



**TECHNIUM**  
**SOCIAL SCIENCES JOURNAL**

**Vol. 36, 2022**

**A new decade  
for social changes**

[www.techniumscience.com](http://www.techniumscience.com)

ISSN 2668-7798



9 772668 779000

## Implementation Of Host Learning In The Course Macroeconomic

Henry J. D. Tamboto<sup>1</sup>, Allen A. Ch. Manongko<sup>2</sup>, Recky H. E. Sendouw<sup>3</sup>

Faculty of Economics and Business, Manado State University<sup>1,2</sup>

Faculty of Social Sciences and Law, Manado State University<sup>3</sup>

Corresponding Author Email: [reckyh@yaho.com](mailto:reckyh@yaho.com)

**Abstract.** This study aims to analyze Higher Order Thinking Skill (HOTS) oriented learning in the Macroeconomic Theory course at the Economic Education Study Program, Faculty of Economics and Business, Manado State University. This research uses a quantitative approach with experimental methods. The object of research is lecturers and students of the Department of Economic Education, Faculty of Economics and Business, Manado State University. Data were collected through tests, observations, interviews, and documentation and literature studies. The findings of the study are: Inquiry Learning/Learning Model, learning outcomes from Higher order thinking skills (HOTS) can increase in the moderate category with a fairly effective interpretation compared to the control class; using the Problem-based Learning Model (PBL), Higher order thinking skill (HOTS) learning outcomes can be improved compared to control classes with higher average scores of experimental classes than control classes; and Project-based Learning (PJBL), the learning outcomes of higher order thinking skills (HOTS) can be improved compared to the control class with the average experimental class higher than the control class.

**Keywords:** Learning; Higher Order Thinking Skills.

### 1. Introduction

In 21st century learning, creativity, critical thinking, cooperation, communication skills, social and character skills are imperative for all educational institutions that must do so. Utilization of various learning activities that support 4.0 is a must with a resource sharing model with anyone and anywhere, classroom and lab learning with augmented virtual materials, interactive, challenging, and content-rich learning is not just complete.

The 21st century learning framework emphasizes skills that include: critical thinking and problem solving skills; communication and collaboration skills; creativity and innovation skills; information and communications technology literacy; Contextual learning skills; and Information and media literacy skills, with learning characteristics including integrative, holistic, scientific, contextual, thematic, effective, collaborative, and student-centered.

The role of professional educators/teachers in learning is very important as the key to the success of student learning and producing quality graduates. Learning development oriented

to higher order thinking skills or Higher Order Thinking Skill (HOTS) is a program developed as an effort of the Ministry of Education and Culture through the Directorate General of Teachers and Education Personnel (Ditjen GTK) in an effort to improve the quality of learning and improve the quality of graduates. This program was developed following the policy direction of the Ministry of Education and Culture which in 2018 has integrated Strengthening Character Education and learning oriented to Higher Order Thinking Skills (HOTS). One of the ways to improve the quality of students is carried out by educators/teachers who focus on improving the quality of learning in the classroom by orienting themselves to higher order thinking skills. This design to improve the quality of learning is an effort to improve the quality of students which ultimately improves the quality of education in Indonesia.

The purpose of this research is to compile and analyze the Higher Order Thinking Skill (HOTS) Model in Microeconomic Theory Learning in the Economic Education Study Program, Faculty of Economics, Manado State University with a quantitative approach with experimental methods.

## **2. Literature Review**

### **High Order Thinking Skills (HOTS) Concept**

According to several experts, the definition of higher order thinking skills, one of which from Resnick, is a complex thinking process in describing material, making conclusions, building representations, analysing, and building relationships involving the most basic mental activities. This skill is also used to underline various high-level processes according to Bloom's taxonomic level. According to Bloom, skills are divided into two parts. The first is the low-level skills that are important in the learning process, namely remembering, understanding, and applying, and the second is classified into higher-order thinking skills in the form of analysing, evaluating, and evaluating skills, and create (creating).

Higher Order Thinking Skill (HOTS) is triggered by four conditions, namely: a. A certain learning situation that requires specific learning strategies and cannot be used in other learning situations; b. Intelligence is no longer seen as an immutable ability, but a unity of knowledge that is influenced by various factors consisting of the learning environment, strategies and awareness in learning; c. View understanding that has shifted from unidimensional, linear, hierarchical or spiral towards view understanding to be multidimensional and interactive; and D. More specific higher order thinking skills such as reasoning, analytical skills, problem solving, and critical and creative thinking skills.

High Order Thinking Skills is a thinking process of students at a higher cognitive level which is developed from various cognitive concepts and methods and taxonomies of learning such as problem-solving methods, bloom taxonomy, and taxonomies of learning, teaching, and assessment. These high order thinking skills include problem-solving skills, creative thinking skills, critical thinking, argumentation skills, and decision-making abilities. King, et.al, revealed that high order thinking skills are related to critical, logical, reflective, metacognitive, and creative thinking.

High order thinking skills aim to improve students' thinking skills at a higher level, especially those related to the ability to think critically in receiving various types of information, think creatively in solving a problem using the knowledge they have and make decisions in situations that complex.

The basis or reference for high order thinking skills refers to the activity of analysing, evaluating, creating knowledge that is adapted to conceptual, procedural and metacognitive. According to Krathwohl in A revision of Bloom's Taxonomy, stating that indicators to measure

higher order thinking skills include analysing, namely the ability to separate concepts into several components and linking them to each other to gain an understanding of the concept as a whole, evaluating, namely the ability to determine the degree of something based on norms, certain criteria or standards, and creating, namely the ability to combine elements into a new form that is complete and broad, or to create something original.

Higher order thinking skills are closely related to thinking skills in accordance with the cognitive, affective, and psychomotor domains that become an integral part of the teaching and learning process.

- a) Cognitive Domain
- b) Affective Domain
- c) Psychomotor realm

### High Order Thinking Skills (HOTS) Learning Models

Implementation of the 2013 Curriculum according to Permendikbud No. 22 of 2016 concerning Process Standards using 3 (three) learning models which are expected to shape scientific, social behavior and develop curiosity. The three models are:

a. The Discovery/Inquiry Learning model, namely: understanding concepts, meanings, and relationships through an intuitive process to finally arrive at a conclusion. Discovery occurs when the individual is primarily involved in the use of his mental processes to discover some concepts and principles. Discovery is done through observation, classification, measurement, prediction, determination and inference.

b. Problem-based Learning Model, namely: learning that uses various thinking abilities of students individually and in groups as well as the real environment to overcome problems so that they are meaningful, relevant, and contextual. The purpose of PBL is to improve the ability to apply concepts to new/real problems, integrate the concept of Higher Order Thinking Skills (HOTS), desire to learn, direct self-study and skills.

c. The Project-Based Learning model, which is a learning model that involves the activeness of students in solving problems, is carried out in groups/independently through scientific stages with a certain time limit as outlined in a product to be further presented to others.

### 3. Research Method

This study used an experimental method in the form of a quasi-experimental research design (quasi) non-equivalent control group design which procedurally followed the pattern as shown in.

**Table 1.** Non-equivalent Control Group Design.

Group 1	O1	X1	O2
Group 2	O3	X2	O4
Group 3	O5	-	O6

Description:

O1,3,5 = pretes;

O2,4,6 = post test;

X1 = Discovery/Inquiry Learning

X2 = Problem-based Learning

In this design, the groups used for the study were not chosen randomly, either the experimental group or the control group. To determine the effect and differences between the experimental group and the control group were  $(O2 - O1) - (O4 - O3) - (O6 - O5)$ .

The research variables consist of: Independent variables, namely the Discovery/inquiry learning model, and Problem-based Learning. Dependent Variables, namely: Student Learning Ability The population in this study were all students of the FE-UNIMA Economic Education study program for the odd semester 2020-2021 who contracted 99 macroeconomic theory courses (registered data). The sample in this study were students of the 2nd semester of Economics Education study program.

Data collection is done through: 1). Test; 2). Observation sheet; and 3). Documentation; and 4). Interview

Data Analysis Techniques

- 1) Descriptive Analysis
- 2) Instrument Testing
- 3) Assumption Test Pengujian
- 4) Inferential Analysis (Pair Sample Test, and Independent Sample Test).

#### 4. Result

Based on the method used in this study, namely the experimental method, the researchers took samples of the experimental and control classes, namely second semester students of class II B Economics Education Study Program FE UNIMA by using the Higher order thinking skill HOTS learning model by giving an initial test (pre-test) and final test (post-test) with the same objective test questions so that learning outcomes data are obtained.

Testing The description of the data is attached in the appendix.

- Prerequisite test
- Data normality test

The normality test is to see whether the data is normally distributed or not by using a one-sample komogrorov-smirnov with the basis for making a decision, namely if  $Asymp. Sig. (2-tailed) > 0.05$  Then the data is normally distributed.

**Table 2.** One-Sample Kolmogorov-Smirnov Test

		pre_K1	pre_K2	pre_k3
<i>N</i>		30	30	30
<i>Normal Parameters<sup>a,b</sup></i>	Mean	34.5333	38.6667	32.8333
	Std. Deviation	4.04912	3.61351	5.64516
<i>Most Extreme Differences</i>	Absolute	.098	.141	.136
	Positive	.081	.078	.118
	Negative	-.098	-.141	-.136
<i>Test Statistic</i>		.098	.141	.136
<i>Asymp. Sig. (2-tailed)</i>		.200 <sup>c,d</sup>	.133 <sup>c</sup>	.161 <sup>c</sup>
<i>a. Test distribution is Normal.</i>				
<i>b. Calculated from data.</i>				
<i>c. Lilliefors Significance Correction.</i>				
<i>d. This is a lower bound of the true significance.</i>				

The analytical technique used to test the hypothesis in this study was determined after testing the data prerequisites (normality and homogeneity). Based on the pre-requisite test of the data carried out, it can be seen that the data meets the prerequisites for using parametric analysis. To test the difference between the two averages of pre-post and post-test, the paired sample t-test was carried out. Furthermore, to test the post-test difference in the two averages, it was carried out with an independent sample t-test. And to test the difference between the post-test averages of the control and experimental classes, it was carried out using one-way ANOVA.

a. Different test pre test and post test (paired sample t-test) experimental class

1. Difference Test 2 Experimental Class Averages Discovery/Inquiry Learning

The basis for decision making is if the tailed significant value is  $< 0.05$ , then there are differences in learning outcomes (HOTS) before and after applying Discovery/Inquiry Learning, otherwise, there are no differences in learning outcomes (HOTS) before and after applying Discovery/Inquiry Learning.

**Table 3.** Paired Samples Test

		Paired Differences				t	Df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
<i>P</i>	POST_T	23.066	1.998	.3649	22.320	23.813	63.	29	.000
<i>a</i>	EST_X1 -	67	85	4	28	05	207		
<i>i</i>	PRE_TE								
<i>r</i>	ST_X1								
<i>l</i>									

Based on the table data above, it can be seen that the value of sig (2-tailed)  $< 0.05$ , so there is a difference in learning outcomes (HOST) by applying Discovery/Inquiry Learning.

2. Differential Test 2 Experimental Class Average Problem-Based Learning

The basis for decision making if the tailed significant value is  $< 0.05$ , then there is a difference in learning outcomes (HOTS) before and after implementing Problem-Based Learning, otherwise, there is no difference in learning outcomes (HOTS) before and after applying Problem-Based Learning.

**Table 4.** Paired Samples Test

		Paired Differences				T	df	Sig. (2-tailed)	
		Me	Std.	Std.	95% Confidence				
		an	Deviat	Error	Interval of the				
			ion	Mean	Difference	Lower	Upper		
<i>P</i>	POST_	11.	1.4781	.26988	11.214	12.318	43.	29	.000
<i>a</i>	TEST_	766	9		70	63	600		
<i>ir</i>	X1 -	67							
<i>l</i>	PRE_T								
	EST_X								
	1								

Based on the table data above, it can be seen that the value of sig (2-tailed) < 0.05, so there is a difference in learning outcomes (HOST) by applying Problem-Based Learning.

3. Difference Test 2 Average Project-Based Learning Experiment Class

The basis for decision making if the tailed significant value is < 0.05, then there is a difference in learning outcomes (HOTS) before and after implementing Project-Based Learning, otherwise, there is no difference in learning outcomes (HOTS) before and after applying Project-Based Learning.

**Table 5.** Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Me	Std.	Std.	95% Confidence Interval of the Difference				
		an	Deviation	Error Mean	Lower	Upper			
<i>P</i>	POST_TEST	20.	2.542	.46420	19.183	21.082	43.	29	.000
<i>a</i>	_X3	-	133	51	94	72	37		
<i>ir</i>	PRE_TEST_	33					2		
<i>l</i>	X3								

Based on the table data above, it can be seen that the value of sig (2-tailed) < 0.05, so there is a difference in learning outcomes (HOST) by applying Project-Based Learning.

b. Different test pre test and post test (paired sample t-test) control class

c.

1. Difference Test 2 Average Control class 1 which does not apply Discovery/Inquiry Learning

The basis for making decisions if the tailed significant value is < 0.05, then there is a difference in learning outcomes (HOTS) before and after in class 1 which does not apply Discovery/Inquiry Learning, otherwise, there is no difference in learning outcomes (HOTS) before and after in control class 1 which does not apply Discovery/Inquiry Learning.

**Table 6.** Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Me	Std.	Std.	95% Confidence Interval of the Difference				
		an	Deviation	Error Mean	Lower	Upper			
<i>P</i>	POST_TEST	17.	1.529	.2793	16.69	17.83	61.	29	.000
<i>a</i>	_K1	-	266	78	0	544	790	82	
<i>ir</i>	PRE_TEST_	67					2		
<i>l</i>	K1								

Based on the table data above, it can be seen that the value of sig (2-tailed) < 0.05, so there is a difference in learning outcomes (HOST) in the 1st control class that does not apply Discovery/Inquiry Learning.

2. Difference Test 2 Average Control Class 2 which does not apply Problem-Based Learning

The basis for decision making if the tailed significant value is  $< 0.05$ , then there is a difference in learning outcomes (HOTS) before and after in the 2nd control class that does not apply Problem-Based Learning., otherwise, there is no difference in learning outcomes (HOTS) before and after in the 2nd dick class that does not apply Problem-Based Learning.

**Table 7.** Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
<i>Paired Samples Statistics</i>	POST_	13.6333	2.56614	.46851	12.675	14.5915	29.099	29	.000
	TEST_K2 - PRE_T	3							
<i>Paired Samples Test</i>	EST_K2								

Based on the table data above, it can be seen that the value of sig (2-tailed)  $< 0.05$ , so there is a difference in learning outcomes (HOST) in the 2nd control class that does not apply Problem-Based Learning.

3. Difference Test 2 Average of Control Class 3 that does not implement Project-Based Learning

The basis for decision making if the tailed significant value is  $< 0.05$ , then there is a difference in learning outcomes (HOTS) before and after in the 3rd control class that does not apply Project-Based Learning, otherwise, there is no difference in learning outcomes (HOTS) before and after in 3rd dick class that doesn't apply Project-Based Learning.

**Table 8.** Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
<i>Paired Samples Statistics</i>	Post_test_K3	4.6333	.48495	.73171	1.0915	8.1750	.4509	9	.000
	Pre_test_K3								
<i>Paired Samples Test</i>									

Based on the table data above, it can be seen that the value of sig (2-tailed)  $< 0.05$ , so there is a difference in learning outcomes (HOST) in the 3rd control class that does not implement Project-Based Learning.

## 5. Discussion

Higher order thinking skills (HOTS) have the characteristics of this ability level including the abilities or skills of students in indicators C4: analyze (analyze), C5: evaluate (evaluate), C6: Create (Create).

Implementation of the 2013 Curriculum according to Permendikbud No. 22 of 2016 concerning Process Standards using 3 (three) learning models which are expected to shape scientific, social behavior and develop curiosity. The three models are: the Discovery/Inquiry Learning Model, the Problem-based Learning (PBL) Model, and the Project-based Learning (PJBL) Model.

### 1. Learning Outcomes Higher order thinking skills (HOTS) With Learning Models Through Disclosure/Discovery (Discovery/Inquiry Learning)

The discovery/inquiry learning model is to understand concepts, meanings, and relationships through an intuitive process to finally arrive at a conclusion. Discovery occurs when the individual is primarily involved in the use of his mental processes to discover some concepts and principles. Discovery is done through observation, classification, measurement, prediction, determination and inference. The process is called the cognitive process while discovery itself is the mental process of assimilating concepts and principles in the mind (Robert B. Sund in Malik, 2001).

Based on the results of research conducted by applying the Learning Model Through Disclosure/Invention (Discovery/Inquiry Learning), higher order thinking skill (HOTS) learning outcomes can increase in the moderate category with a fairly effective interpretation further compared to the control class (class who do not apply Discovery/Inquiry Learning).

It is proven by looking at the data that is different in average with the results of the research between the experimental class and the control class that the class that uses the Learning Through Disclosure/Discovery Discovery/Inquiry Learning model is higher than the class that does not apply Discovery/Inquiry Learning.

This research is supported by research conducted by Diyas Age Larasati in 2019 stating that, This proves that there is an influence of higher order thinking skill-based discovery learning models on Higher order thinking skills (HOTS) learning outcomes.

And also according to Kristin Natalia Tondang and Sahyar in 2016 The results showed a positive influence of the discovery learning model on students' higher-order thinking skills in the experimental class or given by the discovery model.

It is evident from the post test results in the experimental class that are higher than the control class or there is a significant difference from the post test scores, even though in the order of higher levels of thinking, both classes are still at a low level, but students who are given discovery learning have higher scores. higher than the control class.

### 2. Learning Outcomes Higher order thinking skills (HOTS) with Problem-based Learning (PBL) Models

Problem-based learning is learning that uses the various thinking abilities of students individually and in groups as well as the real environment to solve problems so that they are meaningful, relevant, and contextual (Tan Onn Seng, 2000).

The purpose of PBL is to improve the ability to apply concepts to new/real problems, integrate the concept of Higher Order Thinking Skills (HOT's), desire to learn, direct self-study and skills (Norman and Schmidt).

Based on the results of research conducted by applying the Problem-based Learning (PBL) model, higher order thinking skill (HOTS) learning outcomes can be increased compared to the control class with the average value of the experimental class being higher than the class that control (classes that do not apply Problem-based Learning/PBL).

It is proven by looking at the two average data differences with the results of research between the experimental class and the control class that the class that uses the Problem-based Learning Model (PBL) is higher than the class that does not apply Problem-based Learning/PBL.

The results of this study are in line with research conducted by Kristin Natalia Tondang and Sahyar that the results showed a positive influence between the discovery learning model on students' higher order thinking. It is evident from the post test results in the experimental class that are higher than the control class or there is a significant difference in the post test scores compared to the control class.

3. Learning Outcomes Higher order thinking skills (HOTS) with Project-based Learning (PJBL).

Project-based Learning model is a learning model that involves the activeness of students in solving problems, carried out in groups/independently through scientific stages with a certain time limit which is outlined in a product to be further presented to others.

Based on the results of research conducted by applying the Project-based Learning (PJBL) model, higher order thinking skills (HOTS) learning outcomes can increase compared to the control class with the average value of the experimental class being higher than the class that control (classes that do not apply Project-based Learning (PJBL)).

It is proven by looking at the two average data differences with the results of the research between the experimental class and the control class that the class that uses the Project-based Learning Model (PJBL) is higher than the class that does not implement Project-based Learning/PJBL.

The results of this study are in line with research conducted by Nur Hidayah Alawi, Tuan Mastura and Tuan Soh that, the results show that there is a significant effect on Project-based Learning (PJBL) effectively improving students' critical thinking skills which is one of the key elements in STEM education. It is evident from the post test results in the experimental class that are higher than the control class or there is a significant difference in the post test scores compared to the control class.

### **Conclusion**

The conclusions from this research article are:

Based on the results of research conducted by applying the Learning Model Through Disclosure/Invention (Discovery/Inquiry Learning), higher order thinking skill (HOTS) learning outcomes can increase in the moderate category with a fairly effective interpretation further compared to the control class (class who do not apply Discovery/Inquiry Learning). Thus, if schools use/implement the Discovery/Inquiry Learning model, higher order thinking skill (HOTS) learning outcomes can increase.

Based on the results of research conducted by applying the Problem-based Learning (PBL) model, higher order thinking skill (HOTS) learning outcomes can be increased compared to the control class with the average value of the experimental class more higher than the class that control (classes that do not apply Problem-based Learning/PBL). Thus, if schools

use/implement Problem-based Learning (PBL) models, higher order thinking skills (HOTS) learning outcomes can increase.

Based on the results of research conducted by applying the Project-based Learning (PJBL) model, higher order thinking skills (HOTS) learning outcomes can increase compared to the control class with the average value of the experimental class more higher than the class that control (classes that do not apply Project-based Learning (PJBL)). Thus, if schools use/implement Project-based Learning (PJBL), higher order thinking skill (HOTS) learning outcomes can increase.

### **Limitation**

As the findings of this study have revealed that the experimental results show good scores, but have not been able to fully explain the overall improvement of the three learning models, so that it can be biased in generalizing the results. For this reason, future research is expected to be able to re-examine the three models in different subjects.

### **References**

- [1] K. D. Guth, Assessment of Higher Order Thinking Skills in A Literature Based Curriculum: Challenges And Guidelines, South Africa: University Of South Africa, 2016.
- [2] F. G. L. & R. King, Higher Order Thinking Skills. Center for Advancement of Learning and Assessment, 2006.
- [3] D. R. Krathwohl, A revision of Bloom's taxonomy: An overview. *Theory into practice* 41(4), 212-218, 2002.
- [4] R. M. a. O. Lebar, "Authentic Assessment in Assessing Higher Order Thinking Skills," *International Journal of Academic Research in Business and Social Sciences* 2017, Vol. 7, No. 2 ISSN: 2222-6990, 2017.
- [5] R. Andrew, Beyond access: Making Indonesia's education system work., Lowy Institute. Victoria State Government, 2018.
- [6] H. Saputra, Pengembangan Mutu Pendidikan Menuju Era Global: Penguatan Mutu Pembelajaran dengan Penerapan HOTS (High Order Thinking Skills), Bandung: SMILE's Publishing, 2016.
- [7] M. d. Yoki Ariyana, Buku Pegangan Pembelajaran Berorientasi pada Keterampilan Berpikir Tingkat Tinggi., Direktorat Jenderal Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan, 2018.
- [8] Y. Abosalem, "Assessment Techniques and Students' Higher-Order Thinking Skills. *International Journal of Secondary Education.*," *International Journal of Secondary Education.*, pp. 4(1): 1-11, 6 March 2016.