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PROBLEM-BASED LEARNING: DEVELOPING STUDENTS' CRITICAL THINKING

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Abstract
The Problem-based Learning model is one of the learning models that can develop students' critical thinking because it uses real-life problems foundation of learning activity. This research aimed to describe the implementation of PBL in English language learning in developing students' critical thinking, teacher's role in PBL, teacher's barriers and the impact of PBL toward students' critical thinking. This research took place in one of the senior high school in Majalengka. The observation was conducted three times in the class of eleventh grade and then the one of the English teacher was interviewed. The result of the research revealed that 1) PBL in English language learning begins with the teacher delivered the problem to the students as the foundation of learning activity and the problem was ill-structured and need deep analysis to formulate the solution; 2) teacher's role is only as facilitator and co-investigator by providing situation to the students and help them in analysis; 3) time allocation, teacher's capability and students' speaking ability are the barriers in implementing PBL; and 4) PBL develops students' critical thinking skill, it can be observed through students characteristic which are elementary clarification, basic support, inference, advanced clarification and strategy and tactic.

Keywords: Problem-based learning, critical thinking, globalization era

INTRODUCTION

One of the crucial problems arises from the advancement of technology is the overwhelming of information in mass media and the internet. Hence, the young generations especially students must be prepared in order to face that situation. Meanwhile, the preparation is not only about their hard skill, which is related to the subjects that the students learn in school, but also about their soft skills which are helping the students mastering their hard skills (Fakhriyah, 2014).

One of the soft skills is the ability to think critically and solving a problem (Wegner, 2008). Critical thinking can be defined as the ability in every person to acquire, assess, and analyze the information then make justifiable judgments to reach conclusion and solution (Tinio, 2003 cited in Fakhriyah, 2014). Meanwhile, critical thinking ability cannot be

growing along with the development of the body for every individual (Fakhriyah, 2014), it has to be trained and learnt.

The role of critical thinking is very important to survive in this era (Epstein, 2006). Teachers must create a learning situation that can help the students to develop their critical thinking skill. As in mention in Yazidi (2014) that everal learning models that can be implemented in curriculum 2013 in which most of the high school implemented, those are 1) Discovery learning; 2) Problem-based Learning; 3) Project-based Learning; 4) Contextual Learning and; 5) Cooperative Learning. The similarity amongst them is the centre of learning activity is placed on student but the most suitable one in order to build students' critical thinking is Problem-based Learning (PBL) which can help the student to build reasoning and communication skill that necessary for success in life (Duch*et al*, 2001: 180). Hence, the implementation of PBL helps the teachers to create learning situation in the class when before is only focus on transferring knowledge from the teachers to the students while now it more focuses on how students construct their own knowledge based on experiences they got.

Several researchers have been conducted with aim focus on implementing Problem-Based Learning models toward enhancing students' critical thinking skill (Sastrawati*et al*, 2011, Anggara*et al*, 2013, Lukitasari, 2013, Nurhayati, 2014, Fakhriyah, 2014). It is related to the personal experience of the researcher when the researcher having experience as a student teacher training in one of senior high school in Majalengka.

After studying all of the previous research, the researcher concludes PBL can be implemented in every level of students and a variety of subjects with the result that it is can develop students 'critical thinking. Meanwhile, the previous research did not address the barriers of the implementation of PBL from the teachers' perspective. Therefore, this recent study wants to describe the process of implementation of PBL to develop students' critical thinking and also to find out the barriers of the implementation of PBL.

METHOD

The study used Descriptive Analysis approach since it describes the process of English language learning process using Problem-Based learning models in order to develop students' critical thinking skill which is conducted in senior high school. The research was conducted in one of senior high school in Majalengka which is located right in the middle of the city of

Majalengka. The data was obtained by conducting an interview and observation toward both the English teacher and the students of eleventh grade and was largely focused on to find out the process of Problem-based Learning, teacher's role in PBL class, teacher's barriers and the impact of PBL in the students' critical thinking skill.

FINDINGS AND DISCUSSION

Process of Problem-Based Learning

The initial process of Problem-based Learning is giving a problem as a foundation of the learning activity. When the class was started, the teacher began to provide the students with several real-life problems as a foundation of the learning activity. The result of the interview also supports this data. The teacher's response as follows:

> *"Problem-based learning is a learning model where I start the learning activity with a real-life problem which is I gave to them or I let the students identify some problem that exists in real life."*

Then the teacher began to divide the students to several group consist of three students. The purpose of the group was to help the students in discussing the problem by collaborating among them and also search for another source of information in order to support them in making solution. As the teacher response as follows:

> *"I try to divide the students into several group consist of two or three people. I think it will make them easier to analyze the problems by discussing with their friend in the group to come up with the solution for the problem."*

As the new information was found, the students then report their discovery among them and analyze the information to help them come up with the solution. The teacher helps them to prevent the students from overlooked any details of the information.

Picture 1. Students and the teacher discuss their discovery

The students began making a presentation of the solution toward the problem while the other students pay attention to the presenter and make sure whether the solution was better

and acceptable. The teacher also helps them in clarifying any misconception in the presentation. In the end, the learning activity was closed by the teacher with summarizing and giving addition toward the solution of the problem thus all of the students have the same perspective.

All of the processes in PBL class above was in line with the process mention by Tan (2003: 35-37) where the PBL class begin with: 1) Meeting the problem; 2) Problem analysis and learning issues; 3) Discovery and Reporting; 4) Solution presentation and Reflection, and; 5) Overview, integration and evaluation.

Teacher's Role in PBL Class

The problem-based learning model is one of learning model used in curriculum 2013 (K-13). In this model, learning activity is rotated around the students. Thus, make the teacher did not involve actively with the students in a learning activity. The teacher's role in the class is a mere facilitator and guide for the students, hence, the goals of the learning activity can be achieved. All of the teacher's role in PBL class in this research was in line with the theory mention by Torp& Sage (2003: 27). The first role is the teacher as a provider. The teacher presents the real life and ill-structured problem to the students as the foundation of learning activity. As the teacher's response in the interview as follows:

> *"The first thing I do when I am going to start the lesson is I try to warm up the class by giving them several problems which exist in the real life hence the students will be ready to analyze the problem and try to find the solution."*

After the problem was given, the role of the teacher only as far as to encourage the students thus, they try to use the experience, knowledge and another source of information to formulate the solving problems. The teacher also helps the student deepen their understanding of the problem. Therefore, the students will manage to construct the solution. This kind of activity was seen on the teacher act as coach and facilitator to the students, which also in line with the theory of Torp & Sage (2003: 27). As the teacher response as follows:

> *"I give them time to gather literature and sources that will help them to find the solution of the problem. I walk around the class so if there any students stuck to find a solution or having difficulties in constructing the solution I can help them. I also guide them when I found the students misunderstood the problem. It is like I become their partner."*

It also can be seen that the teacher act as co-investigator for the students, helping them clear their doubts toward the information and also make a correction. As the teacher's response as follows:

"I act as co-investigator by giving some help when the students find it hard to come up with the solution or when the students didn't have a deep knowledge of the problem."

Picture 2. Teacher gives an overview and feedback of learning to the students

At the end of the meeting, the teacher summarizes the result of the presentation and give reflection to the students after the students delivered their solving problem.

Teacher's Barriers in PBL Class

Based on the result of the observation and interview, the researcher found 2 factors that become a barrier for the teacher in implementing PBL in English language learning. The teacher's response as follows:

"Time management and students vocabulary are the weaknesses in implementing Problem-Based Learning, especially in English class."

First is the time allocation. Based on the result of the observation, not all of the students manage to present their solution toward the problem. The students tend to take so much time in gathering additional information to help them formulate the solution. The teacher also tends to stray from the path when discussing some reasoning with the students thus making the class did not have enough time at the end of the session. In the result of the interview, the teacher mentions that good preparation on what we are going to do in the class the will make the teacher easier to achieve the learning goals. Although, sometimes teacher's ability in managing time will also give influence. The teacher's response as follows:

"I think it is the preparation of what we are going to do in the class so it doesn't stray it a path or take too much time. Because sometimes when I teach in the class, I always tend to stray from the path, like discussing another material outside of the class and it's my personal weakness"

The last is the students' vocabulary which influenced their speaking ability. In PBL class, the students are expected to deliver their arguments at the end of the lesson. Although some of the students manage to deliver the argument about the solution very well but overall of the students still mixing their argument in Bahasa. Thus, the researcher infers that students speaking ability also influenced the teacher in implementing PBL in English language learning.

The impact of PBL toward the students' critical thinking

As stated by Torp *et al* (2003) "The problem posed in PBL, stimulate the students to do critical and creative thinking to bring the problem to acceptable closure with evidence to support their decision making.". The teacher's response as follows:

> *"I think what makes the PBL different with other learning models is how the students using their mind and knowledge because when using PBL, students were asked to come up with a solution to solve the problem."*

Moreover, the teacher also adds in the interview (Q14: In your opinion, does PBL increase students' critical thinking skill?), that PBL does develop students' critical thinking. It all can be seen when the students able to present the solution to the problem given by the teacher. The teacher's response as follows:

> *"of course, as I said before that PBL makes the students think to find, reconstruct an argument to solve the problem and when they manage to do it, we can conclude that their critical thinking skill also develops."*

In this research, the researcher uses Ennis theory of critical thinking (cited in Costa, 1991), which are:

1. Elementary clarification, which is focusing on questioning, analyzing the arguments and answer the question of the explanation of arguments.
2. Basic support, which consists of considering the sources are valid or not and also observing and evaluating the report of the result of observation.
3. Inference, which consists of deduction and induction activity, evaluating the result of deduction and induction and also judging the result of deduction and induction.
4. Advanced clarification, which consists of defining the terms, judging the definition, and identifying the assumption.
5. Strategy and tactic, which consist of deciding on an action and interacting with others.

The first indicator is elementary clarification. At the beginning of the PBL class, the teacher gives the students some problems. One of the problems is the price of rice in

Indonesia tend to increase each year. The students began to analyze the root of the problem and questioning themselves on why does this happen. One of the students makes an argument that Indonesia must import rice from another country to control the price of rice in the market. The other students began to challenge and question the argument.

The second indicator is the basic support. Because of the lack of information, the students began to search for another information to formulate the solving problem after the teacher divide them into groups. The student exchange the information they got within the group and discussing the credibility of the information.

The third indicator is the inference. The students began to cut down the information they think unnecessary in helping them formulate the solving problem. Then, they are generalizing their idea to come up with the solution. They consider that there is another solution besides import rice from another country.

The last indicator is strategy and tactics. The students began to define the problem from the root. The students claim that the reason why the price of rice increase each year is because of the well-being of the farmer. The students elaborate it by giving an example that these days many rice fields in Indonesia has become a building such as a factory, apartment, and housing. The students also elaborate on those farmers these days are using modern tools in farming. Thus, the price of the rice will increase because the costs in maintaining the tools are also high. The best solution is to relocate the fund from import to managing the well-being of the farmer.

Based on the explanation above, the researcher concludes that PBL in English language learning does give impact to students critical thinking skill. Even though not all of the indicators appear in the observation.

CONCLUSION

Based on the result of the data which mention above, the researcher concludes that the process of Problem-Based Learning in the English classroom in developed students' critical thinking starts from meeting the problems, problem analysis and learning issues, discovery and reporting, solution presentation and reflection and overview, integration and evaluation by the teacher. The teachers' role in PBL classroom is not actively engaging, rather the teacher act as far as stimulating the students and guide them, more like a facilitator. The only

teacher barriers are time management that could also related to the capability of the teacher in managing the time and also students' vocabulary level which can be a barrier for the students to express their mind in presenting the solution of the problems. Last, the researcher concludes that PBL also influences the students' critical thinking by observing students behaviour during learning activity and observing how students construct their argument, present it and elaborate it well.

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