

# Antecedents individual entrepreneurial orientation (IEO): problem based learning (PBL)

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## Antecedents individual entrepreneurial orientation (IEO): problem based learning (PBL)

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### Key words

Problem Based Learning (PBL), economic theory, IEO

### Abstract

To build students' IEO, an appropriate learning approach is necessary to obtain the results optimally. This study focused on how PBL effects on students' IEO and was limited on the theoretical application to the occurring condition, according to constructivist learning. This study aims to determine and analyze Problem Based Learning (PBL) on Economic Theory course in building students' IEO. The population was 112 UNESA students who took Economic Theory course with 86 students as the participants. The sampling used purposive simple random sampling and Partial Least Square for its statistic technique. The results indicated that PBL on Economic Theory course was proved to significantly effect on students' IEO, despite considered as weak due to several conditions.

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### Introduction

University, as an educational institution has responsibility to build students moral and characters. Ülger, Yiğittir, and Ercan (2014) stated that character building is important for teachers to achieve their educational goals. It is supposed to be applied every knowledge learned. Bogomaz, Litvina, Kozlova, and Atamanova (2015) argued that to build character, a role of sociocultural environment is required. Surjanti et al (2018a) argued that Indonesian teachers should improve their teaching competence especially leading to Continuous Professional Development (CPD) and those should own by lecturers on Economic Theory course in Universities. Before conducting learning process, lecturer should understand students' interest, as it affects learning outcomes (Surjanti et al, 2018b). Educational institutions need to facilitate students to increase learning outcomes (Surjanti, 2012).

Harasym, Tsai, and Munshi (2013) mentioned that the design of curriculum or learning strategies was possible to maximize the Program Based Learning (PBL). As it has appropriate method to improve students moral and character. Gwee (2009) believed that PBL offered thorough approach, additional values, and qualified education to encourage students to learn in 21<sup>st</sup> century. PBL is able to develop habitual thought, behaviors, and actions, so it contributes to improve professionalism. Kemp in Learning Academy defined constructivism as a theory influencing teaching approaches in PBL Meaning that PBL is a form of constructivist learning. This study focused on how PBL affects the Individual Entrepreneurial Orientation (IEO) of students during Economic Theory course. Bolton (2012) stated that IEO or individual entrepreneurship orientation is used to measure students' orientation and other individuals entrepreneurship. Besides, IEO provably contributes as important factor in organizational success through many individual empirical studies and it is a behavior to determine business prospects as well (Rauch et al., 2009 in Bolton, 2012).

Harasym et al. (2013) stated that PBL improved a decision making. As supported by Gwee (2009), he mentioned that a successful PBL implementation possibly encourage students in developing the "habits of thoughts, behavior, and actions" to obtain professionalism. Since this study focused on PBL role in building students' IEO, experts who analyzed objectives and learning strategies are important. As mentioned by Hmelo-silver (2011) to understand goals and strategies an expert facilitator in supporting a collaborative learning was needed and the analysis was performed through interaction using video data and stimulated recall to test PBL on two groups meetings (Muafi, 2016). According to Schmidt and Bouhuijs (1980) in (Major, Savin-baden, and Major, 2004), they determined typology that distinguished types of materials into 5, namely: 1) problems; 2) strategic task; 3) tasks; 4) discussion task; and 5) learning task.

Three of five of IEO basic dimensions of Lumpkin and Dess (1996) in Bolton (2012) were used to measure students' IEO after performing learning activity using PBL approach. This study was conducted to carry on the effort of the institution in facilitating learning process using PBL method. This study was limited to PBL especially on the theoretical application to the occurring conditions occurring according to constructivist learning.

## Literature Review

### Previous Research

Hmelo-silver, Derry, Bitterman, and Hatrak (2009) mentioned PBL approach as a collaborative learning which provides deep understanding of hybrid computer learning. They found that PBL applied in Graduate School of Business resulted on additional structure more culturally individually appropriate adjusting to emerging problem. As supported by Hung and Loyens (2012), PBL with the 3C 3R model focused on student cognitive processes and problem-solving skills. Moreover, Hung and Loyens (2012) explained Barrows (1986) and Norman and Schmidt (1992) ideas about the main goal of PBL is to develop contextual knowledge structure, to develop skills on problem solving and reasoning, to assist students on self-learning skills, to encourage learning motivation, and to develop collaboration skills. Besides, Henry, Tawfik, Jonassen, and Winholtz (2012) mentioned that PBL should adjust learners' needs to solve various problems. Therefore, PBL is possibly applied on Micro Theory course to provide in-depth learning.

Bolton (2012) explained according to Rauch (2009) EO study consisted of five that behaviors including innovativeness, risk-taking, proactiveness, competitive aggressiveness, and autonomy. This study showed in initial research that multidimensional construction commonly used in PBL occurred after variable tendency moved in most contexts, so it was possible to apply PBL on IEO context. Another study conducted by Lee et al. (2006) found that school and education system has important role to estimate and to develop entrepreneurial skills... The understanding of the sources of entrepreneurship intentions at student level is very important for policy makers to develop appropriate educational policies to strengthen entrepreneurial performance (Jorge-Moreno et al., 2012; Muafi, 2016; Muafi, 2009). The PBL on Economic Theory course was expected to affect students' IEO and became one of goal on business education in the Faculty of Economics Universitas Negeri Surabaya.

### Problem Based Learning (PBL)

According to Barrows and Tamblyn (1980, in Major et al. (2004), PBL improved reasoning skills of medical students in McMaster Medical School, Canada. They found that PBL applied in McMaster Medical School was able to not only improve problem-solving skills on students, but also develop meta-cognitive skills due to their ability in reasoning when handling complex problems. Thus, the rationalist study emerged an impulse connecting emotion and intelligence. Those proved that PBL was able to maintain stability and creation of obscure norms and values in community. According to Forsythe (2002) in The Handbook of Economics Lecturers mentioned that the PBL basis is on a student's learning by doing, meaning that this system focused on small group of students working together to respond or solve particular problems or task.

Boud and Feletti (1997 in Major et al. 2004) divided PBL stages into: 1) presenting problems to students (such as case, research paper, or video recording), 2) grouping students into fixed group, where they allow to organize ideas and prior knowledge, 3) carrying out discussion where students are given problem learning need to be determined and analyzed, 4) determining the problems solved and their level

of difficulty and necessity; both students and teachers discuss to determine the learning issues, and 5) exploring prior issues and integrating knowledge to the problem contexts. Therefore, students need to continually define learning problems, as those problems remain changing and exist. So, learning is defined as continuous process where new problems are occurred and need to be explored.

This study employed five stages referring to stages defined by Boud and Felletti, as: stage 1, determining problem orientation; stage 2, organizing learning problems; stage 3, assisting the study/group survey; stage 4, developing and presenting result of study/group survey; and stage 5, analyzing and evaluating process of problem-solving.

### Entrepreneurial Orientation (EO)

According to Bolton (2012), Entrepreneurial Orientation (EO) in Organizational level was defined as a process of strategy making which provides organization with entrepreneurial decisions and actions. Rauch et al (2009) stated that EO developed into a set of three to five behaviors generated from business entrepreneurial literature and business strategy (in Bolton, 2012). Those behaviors are innovativeness, risk-taking, proactiveness, competitive aggressiveness, and autonomy. Three of five behaviors are mostly used in study of EO, namely innovativeness, risk-taking, and proactiveness, whether two of five behaviors, autonomy and competitive aggressiveness are less used (Rauch et al, 2009; Lyon et al, 2000 in Bolton et al., 2012). EO dimension is used to measure individual behavior. Risk-taking and proactiveness are not only useful in organization but also in other activities. Individual risk-taking and proactiveness are clearly seen from one action, whether one is risk-taker or not and whether one is innovative or not. Some students prefer to work individually, and others prefer to work in group. In classroom activity, some students show aggressiveness and competitiveness to obtain the best result, although some others satisfy with average result. Those became the reason on why an active learning method affecting individual behavior is necessary designed for students IEO.

This study was referred to Bolton et al. (2012) to measure students' IEO on Economic Theory course. Indicators used are innovativeness, proactiveness, and risk-taking and those measured in ten items measuring individual entrepreneurship orientation, considering to the students' conditions who are not entrepreneur and do not have any competition or rivals.

Referring to Beddoes, et al. (2010), PBL is possibly applied nationally and in institutionally and PBL study supports professional skills, such as communication, ethics, information literacy, lifetime learning, project management, and teamwork. . Beddoes, et al. (2010) defined PBL educational goals as to: 1) develop contextual knowledge structure, 2) develop skills on problem solving and reasoning, 3) assist students on self-learning skills, 4) encourage learning motivation, and 5) develop collaboration skills.

### Hypothesis:

*Problem Based Learning (PBL) on Economic Theory course affects the Individual Entrepreneurial Orientation of Students.*

### Research method

This study used descriptive quantitative approach to describe the implementation of PBL on Economic Theory course designed in Semester Lesson Plan (SLP) and the achievement of students IEO after taking the course. The population was 112 students of academic year 2016 and 86 students were selected as sample. The sampling used purposive simple random sampling and Partial Least Square for its statistic technique. The data were collected through questionnaires and observation sheets with three-box method categories. Data were calculated using Structural Equation Modeling with SmartPLS.

### Result

#### Respondent Characteristics

Respondent characteristics were defined on gender, level of education, religion, tribe, GPA, parents' occupation, entrepreneurial experience, and entrepreneurial interest. Respondents were women as 67.4%; graduated from senior high school as 41.9% majoring science, 33.7% majoring social, and 24.4% graduating from vocational senior high school; were Muslims as 90.7%; were Javanese as 93.0%. Parents' occupation of the respondents were entrepreneur, as 55.8%; however, there was different result from

factual data and questionnaires, it found that although it was 73.3% of students whom parents are entrepreneur, 95.3% of 73.3% had no business. For respondents entrepreneurial experiences, 65.1% of students did not have any entrepreneurial experience. In term of entrepreneurial interest, 39.5% students interested in culinary business and 17.4% interested in other business.

### Stages of Problem Based Learning

In SLP (Semester Lesson Plan) of Economic Theory course, PBL was designed as learning method. The objectives of Economic Theory course are to strengthen students' knowledge on Economics as well as economic actions and to develop students behavior in economic actions perceived on input and output market.

There are five stages performed using PBL on Economic Theory course as: stage 1) lecturer explains target of study and divides students into groups to solve problems on selected topics; stage 2) lecturer assists students to determine problems (independently), and to plan action of problem-solving (in a group); stage 3) students (in group) collect information while they independently solve the problems and discuss the potential solution with their group; stage 4) students (in group) analyze the collected information, evaluate the information, solve problems relating to information, and draw conclusion; and stage 5) students (in group) present their conclusion and share the ideas with others to get other additional views or perspective. Table 1 shows the stages in conducting PBL on Economic Theory course.

### Descriptive Statistics Analysis Results

To find students' perspective in PBL to IEO, data analyzed using Three-Box method as seen on table 1 and 2.

Table 1. Description of PBL on Economic Theory Course

No	Stages and questions item	5	4	3	2	1	Average			
							Item	Indicators	Variables	
STAGE 1										
1	X1.1.1	54	30	2	0	0	4.60	4.41	4.20	
2	X1.1.2	22	60	4	0	0	4.21			
STAGE 2										
3	X1.2.1	35	40	7	4	0	4.23	4.15		
4	X1.2.2	22	54	10	0	0	4.14			
5	X1.2.3	25	44	16	1	0	4.08			
STAGE 3										
6	X1.3.1	32	35	15	4	0	4.10	4.09		
7	X1.3.2	25	43	18	0	0	4.08			
STAGE 4										
8	X1.4.1	28	45	12	1	0	4.16	4.21		
9	X1.4.2	25	45	16	0	0	4.10			
10	X1.4.3	33	47	6	0	0	4.31			
11	X1.4.4	30	48	8	0	0	4.26			
STAGE 5										
12	X1.5.1	27	45	9	5	0	4.09	4.13		
13	X1.5.2	32	39	13	2	0	4.17			

Source: data analysis

Table 2. Description of Students' IEO

No	Questions	5	4	3	2	1	Average		
							Items	Indicator	Variable
RISK-TAKING									
1	Y1.1.1	9	25	28	20	4	3.17	3.58	3.90
2	Y1.1.2	23	40	21	2	0	3.98		
3	Y1.1.3	13	36	27	9	1	3.59		
INNOVATIVENESS									
4	Y1.2.1	26	42	16	2	0	4.07	3.90	

5	Y1.2.2	12	38	33	3	0	3.69		
6	Y1.2.3	29	41	15	1	0	4.14		
7	Y1.2.4	16	34	31	5	0	3.71		
PROACTIVENESS									
8	Y1.3.1	25	49	11	1	0	4.14	4.24	
9	Y1.3.2	30	47	8	1	0	4.23		
10	Y1.3.3	41	34	11	0	0	4.35		

Source: data analysis

Table 1 shows that the average of indicators on stage 1 is 4.41; stage 2 is 4.15; stage 3 is 4.09; stage 4 is 4.21; and stage 5 is 4.13 meaning that students' perception on PBL is considered high. From table 2, students' IEO shows the average of indicators on risk-taking is 3.58; innovativeness is 3.90; and proactiveness is 4.24 meaning that students' IEO is considered high or categorized good.

To determine the relationship of each variable, Path Coefficients are used, as seen in table 3.

Table 3. Inner Model Test Results

Path	Original Sample (O)	Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics ( O/STERR )	Sig.
PBL -> IEO	0.445	0.490	0.071	0.133	6.331	0.001*

\*Sig. = significant at  $\alpha$  0.05

Table 3 shows that among variables, coefficient value was 0.445 considered positive (with sig = 0.001). It indicates that there is positive relationship between PBL to IEO. Therefore, the higher students' perception on PBL, the better result shows on students' IEO.

### Discussion

This study was conducted to test and analyzed whether PBL on Economic Theory course affects students' IEO. Data analysis showed that 5 stages on PBL were able to develop students understanding and skills on IEO. 3 of 5 Boddeus dimensions, innovativeness, risk-taking, and proactiveness, were used as indicators to measure the students' IEO.

The relationship among PBL variables was considered weak as 0.198 or 19.8% meaning that PBL is considered as weak for IEO. It was due to the population selected who was freshmen without any prior understanding on IEO and the lack of lecturer ability in selecting learning approach. Thus, building students' IEO required continuous study for years (from semester 1 to 7).

### Implication

#### Theory Implication

PBL on Economic theory course affected students IEO, although it was considered weak as it was only 0.0198 or 19.8%. However, the remains (80.2%) were not discussed in this study.

#### Managerial Implication

PBL allows lecturer to reorganize the SLP and design the learning duration and contents. IEO needs to be developed further, not only limited on Economic Theory course but also to other courses as IEO can be an institutional development model.

### Conclusion

PBL on Economic Theory course affected on students' IEO. However, it was considered weak as it was only 19.8% resulted from the analysis. Those results occurred due to the limitation of the study, especially on the population.

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