hypothesized Mean Difference	0	
df	64	
t Stat	2,251897244	
P(T<=t) one-tail	0,013883915	
t Critical one-tail	1,669013025	
P(T<=t) two-tail	0,027767831	
t Critical two-tail	1,997729654	

Based on the results of the calculation of the t-test, in Table 8 data were obtained that the t-count > the t-table or  $2.251897244 > 1.997729654$  or in other words the hypothesis was accepted, it can be concluded that the learning outcomes of the students of the experiment class in economics

courses in economics study program students using modules are significantly higher than the scores of students taught without using modules.

## CONCLUSION AND RECOMMENDATIONS

1. The validation results by the module experts are declared "very valid". The validation results include 4 aspects, namely aspects of the suitability of learning objectives, material quality, presentation of material content, and presentation of self-evaluation modules. The results of the assessment of the four aspects were declared "very valid" with an average percentage of 88%.
2. The results of the student assessment trial were carried out in 2 processes, namely a small group trial of 6 people, and a field trial of 33 people. The results of the small group trial trials were declared "excellent" with a percentage of 87%. the results of field trials were declared "excellent" with an average percentage of 85%. Thus the developed module is worth using.
3. The results of the trial assessment of students were carried out in 2 processes, namely small group trials of 6 people, and field trials of 33 people. The results of individual trials were declared "very good" with an average percentage of 86%. The results of small group trials were declared "very good" with a percentage of 87% . the results of field trials were declared "very good" with an average percentage of 85%. Thus the modules developed are worth using.
4. The results of the independent sample T-Test analysis were obtained n ilai sig.2-tailed that the  $t\text{-count} > t\text{-table}$  or  $2.251897244 > 1.997729654$ , it can be concluded that the learning outcomes of students in economics courses in economics study program using modules are higher than the scores of students taught without using modules. Thus the modules developed are effectively used in learning activities.

The material economics module experiences misconceptions that have been developed, is expected to be used in the learning process, and can help students understand the learning material, and be able to open students' insights about good learning.

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