Problem Based-learning For Improving Accounting Student's Critical Thinking Skill

Primasa Minerva Nagari*, Mika Marsely, Umi Nuraini
Faculty of Economics Universitas Negeri Malang

Keywords : CRitical thinking, problem-based learning, accounting education.

Abstract : The research was classroom action research. This paper aims to improve student's critical thinking skill with problem-based learning. This research did in The Accounting Department in Universitas Negeri Malang. The subject in this action research was offering HH as many as 40 students who were taking of Management Accounting course. The data was taken from the student population in S1 Accounting program. The data techniques in this research were observation, interview, and documentation. Data analysis techniques were using qualitative analysis, including data reduction, data display, and verification. The result of data analysis known that action research by using problem-based learning lasted for three cycles, each cycle consists of four meeting. Implementation of problem-based learning can improve students' critical thinking skill with special cases in the learning process.

1 INTRODUCTION

Along with the times, students are not only required to have cognitive abilities, but also critical thinking skills. Therefore, students need to build these critical thinking abilities, especially for prospective accountants who later in the world of work must be able to make decisions in carrying out their work. Lecturers as educators must be able to find out what learning solutions are suitable for building students' abilities, especially critical thinking skills. In the accounting department, students must be educated to be an accountant candidate who is able to make the right decisions, one of which is through critical thinking.

Based on preliminary studies made by researchers on students majoring in accounting at the Faculty of Economics, Malang State University, showed that learning Management Accounting still tends to be a teacher center so that students are less active in learning, so they cannot build abilities other than cognitive. When lecturers explain in the classroom, students tend to pay less attention, speak for themselves, and some even sleepy. So that the results of the cognitive evaluation and other abilities are less satisfying. Teacher center learning allows students to not pay attention when the lecturer explains and does not do scientific activities in the classroom. Thus, all this time students do not show their critical thinking skills in learning Management Accounting.

After conducting preliminary studies, the researcher will provide treatment for students majoring in accounting in the Management Accounting course. The course requires students' critical thinking skills, so it will be useful for students to graduate or become accountants later. Based on these problems, the researchers decided to use a problem-based learning model in management accounting learning that would be able to build critical thinking skills of students majoring in accounting at the Faculty of Economics, Universitas Negeri Malang.

2 LITERATURE REVIEW

2.1 Problem-Based Learning

Problem-based learning is a method that can be used to identify students who learn and understand problems, and learn (teaching and 1996, n.d.) (Duch, 1996). Problem-based learning is based on research results (H. Barrows and Tamblyn, 1980), and (Barret and Moore, 2011) and was first applied in the 60s. Problem-based learning is learning to create an

Nagari, P., Marsely, M. and Nuraini, U.
Problem Based-learning for Improving Accounting Students's Critical Thinking Skill.
DOI: 10.5220/0008786100740078
In *Proceedings of the 2nd International Research Conference on Economics and Business (IRCEB 2018)*, pages 74-78
ISBN: 978-989-758-428-2

active, collaborative and authentic learning environment for students. Problem-based learning encourages participants to engage in activities that cause problems, collect data, and analyze data.

According to (Chen, Lin, and Chang, 2011) problem-based learning is an instructional method in which students learn by inspiration, group thinking, and using related information. To solve problems in either real or hypothetical problems, students are trained to synthesize their prior knowledge and skills to apply them to the problem. Whereas according to (Yeo, 2007) the problem of participant's absent learning increased capacity and propensity to learn through the interplay of adaptive and generative learning. In line with Chen and Yeo, (Beaumont, Owens, Barret-Baxendale, and Norton, 2008) suggests that "*The learning that results from working toward the understanding of a problem. The problem is encountered first in the learning process*."

Characteristics of problem-based learning according to the theory developed (H. S. Barrows, 1996):

1. *Learning is student-centered*
   The learning process in problem-based learning focuses more on students as students. Thus, problem-based learning is also supported by the constructivist theory where students are expected to develop their own knowledge.
2. *Authentic problem form the organizing focus for learning*
   The problem presented to students is an authentic problem so that students can easily understand the problem.
3. *New information is acquired through self directed learning*
   In the problem-solving process, students may not know and understand all the prerequisite knowledge, so that students try to find their own through the source, either from books or other information.
4. *Learning occurs in small groups*
   In order for the scientific interaction to occur and exchange ideas in an effort to build collaborative knowledge, problem-based learning is carried out in small groups. The group that is made demands a clear division of tasks and goal setting.
5. *Teachers act as facilitators*
   In the implementation of problem-based learning, the teacher only acts as a facilitator. However, the teacher must always monitor student activities and encourage students to achieve the goals to be achieved.

(Barret and Moore, 2011) describes the stages of problem-based learning as follows:

1. Students are given problems by the teacher (or problems obtained from the experience of the students themselves).
2. Students conduct discussions in small groups and do the following:
   a. Clarify the problem
   b. Identify problems
   c. Exchange ideas based on knowledge
   d. Establish the things needed to solve the problem
   e. Establish the things that must be done to solve the problem
3. Students conduct studies independently related to problems that must be resolved. They can do this by searching for resources in libraries, databases, the internet, personal sources or conducting observations.
4. Students return to the original problem-based learning group to exchange information, learn peers, and work on solving problems.
5. Students present the solutions they find.
6. Students assisted by the teacher do an evaluation related to all learning activities. This includes the extent to which the knowledge gained by the students and the role of each student in the group.

Table 1: Strengths and Weaknesses of Problem Based Learning

No.	Strengths	Weakness
1.	Student-centered	Lecturers cannot fully "patronize"
2.	Active learning, developing knowledge, and retention and developing skills "life-long learning"	It takes a lot of time during the process
3.	Facilities from PBL are integrated with the curriculum	Students need to access the same library and computer simultaneously
4.	PBL is very pleasant for students and lecturers	Students may lack access to specific explanations from lecturers

Source: Adaptation from Wood (2003)

2.2 Critical Thinking

According to (Kurfiss, 1988) critical thinking is a rational response to questions that cannot be answered definitively and for all relevant information may not be available. This is defined as

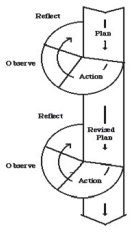
an investigation whose purpose is to explore problems to conclusions that integrate all available information and therefore can be convincingly justified.

In line with the Kurfis, (Jackson, 2015) also argues that critical thinking can analyze the facts then make some ideas and maintain the idea then make comparisons. By making several comparisons we can draw conclusions and make a solution to the problem. (Halpern, 2014) explains that Critical thinking is sometimes taught as a specific skill through classroom instruction.

Critical thinking examines assumptions, discerns hidden values, evaluates evidence and assesses conclusions (Education and 2004, n.d.). (Warnick and Inch, 1994) explains that critical thinking as the ability to explore a problem, question, or situation; to integrate information about the issue under review and arrive at a solution to justify one 's position. In addition, according to (Moore, 2013) critical thinking is a form of rationality, with acquiring students a more relative, provisional view of knowledge and critiquing material on the basis of such knowledge. It relates to making judgments based on a practical and specialized knowledge that is linked to reliability, truthfulness, and usefulness (Moore, 2013).

3 METHODS

This research is a Class Action Research (CAR). The research subjects used in this study were 2016 GG offering students of the economics faculty of the poor state university majoring in Management Accounting courses. Classroom Action Research uses three cycles in which each cycle consists of four meetings conducted in one semester. Action research model The class used in this study is a model of (Altrichter, Kemmis, McTaggart, and Zuber-Skerritt, 2002) where each cycle consists of four stages, namely planning, implementing, observing, and reflecting (Arikunto, 2015: 41).



Figures 1: Classroom Action Research Model “Kemmis and Mc. Taggart

The data used in this classroom action research was obtained from management accounting lecturers and students who were taking management accounting courses. Data collection techniques used include interviews, observation, and also documentation. Data analysis used a qualitative approach is data reduction, data display, and data verification.

4 FINDINGS AND DISCUSSION

Classroom action research that had been conducted consists of three cycles, where each cycle consists of planning, implementing, observing and reflecting. The first thing done in the first cycle is choosing the right method used in the classroom to improve students' critical thinking skills. In the other side, the lecturers have to prepare teaching needs such as lecture units, observation sheets, and tools for documenting this class action research. The initial activities carried out in this case are apperception, the core activities are the implementation of problem-based learning, and the closing activities are lecturers evaluation of the student discussion results in problem-based learning. During the observation phase, every behavior that showed by the students will be explained especially how their attitude in expressing critical opinions. In the reflection stage, the discussion group should spread so that more critical students can share with students who tend to be passive. The opportunity to answer the discussion questions is given more to the passive group so that the passive and less critical groups are expected to be more comfortable to express their opinions with critical thinking. This statement in line with (Natale and Ricci, 2006) that critical thinking within teams will improve organizational performance. Based on the observations, cases or problems given at the time of the implementation of problem-based learning by lecturers tend to be simple, so the students can not express their critical thinking maximally. Based on the first cycle, it is necessary to do the second cycle to improve the management of learning that occurs in the first cycle.

After being implemented in the first cycle for four meetings and found to be unsatisfactory, the lecturer conducted the second cycle. The second cycle is the same with the first cycle where the stages are planning, observation, and reflecting phase. At the planning stage, the lecturer guides the students to form groups randomly so that all students can express their critical thoughts. Because if they

choose for themselves, students who are less active will just be quiet or unable to express their critical thoughts. In the implementation step, there are beginning activities (apperception by the lecturers), and then core and closing activities. When conducting observations, the lecturer records and examines the students' behavior when discussing problem-based learning. In the second cycle at the reflection phase, the lecturers found several problems in the class, where some students still tended to be less able to express their critical flow even though the cases given by the lecturers were more difficult. So, the third cycle is needed to overcome problems in the second cycle.

In the third cycle, basically the same as the previous cycles that consisting of the planning stage, implementing, observation, and reflecting stage. In the planning stage, the lecturer prepares a plan that has been revealed in the reflection of the second cycle to be stated in the lecture event unit in the third cycle. At the implementation stage, the lecturer conducts the initial activities in the form of apperception, the core activities are the implementation of problem-based learning, and closing activities. The observation stage explained every behavior that appears during the third cycle and what forms of critical thinking that arises during problem-based learning applied. In the reflection phase of the third cycle shows that the implementation of the lectures went smoothly and well. This can be seen from the observations of researchers and observers showing that when the student's lecture activities take place in the classroom, they are enthusiastic and actively participating in the teaching and learning process and the crowded student conditions have been reduced far compared to the meetings at the beginning of learning. This shows that there is a stronger urge to learn to express their critical thinking, in other words, students' critical thinking increases than before. So it can be concluded that problem-based learning can improve students' critical thinking skills. Based on the analysis above, it can be concluded that the implementation of the third cycle does not need to be repeated to solve problems in the class.

Table 2: Observation results

Cycle Phase	Case	The problem in the class
1	Information: Sales (1.000 unit @Rp 400) = Rp 400.000 Variable costs = Rp 325.000 Contribution margin Rp 75.000 Fix costs = Rp 45.000 Operating income Rp 30.000 Calculate the amount of break-even in units!	Students tend to be passive because the discussion groups are less conditioned and the case is less difficult
2	Based on the first cycle phase case, suppose that the tax rate is 20%, how many units must be sold to get a profit after tax of Rp 100,000?	Students still hard to put forward their critical circuits even though the cases given by lecturers are more difficult
3	Athar Company produces two products: A and B. The following information related to each product line: A B Sales revenue Rp 135.000 Rp 15.000 Variable costs (Rp 50.000) (Rp 8.600) Contribution margin Rp 85.000 Rp 6.400 Direct fix costs (Rp 3.000) (Rp 1.200) Common fixed costs Rp 54.000 Rp 6.000 Operating income Rp 28.000 Rp (800)	Students are very active and eager to express their critical thinking in the learning process

Resources: Class Observation

The implementation of classroom action research with problem-based learning that lasted for 3 cycles has produced several problems solving in the classroom that aims to improve students' critical thinking skills. Problem-based learning was chosen because based on the steps, the case given by the lecturer can spur students to critical in class. The problem in increasing student critical thinking encourages problem-based learning to be used in this study. Sendada with what was expressed (Major, Savin-baden, and Major, n.d.) that problem-based learning can foster communication and skills interpersonal students to communicate the knowledge they get.

5 CONCLUSION

Referring to the classroom action research that has been done and the results of the discussion, it can be concluded that learning using problem-based learning can improve students' ability to think critically with three cycles that have been done. In each cycle, the problem-based learning was taken from a reference source and managed to overcome the problems in the learning process in the classroom during the Management Accounting

course. In the implementation of problem-based learning, case variations are needed so that students can improve their critical thinking. Students who tend to be passive can finally express their critical opinions in the class. In the three cycles that have been carried out, the maximum results are found in the third cycle where the lecturer gives a variety of most difficult cases. And with problem-based learning, students can improve critical thinking skill maximally.

ACKNOWLEDGMENT

This research was partially supported by Faculty of Economics Universitas Negeri Malang. We thank our colleagues from the Accounting Department who provided insight and expertise that greatly assisted the research, although they may not agree with all of the interpretations/conclusions of this paper. We are also immensely grateful to our students for their comments and participation.

REFERENCES

Altrichter, H., Kemmis, S., McTaggart, R., and Zuber-Skerritt, O. (2002). The concept of action research. *The Learning Organization*, *9*(3), 125–131.

Barret, T., and Moore, S. (2011). New approaches to problem-based learning.

Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching and Learning*, *1996*(68), 3–12.

Barrows, H., and Tamblyn, R. (1980). *Problem-based learning: An approach to medical education*.

Beaumont, C., Owens, T., Barret-Baxendale, M., and Norton, B. (2008). Blended problem-based learning for widening participation: a case study. *Innovation in Teaching and Learning in Information and Computer Sciences*, *7*(1), 44–72.

Chen, K., Lin, P., and Chang, S. (2011). Integrating library instruction into a problem-based learning curriculum. *Aslib Proceedings*, *63*(5), 517–532.

Education, K. P.-, and 2004, undefined. (n.d.). Critical thinking: An extended definition.

Halpern, D. (2014). Critical thinking across the curriculum: A brief edition of thought andamp; knowledge.

Jackson, S. (2015). *Research methods and statistics: A critical thinking approach*.

Kurfiss, J. (1988). *Critical Thinking: Theory, Research, Practice, and Possibilities. ASHE-ERIC Higher Education Report No. 2, 1988.* 1

Major, H., Savin-baden, M., and Major, C. H. (n.d.). Foundations of Problem-based Learning.

Moore, T. (2013). Critical thinking: seven definitions in search of a concept. *Studies in Higher Education*, *38*(4), 506–522.

Natale, S., and Ricci, F. (2006). Critical thinking in organizations. *Team Performance Management*, *12*(7–8), 272–277.

teaching, B. D.-A., and 1996, undefined. (n.d.). Problems: A key factor in PBL. *University of Delaware, Center for …*.

Warnick, B., and Inch, E. (1994). Critical thinking and communication: The use of reason in argument.

Yeo, R. K. (2007). Problem-based learning: A viable approach in leadership development? *Journal of Management Development*, *26*(9), 874–894.