

# The Use of Problem Solving Method in Increasing Students' Thinking Ability Analysis

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**Keywords:** Learning activities, analytical thinking, and problem solving.

**Abstract:** This research is motivated by the low condition of student learning outcomes in analytical thinking ability which become the main competence in economic subjects. The aim of this research is to know whether the use of problem solving method can improve students' analysis ability. The research used Classroom Action Research with two cycles in Class XI Social Science of UPI Laboratory High School. Data of learning result in though by using descriptive method with technique of mean number and percentage. The results showed that the use of effective problem-solving methods can improve students' learning activities and students' analytical skills, as seen from the increasing percentage of students who are active in learning and the number of students who are able to answer problem-solving cases. Therefore, this method can be an option for teachers in teaching economic material that has the characteristics of problem solving.

## 1 INTRODUCTION

The problem with economic education is the same as that of other social sciences. Economic problems have multidimensional problems, Multi-dimensional problems will require a multidimensional theoretical answer also (Otsch and Kapeller, 2010).

Economic Learning equips students with analytical skills and problem-solving abilities that are oriented towards problem-solving skills. Both of these capabilities are high-order thinking required by Curriculum applicable in Indonesia. However, the results of this study are still low, this also indicates the low ability to think problem solving that requires students to think critically. Still less problem solving in formal education. Because of less understanding of teachers, and individual student factors may affect the problem-solving process (Jonassen, 2000).

On the other hand, economic learning materials are more charged with analytical skills that bring students to solve problems (Mergendoller, et.al, 2001; Bryn Mawr, 2007). For that required professional teachers who can package the learning to be effective, professional teachers with good competence is very supportive of educational success (Unnandt & Boonphadung, 2015, Shukla, 2005). A professional economics teacher will package economic learning

by choosing approaches and problem-solving methods. Economic learning needs to be developed towards learning that triggers creativity, critical thinking and analytical (Beaudin, et.al. 2017).

A suitable learning for that is problem-solving learning, as problem solving is seen as more effective in economic learning than lectures and discussions, and problem-solving learning is appropriate for analytical and critical thinking (Mergendoller, et.al, 2001; Voss, 1987). Economic learning is considered effective if using problem-based learning approach with problem-solving methods, considering the characteristics of Economics Subjects is: 1) depart from fact or symptoms real economy; 2) Economic subjects develop theories to explain facts rationally; 3) the analysis used in economics is the method of problem solving; 4) The problem-solving method is suitable for use in economic analysis because the object in economics is the basic economic problem; 5) The essence of economics is to choose the best alternative; and 6) The birth of economics because of the scarcity of the source of the satisfaction of human needs (Budiwati, N and Permana L, 2010).

Economic learning with problem-solving methods is based on a constructivism theory that emphasizes learning processes, not on outcomes in the form of learning behaviors. According to

constructivism theory, students use their cognitive processes to form an understanding of teaching materials, so that the assessment of learning is oriented to Process assessment in addition to result's assessment. The constructivism approach supports student centered curriculum and instruction rather than teacher-centered patterns. Students are key in learning. Teachers who engage in classroom activities are based on constructivism, knowing that learning is a process. Make sense actively, where the person learning is not a passive recipient of information (Parkay & Stanford, 2008).

Several studies have shown that the quality of teaching and teacher competence is considered the most powerful predictor of student success (Shukla, 2009; Bulger, et al. 2002). Related to this problem Slavin (2011) says: To teach effectively, the subject matter knowledge is not the issue of someone who becomes a walking encyclopedia. Effective teachers not only know the subject matter of their subjects but also can convey their knowledge to students.

Teachers play a role in practicing high-order thinking skills of students, through the provision of learning experiences and providing opportunities for students to develop their thinking skills. Problem solving method is a way that teachers do to deliver teaching materials and improve problem-solving skills through thinking analysis, not feeding students with as many teaching materials. The importance of the ability to think in learning as described Piaget (in Trianto, 2009), namely the learning process occurs when the process of data processing actively from the learners.

Active data processing is a continuation of the activities of students looking for information which then proceed to the discovery of new ideas or ideas. Piaget's theory also argues that everyone has had a basic intellectual capacity from birth, but at different levels. This intellectual capacity is the basis of a person in receiving information, managing information and making decisions.

Problem-based learning is a learning that comes from problems, which invites students to solve problems by identifying and gathering information so that students will find their own way of learning. This classroom action research, trying to answer the question of whether the use of learning method & problem solving can improve learning activities and improve students' analytical thinking skills?

## 2 METHODS

This research is a type of classroom action research conducted on class XI of Social Sciences of Senior High School of UPI Laboratory, with the factors studied are (1) student and teacher activity (2) Learning result of student's analytical thinking ability. Type of data obtained and collected by the researcher in the form of observation sheet and student learning outcomes to know how when the research took place in relation to the role of teachers and student involvement in learning, with tools in the form of tests (about pre-test and post-test) and non-Tests (observations, interviews and documentation). Test result data will be analyzed with descriptive statistics such as averages and percentages (%). While data obtained from observation and interview will be analyzed quantitatively. Like most classroom action research, this study is designed with 3 cycles, which consists of plan, action and reflection activities.

The process of conducting the research using the following cycles:

### 2.1 Cycle I

- Plan: (1) Looking for data related to the use of the problem solving method of learning approach. ; (2) Teachers studying class XI the Senior High School UPI Laboratory, as well as preparing lesson plans with economic problem solving materials.
- Action: (1) The teacher delivers or introduces topics, lesson materials, goals learning; (2) Teachers using learning method Problem solving in economic learning, things teachers should prepare are: (a) Master establishes a group; Groups of students consisting of 4 or 5 people; Each group will solve the problems presented by the teacher. (b) The teacher provides stimulus / motivation to deliver the students to connect with the problem to be provided. Then the teacher presents the problem; (3) The teacher guides the students during the learning process and helps to change the students' thinking thoroughly. The activities that occur during the process of problem-based learning are as follows: Students discuss and keep a record of what information / facts they can get from problems they read. Next, students identify and formulate the problem. (c) Students collect information relating to the problem. This is done by identifying what concepts / principles

they should learn, what learning resources they will use, and what they should do. After collecting information, students attempt to formulate some troubleshooting solutions and identify them. (d) Students exchange information with their group of friends to select and decide the best alternative from some alternative problem solving solution that has been formulated. (e) Each group presents the results to the other group as an evaluation of the results of its work. After the student presents his or her work result, the teacher asks questions; Questions that are metacognitive and reflective in order to strengthen clarity.

- Observation: (1) Conducting observation of learning activity of economic problem matter with approach of problem solving learning method; (2) Observation of students' thinking ability before and after use of problem solving learning method.
- Reflection: Reflection is done after making observations. If the action has not been achieved optimally, then it needs improvement in cycle II.

## 2.2 Cycle II

Implemented as in cycle I, in this research stops at cycle II, because after observation and reflection is obtained result that learning has succeeded in improving learning activity and result of learning ability of student analysis, so activity stopped at cycle II.

Table 1: Results of learning ability analysis thinking using problem solving method.

Condition	Low	High	Ave- rage	% Achievement of minimum value criteria (score = 70)	
				≥	<
				Pra Cycle	30
Cycle I	45	86	70	52	58
Cycle II	60	90	75	79	21

Table 1 shows the value obtained by the students, the value before the learning using problem solving method and the learning time using problem solving method in cycle I and cycle II. There is a significant increase of value from pre cycle I and cycle I, while from cycle I to cycle II also there is an increase, although not as big as in cycle I. The number that meets the minimum value criteria also has a significant increase, at the end of the cycle only 21%

or 6 of 29 students whose value is still below the minimum value criterion.

## 3 RESULTS AND DISCUSSION

### 3.1 Results

#### 3.1.1 Results Cycle I

After the implementation of the planning and action on cycle I, found the fact that the data obtained there are some discrepancies between the planning, action and objectives of the research, namely:

- Some students who previously tended to be passive, now seen already active, at least actively give opinion to the working group.
- Classroom conditions become more vibrant and vibrant, as teachers reward groups that are all active members.
- Students are more excited even though entirely entrenched, because it is allowed to explore material from the internet by using their respective mobile phones.
- As the presentation of the results of the discussion analyzed the problems associated with the distribution of national income, some students enthusiastically listened to his friend's presentation.
- Although not yet accustomed to the evaluation given by the teacher in the form of a matter of analysis, still tried by the students to be completed, and it turns out the results obtained quite encouraging because almost 50% of students achieve scores above the minimum criteria.

#### 3.1.2 Results Cycle II

A After the implementation of the planning and action in cycle II, found the fact that the data obtained there are some discrepancies between the planning, action and research objectives, namely:

- Students who tend to be passive in cycle I, appear to have begun to decrease, meaning that students are more active in giving opinion to the working group Classroom conditions become more vibrant and vibrant.
- As the presentation of the results of the discussion analyzed the problems associated with the distribution of national income, some students enthusiastically listened and commented on his friend's presentation.

- Students are seen accustomed to carry out evaluation given by teachers in the form of problem analysis, and it turns out that the results obtained quite boasted because there is a significant increase of students.

### 3.2 Discussion

The conclusion obtained from the experiment using problem solving method is that this method can increase student learning activity and achievement of value. This is in line with the purpose of using problem solving method, which in addition to increase student learning activities as well as to improve learning outcomes, especially the ability to analyze (Beaudin, et.al, 2017). The use of problem solving method is not conventional, because conventional problem solving is used through discussion, so there needs to be a modification in using problem solving method (D'Zurilla, T. J., & Goldfried, M. R., 1971; Sweller, 1988).

The ability of teachers in encouraging students to be active in the thinking process becomes the core of problem solving, because the advantages of this method is the advantage of the problem solving method is to stimulate the development of students' creative thinking skills and thoroughly so that students can have the ability to solve economic problems in real life, Besides the problem-based learning is an authentic approach with the intent to compose their own knowledge (Arends, 2007; Hamiyah & Jauhar, 2014).

That method of problem solving can increase student learning activity, of course very dependent on teacher ability to organize learning, let alone this method requires ability of student academic above average. In addition, even if economic learning is loaded with problem solving, it does not mean that this method is suitable for all materials, it must be seen that its material characteristics contain problem solving. This should be the focus for teachers in developing their learning Problem solving involves important cognitive, affective, and conative processes, and therefore requires real instructional support. (Jonassen, 2000).

Therefore, although effective problem solving methods to improve learning outcomes and ability to analyze, still requires the creativity of teachers to be able to create effective learning. It should be remembered that economic learning should be able to bring students to economic thinking that brings students into a rational and economic literate (Schug and Wood, 2011).

In addition, it should be remembered that there is no perfect learning method, so in the implementation of the teacher must be creative to create an interesting

learning in line with the characteristics and objectives of each teaching material, for example by using variations and modification methods. In this case collaborative learning becomes an alternative chosen by the teacher (Barkley, et.al, 2005).

## 4 CONCLUSIONS

This study shows that the use of problem solving methods in economic subjects can encourage student learning activities, and simultaneously improve learning outcomes especially in the ability to analyze. However, to use the problem solving method effectively, it requires the teacher to be creative in order to modify the use of this method. This is because conventional problem solving methods are not effective in creating analytical thinking skills. The use of problem solving method in economic learning is only suitable for teaching materials containing problem solving content. In addition, the use of problem solving method requires students who have academic ability above average.

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