



Creative Thinking Development to Foster Economic Creative: Evidence of State University of Surabaya

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ABSTRACT

Development skill of creative thinking is very urgent to foster economic creative in economic education. Economic education the needs of problem base learning with scientific approach to foster economic creative and thinking skill of students in faculty of economic. The purposes of these studies were: (a) development thinking skill to foster economic creative of students, (b) development problem base learning to increase creative thinking, (c) applied scientific approach for development economic creative to foster students abilities in faculty of economic. The results of these studies have been developed: (1) development thinking skills tools increase creative economic abilities of student in faculty of economic, (2) problem base learning to increase creative thinking, (3) scientific approach can be tools to foster student abilities and increase quality of economic education.

Keywords: Economic Creative, Thinking Skill, Problem Base Learning

JEL Classification: A2

1. INTRODUCTION

1.1. Background

Problem base learning with scientific approach in university course goals to increase skill and abilities of student to foster creative economic skill. Economic education aims to establish the development potential of learners in order to become a human being faithful and devoted to knowledgeable skilled, creative thinking, independent and become entrepreneurship and accountable in their live. According to Carroll and Tani (2013) to realized objectives in the economic education conducted through mind process, attitude and skills. Meanwhile, Mahendra (2005) according to Government Regulation No. 19/2005, learning implemented interactively, inspiring, fun, challenging, motivating the students to be able to actively participate and provide enough space for innovation, creativity, and independence according to their talents, interests, and physical and psychological development of learners. These aligned with the development, it is necessary for learning design developmentally appropriate stage for students in university.

Problem base learning model is can be applicable to increase creative thinking of student in economic education. Problem base learning model with scientific approach, Ozgur (2013) says very effective to increase quality of economic education. In this model,

it was related and mutually overlaps that the last thing you want to be searched and selected by the teacher in the planning stages program. Like implementation, Patrick (2013) says, on problem base learning models within scientific approach learning model contains and conduct integrated ability of student which can be combined, including thinking ability, social ability, organizing ability in addition to focusing on economic education can be effectiveness.

Implementation of problem base learning model with scientific approach must be supported by the learning tools. Developing problem base learning and scientific approach model of learning in Indonesian accordance with the 2013 curriculum, research carried out to look for an alternative implementation of learning that can accommodate creative thinking developmental and holistic skill of student. Implementation of these learning orientation needs is necessary to balance competence, which in turn is expected to foster creative thinking ability of students in faculty of economic.

To improved ability to think still less attention (Ozгур, 2013), whereas ability to think hold important role and great in improving individuals quality. According to Koerselman (2013), in general people who have thinking ability like a formal reasoning is more successful in learning process, more to be able to solve problems and better to identify variables, testing hypotheses, and other

skill process. Beside thinking capability, the results of another study is positive behavior as very required by the students as life ability, not intentionally taught. Slavin (2011) says findings about development stage shows that model has potential to develop the meaning of the three learning outcomes above, think ability, creative thinking, and cognitive learning outcomes. Balance creative thinking and think ability to improve potential mind of student is economic education goals.

1.2. Problems

In this research, based on the background of the problem are formulated as follows:

1. How developing problem base learning model to foster economic creative in economic education?
2. How developing problem base learning to increase creative thinking of student in faculty of economic?
3. How to apply scientific approach for development economic education to foster creative economic ability of student in faculty of economic?

2. LITERATURE REVIEW

2.1. Problem Base Learning

Problem base learning is one of models in learning to increase creativity of student in teaching and learning. This concept has long been advanced by John Dewey as an attempt to integrate the development and growth of learners and his or her knowledge ability. According to Johnson (2008), integrated learning is a learning process by engaging or linking various subjects. Integrated learning refers to the nature of the developmental characteristics of learners. Psychological student development of students must be developing from the development of the creative thinking, social skill, and emotional, or otherwise. Any kind of development skill and ability in student is always related to one another. Hasan (2012) instruction about student development of that age is holistic, integrated with life experience and environment.

2.2. Scientific Approach

Implementation of scientific approach in teaching and learning of economic education will be effective and efficiency instructional.

2.3. Application of Problem Base Learning with Scientific Approach

Problem base learning with scientific approach concern of curriculum 2013. This learning model is importance to increase creative thinking and holistic ability of student in economic education goals. Typically, this problem base learning and scientific approach, can be development creativity and ability of student in economic education. The following is a map diagram of problem base learning with scientific approach model. Problem base learning model can be defined as learning that uses a scientific approach that begins with construction of the general themes and appeal to students with holistic ability.

Problem base learning with scientific approach as meaningfully for uses approach between inter-subject study, combining subjects with how to set curricular priorities and find ability, concepts and skill or ability in some areas of economic education. At type of this theme

related and to search or selected by the teacher in the implementation of learning. In this learning, teacher combines several ability that will be achieved in a basic discussion/sub-discussion. Ability can be combined include thinking ability, social ability, and creative thinking ability. According Hasan (2012) problem base learning allows students receive a meaningful experience and understand the whole concept is based on direct experience.

2.4. Support Learning Theory

There are several theories of learning are relevant to problem base learning and scientific approach, which these theories include the behaviorism theory, cognitivism, and constructivism.

Behaviorism theory argues that learning is a permanent change in behavior as a result of experience. Dewey says emphasis of this theory is that behavior change is real and measurable, while experience in question is the process of stimulus from the learning and responses of the studies (Anthony and Stephen, 2009).

Cognitive development theory contrast to behaviorism theory. Cognitive learning theory assume that learning process will occur when adjusted for physical and mental development were studied (Jean, 2008).

Constructivism theory argues that learning is active and knowledge gained by constructing information that obtained. Knowledge is not given and received, but actively constructed and contextual (Walter, 2009).

3. RESEARCH METHODS

3.1. Types and Research

Based on the problems studied, is classified as a type of research study which follow-up development with trial test using a one-group pre-test-post-test design (Tuckman, 2008). The study begins by developing problem base learning at the university course to foster creative thinking and holistic ability of student. That is consists of syllabus, lesson plans, materials/students books, media, student activity worksheet, and assessment sheet.

3.2. Research Design

Design of this research is the development research by using strategy that adapting instructional development cycle model that developed by Fenrich (2007). The steps are shown in Figure 1.

Activities of development research includes analysis phase, planning, design, development, implementation, evaluation and revision. Evaluation and revision is an ongoing activity conducted in each phase along the development cycle. Stages of learning tools development shown in Table 1.

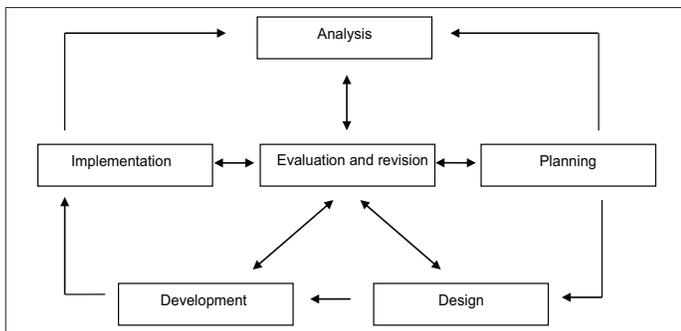
This study involves the creative thinking and skill ability of student in economic education program, Faculty of Economic, State University of Surabaya.

3.3. Place of Research

Place of this research in Class A/2013 for tools development and validation and class B/2013 to test the implementation and

Table 1: Learning tools development stages

Phase	Activities	Achieved target
Analysis	Identify the basic competency analysis of content standards Analyzes basic competency to determine indicators Formulate learning objectives	Selected the basic competency Basic competency indicator composed Learning objective composed
Planning	Structured teaching material package framework (plan, worksheet, materials, assessment) Structured research instrument framework	Package prototype Instrument framework composed
Development	Studying and revision planning phase result Writing draft 1: Planning, materials, worksheet, assessment Writing draft 1: Research instrument Reviewing internally and revising draft 1: Planning, materials, worksheet, assessment Reviewing internally and revising draft internally instrument draft 1 Reviewing externally and revising draft 1: Planning, materials, worksheet, assessment	Planning, materials, worksheet, assessment Draft 1: Planning, materials, worksheet, assessment Draft 1: Research instrument Draft 2: Planning, materials, worksheet, assessment Final draft of research instrument Draft final of planning, materials, worksheet, assessment
Implementation	Determining research location Lecturer coaching Learning in the classroom and observations Assessment Analysis and reflection	Program of studies in economic education, faculty of economic Trained/coaching for lecture Data about: Creative thinking, student activities, ability holistic of students Data: Creative thinking and holistic ability of students Input/suggestions about device in teaching and learning

Figure 1: Learning development cycle model (Fenrich, 2007)

dissemination. Second of place for this research in Economic Education Program, Faculty of Economic, State University of Surabaya.

3.4. Variable and Operational

Variables and operational definitions of each variable is explained as follows:

1. Learning device is a set of learning resources or learning tools that can help students learn and to perform learning activities that include syllabi, lesson plan student instructional, materials, student worksheet, and assessment
2. Problem base learning model with scientific approach for the economic education program, is the form of packaging in the form of learning
3. Creative thinking is a mental process that is well organized and play a role in the decision-making process to solve problems and interpreting the data in scientific approach activities.

3.5. Research Instruments

3.5.1. Problem base learning test results

This test follows the pattern of a test developed by SOLO taxonomy, so it also can be used for two purposes, namely to measure creative thinking and holistic ability of student. To

calculate sensitivity of the grain problem, according to the formula used Groulund (2006). According to Mudrajad (2007), the criteria used to declare that the items were sensitive or insensitive to the effects of learning if $S \geq 0.30$.

3.5.2. Observation sheet

In this study observation sheet used to obtain data about creative thinking and motivation of students and feasibility study. Observation instrument reliability is calculated with inter observer agreement techniques.

3.5.3. Holistic ability questionnaire

This instrument was a questionnaire given to the students after learning to watched about holistic ability of student.

3.6. Data Collection and Analysis

The data were statistically analyzed descriptively. Data collection was conducted during the second semester of 2013/2014 years. Techniques used include: (1) test, (2) observation, (3) interview, and (4) questionnaire.

4. RESULTS AND DISCUSSION

4.1. Results

4.1.1. Results of Learning Implementation

4.1.1.1. Problem Base Learning Implementation

Learning implementation is defined as the percentage of learning steps that have been designed in the lesson plan is done by the lecturer. In this study implementation of observation, observation sheets used are plan of learning itself quoted from the learning scenario. Only in the observation sheet was added 2 columns to the right of learning scenarios for each column titled executed and scores (4, 3, 2, 1).

Recapitulation of problem base learning implementation with scientific approach, are presented in Table 2.

The data in Table 2 indicates that learning is carried out has been done by the lecturer just still vary in quality, however, all stages quality well executed and very well.

4.1.1.2. Student activities

Student activities in this study is defined as a social activities that includes: Submit/ask questions, collaborate, express opinions/ ideas are in essence a holistic ability.

Table 2: Recapitulation of problem base learning implementation

No.	Syntax of problem base learning model	Score mean				
		G1	G2	G3	G4	G5
1.	Orient students to the problem base learning and presents the objectives	3.50	3.63	3.65	3.80	3.70
2.	Designing the learning process in the form of observations	3.50	3.63	3.60	3.89	3.75
3.	Guiding students	3.89	3.87	3.89	3.75	3.89
4.	Communicate results	3.75	3.89	3.75	3.89	3.5
5.	Establish a network of concepts	3.89	3.75	3.87	3.75	3.6
6.	Conclusion	3.50	3.63	3.60	3.89	3.75
7.	Evaluation and reflection	3.75	3.92	3.65	3.60	3.89

G: Goals

Table 3: Type and distribution of student activities appearance

Activities of student	Activity target school in learning				
	G1	G2	G3	G4	G5
Delivering/ask questions	6.00	9.00	11.00	7.50	8.00
Express opinions/ideas	7.50	6.50	8.50	7.10	9.50
Pointing sensitivity phenomenon is understood, such as joy, crying, stunned, even speechless	17.00	14.00	13.00	7.80	10.00
Listen/pay attention to the lecture's explanation	19.50	12.50	20.50	22.00	23.50
Answering questions given by the lecture orally	5.00	7.00	8.00	7.30	9.00
Observation	16.50	22.50	11.50	8.20	11.50
Conducting discussions/ collaborate with peers and lecturers/doing worksheet	15.00	18.00	12.0	15.90	12.00
Presenting the working group results	7.50	9.00	7.50	10.20	8.50
Establish a network of concepts	3.50	8.00	7.0	8.20	8.00
Formulate conclusions	2.50	1.50	3.0	3.80	2.00
Total	100.0	100.0	100.0	100.0	100.0

G: Goals

Table 4: Results of problem base learning in Class A 2013

Subject	Score of Topic 1					Score of Topic 2					Average
	Early test	Final test	Mean	% Result	Remark	Early test	Final test	Mean	% Result	Remark	
1	78	84	81.0	6	T	80	86	83.0	6	T	82.0
2	62	78	70.0	16	TT	58	84	71.0	26	TT	70.5
3	82	90	86.0	8	T	88	96	92.0	8	T	89.0
4	78	84	81.0	6	T	74	86	80.0	12	T	80.5
5	76	84	80.0	8	T	72	88	80.0	16	T	80.0
6	84	90	87.0	6	T	80	92	86.0	12	T	86.5
Mean	76.7	85.0	80.8			75.3	88.7	82.0			81.4
%	77	85	81			75	89	82			
Classical completeness				83							83

Data in Table 3 represent percentage of student activities that appears to see a trend emerging activities. Selected activities are activities that are relevant to the problem base learning.

4.1.1.3. Creative thinking in learning

There are variations in the observation creative thinking of students in the target education. Variations arise as a result of local conditions that are conducive to develop certain creative economic. The growth of this creative thinking from the state that they are less creative and less ability.

4.1.1.4. Mastery of concepts

Student in mastering concepts can be traced from indicators of achievement/learning objectives. Table 4 shows recapitulation of students proportion who achieve the goals/indicators before and after learning.

Based on Table 4, it is known that the test results of students' learning is limited trial in class A/2013 faculty of economic performed on three semester students. Score obtained by the student in problem base learning was Topic 1 has increased compared to Topic 1. There was one student who did not complete at Topic 1 while at Topic 2 all students have the determined standard score minimalist. The highest score achieved by students at Topic 1 as 90 obtained by two people while on Topic 2 there is 96 obtained the highest score achieved by one student. The mean score obtained by the students at Topic 1 is 81.5 while the average at Topic 2 is 83.3. Thus, there is an increase in the average value of Topic 2.

4.1.1.5. Holistic ability

Students holistic ability were measured using SOLO tax on my reference. Therefore used is essay test type because this test gives wide opportunities for students to answer questions with different responses on the quality and breadth of response is influenced by her or his holistic ability. Analysis of the students responses to be guided by the rubric of creative thinking. Students can be grouped into five groups according to the capacity thinking of student.

Appears that students holistic ability significantly increase from category multi structural into abstract extended categories. At the time of the pre-test, there was the highest chart multi structural levels, while highest post-test chart is extended abstract level.

4.2. Research Discussion

In terms of the urgency of the study, all the results are designed in the proposed research have been achieved, although many barrier.

The role of graduate students in the research team provide highly synergistic impact. On the one hand, students want to quickly complete the study, while on the other hand they have not been rich with experience and has not been able to see urgent problems to be studied. Mutualistic symbiosis between faculty economic and students in the scheme of this research has been able to facilitate process of implementation research.

Therefore, pattern of the student empowerment is necessary getting further attention and the procedure more standardized. However, existence of such research collaborations such as this demands good management of, so while ensuring the boundaries of the parent study and further research.

4.2.1. Discussion results of problem base learning

Problem base learning tools developed in this study by the reviewer declared theoretical valid. It can be achieved particularly closely related to the mechanism of development and reviewers tools regulated as follows:

- Before developing the tools, the student developer (researchers) was introduced by the model (prototype) tools that have been developed in the parent study. Through discussion and questioning, students will be expected to researchers' understanding about everything had been achieved
- Draft appropriate tools as example that developed to be a Draft I
- Initial study by colleagues in the research group. Followed by a revision in order to obtain the Draft II tools
- The first study by reviewers (experts) to look at all the aspects that can be improved as the format, content, typographical arrangement, until the language in this stage a reviewer give a variety of considerations, suggestions and comments that further improvements are discussed in the research team, followed by revisions, in order to obtain the third draft
- Draft III given to experts for a second time for a final review of the feasibility assessment as well.

This mechanism is believed to be one contributing factor why the learning that has been developed to be feasible, meet the requirements to apply and get a good score and classified as very good. Another thing is that many also assist faculty research collaboration with the student researcher. Researchers student is the teacher who has experience on the real situation in their schools, while researchers relative lecturer has experience in the field of theoretical. Combined two characteristics that help improve quality of the tools. It is also supported by previous development experience as done by previous researchers.

4.2.2. Discussion result of holistic ability

Data recapitulation of problem base learning implementation observation as presented in Table 5 shows that all learning is done has been performed by the teacher just still very in quality, however, all the syntax implemented with good quality and very good. This conclusion is drawn based on a conversion score developed by Hobri (2011) who states that: score 1.00-1.49 is not good and <20% plan implemented; scores from 1.50 to 2.49 is less, because more than 80% of the components executed, but not

yet completed; scores from 2.50 to 3.49 is good, more than 80% is carried out largely according to plan in terms of quality; scores from 3.50 to 4.00 is very good, more than 80% of components implemented, complete and systematic.

There are several factors that support adherence to the high proportion of learning implementation, for example: (a) discussion held tools while learning socialization, creative learning stages are described; (b) modeling of learning while coaching students who will act as a teacher; (c) as a learning guide, teacher lesson plans acceptable to hold when implementing learning; provided instructional films can be observed teachers before they appear, so that they can be observed with the details of each stage of learning.

4.2.3. Student activities

Data in Table 4 is the percentage of students who emerge from the activity of target schools to look at the emerging trend of activity. Activities are selected only relevant to this study. Activities that cannot be put in the kind of activity that is put in the type of near activity. From these data generally remained dominant students hear the teacher's explanation. It is not easy to realize because elementary students still need direction. But that is very encouraging students activities in the group to make observations and answer questions the students during the learning activity dominates.

Learning could be take place such as hope, of course it is much supported because the teachers are the people who participate to develop learning tools in question, so that it knows exactly what is desired.

4.2.4. Learning outcomes discussion: creative economic

A positive attitude concern and tolerant also experienced significant change was observed after a few weeks of concern and tolerant attitude shows the percentage of students who are ficant changes. Shows the difference in orientation of students towards tolerance and concern, which is less than the tolerance/concern becomes very concerned/tolerant.

Problem base learning represent creative learning that is developed in addition to achieving students comprehensive ability, who not only teaches academic aspect is also to holistic ability, and manners. Meaning contained in the phenomenon being studied, a communicative message to be conveyed to the students to teach a holistic ability.

By listening, reading, and thinking about the message it will motivate students lead to a shift in attitude. One effort that is changing attitudes of individuals by incorporating ideas, thoughts,

Table 5: Percentage holistic ability

Level of holistic ability	Percentage of respondents in holistic ability level (%)	
	Pre-test	Post-test
Prestructural	12.00	2.67
Unistructural	21.00	6.00
Multistructural	35.30	17.70
Relational	14.70	35.30
Extended abstract	2.30	47.70

opinions, and even new facts through communicative messages or often called a strategy of persuasion. The message conveyed by intentional intended to cause self-contradiction in the creativities of the individual, thus destabilizing attitudes and ultimately the chance of a shift or change in knowledge.

4.2.5. *Mastery concepts of creative economic*

Mastery of concepts students explore indicators of achievement/learning objectives. Table 4 shows recapitulation proportion of students who achieve goals/indicators before and after learning that provide information that is increase number of indicators of learning on all three topics learning completed. The results of data calculation results obtained for each student in each school obtained between 35 and 47, thus influence the application of this model is still in moderate levels, refer to the calibration scale.

Increased ability to master the concept can be understood as the beginning of this model is actually a scientific approach to learning. Found the best way to teach science is through scientific method as it was found. As we all know science is found through a scientific approach to apply the ability of scientific approach.

4.3. **Holistic Ability**

Analysis of the students responses to be guided by the rubric of creative thinking. Students can be grouped students into five groups according to the capacity to think, namely: prestructural, unstructural, multi structural, relational, and extended abstract. Based on the thinking flow, increasing student thinking ability as applied learning model following meanings. This model Syntax 1-5 is actually an application of process ability, which more precisely formulate problem, design the problem solving, and reporting its results. Thus all the steps 1-5 have occurred creative thinking in students and holistic ability.

5. CLOSING

5.1. **Conclusion**

Research in order to developed the problem base learning for creative economic infaculty of economic has successfully achieved as follows:

1. Problem base learning tools increase creative economic and holistic ability of students in faculty of economic
2. Problem base learning model can be increase creative thinking of students
3. Scientific approach can be tools to increase holistic ability in economic education
4. Implementation of problem base learning with scientific approach have successfully developed creative economic at economic education in faculty of economic.

5.2. **Suggestions**

1. Based on the conclusions and experience of research, applied following suggestions
2. Developed creative thinking suggested at creative economic because can be foster creativities in economic education in faculty of economic

3. Developed problem base learning suggested to increase creative thinking students
4. Scientific approach in learning suggested for increase quality of economic education
5. Problem base learning with scientific approach suggested in economic education because have successfully to improved creative economic ability of student in faculty of economic.

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