



Investigating the Implementation of Problem-Based Learning (PBL) in English Teaching and Learning

Andi Wirantaka^(✉) and Hanif Sultan Riyata Sukarno

English Language Education Department, Faculty of Language Education, Universitas Muhammadiyah Yogyakarta, Yogyakarta, Indonesia
andiwirantaka@umy.ac.id

Abstract. Problem-based Learning (PBL) is one of approaches used in teaching and learning. PBL is a learning approach in which students learn through several real-problems happened in their daily life. There are two purposes for this research which are to find out the perception of students towards the advantages of PBL and to discover the perception of students towards the challenges of PBL. The researcher used qualitative approach to find out the students' perceptions of the implementation of the PBL approach as a teaching-learning approach. The method under qualitative approach used by the researcher was descriptive qualitative since this design can help the researcher to describe the phenomena that occur and related to the PBL approach. The researcher selected four students in English Language Education Department (ELED) of a private university in Yogyakarta having experience in learning with PBL approach. The researcher applied interview as the data collection technique. The findings related to the advantages of PBL are PBL improves students' autonomy in learning, improves students' understanding the material, improves students' learning attitude, and improves students' involvement in learning. The findings related to the challenges of PBL are the lack of self-confidence, challenges on group work which is related to group member and team work, and challenges in understanding the problem as material for learning.

Keywords: PBL · implementation · teaching and learning

1 Introduction

Problem-based Learning (PBL) is one of approaches used in teaching and learning. PBL is a learning approach in which students learn through several real-problems that happen in their daily life. By using real-world problems, PBL is expected to be able to encourage students to develop several skills such as problem-solving and critical thinking skills. According to Ali (2019), PBL has several characteristics such as independent and self-directed learning, individual or group learning with the teacher as the facilitator, group learning about motivation and teamwork by the students, problem-solving practices, and engaging with the task's material used for learning such as data, photographs, and articles.

To create an ideal utilization of the PBL approach in learning, several criteria must be acknowledged by the teachers. Delisle (1997) stated that there are three main criteria need to be met in order to create an ideal PBL approach's utilization. First, the teachers must be able to connect the problems used in the learning process with students. The teacher's role is to encourage students to feel that the given problems that are used in the learning process are interesting or new for them. Second, teachers must make sure that their students have enough understanding of the problems given in the PBL learning process, then students will be guided to create proper structures to solve the problem. The guided structures are an important process in the PBL approach. Third, the teacher must review the student's understanding of the given problems during the learning process by asking them for their own opinions, and writing a summary of their comprehension of the problems.

There are a few main advantages showing that PBL is an effective learning approach. PBL helps students to construct flexible knowledge. Based on Hmelo-Silver (2004), students will develop their knowledge when they apply their understanding in multiple problem situations. In addition, Hmelo-Silver (2004) declared that the PBL approach helps students find creative new ways to gain new knowledge, solve problems, and evaluate their learning. Larson (2001) stated that the learning process with the PBL approach is beneficial for students in developing problem-solving skills, and students will also have more opportunities to practice their target language for authentic communication. Barron (2002) added that the PBL approach requires teachers to actively asking students about their judgment on problems used in the learning process. This activity would help students to be better in expressing their opinions, resolving differences, taking necessary action to solve problems, and making agreements (as cited in Hmelo-Silver, 2004).

PBL also has several obstacles in the implementation. According to Dolmans et al. (2005), teachers sometimes only give simple problems that the students already know the answer and this could lead to less constructive students with a lack of critical thinking ability. Hendry, Ryan, and Harris (2003) added that another problem that could occur is the possibility of teachers who are still dominant. During the application of the PBL approach, the students are still directed or assisted in solving problems and this does not mean to make teachers become as dominant (as cited in Dolmans et al., 2005).

In an English Language Education Department (ELED) of a private university in Yogyakarta, the PBL approach is applied in one of courses is named Curriculum Design. The implementation of PBL in this class is reflected by activities done by giving a problem or a topic to be discussed by students. The students discussed the given problem in a group and they were asked to share how they would solve the given problem. The lecturer also applied debate session between groups. Based on prior interviews with the lecturer teaching the course, the implementation of PBL in this class is somewhat ineffective such as the objectives of the class have not been achieved, class activities do not run smoothly, and learning outcomes are not satisfactory. Thus, the researcher was interested in investigating the application of the PBL approach in language teaching and learning. Therefore, this research is necessary to be conducted in order to find out students' voices about the implementation of PBL in language teaching and learning.

The following are the research questions used as a guideline to conduct this research. The research questions are presented below:

1.1 What are the advantages of Problem-Based Learning implementation as perceived by the student toward intelligence?

1.2 What are the challenges of Problem-Based Learning implementation as perceived by the student?

2 Literature Review

2.1 Problem-Based Learning

According to De Graaff and Kolmos (2003), PBL is the development of the student-centered learning approach. In this approach, the problem becomes the learning material, and the problems that are used for the learning process usually come from normal everyday life. Moreover, according to Norman and Schmidt (2000), PBL is a learning approach that will develop the way students think. Students will be required to think critically and improve their diagnostic ability to a problem. Nafiah and Suyanto (2014) added that the definition of PBL is a learning approach that uses problems from the students' daily life as a context of learning which ultimately leads students to be better at solving problems and gain knowledge. Thus, it can be concluded that PBL is an approach applied by using problems which are needed to be discussed or solved by the students so that the students can develop their critical thinking and problem solving.

2.2 Purposes of Problem-Based Learning

The student is the most important part of education, since every element in education should support the students' needs in order to create an effective learning experience. The delivery of learning materials is a crucial aspect to ensure the quality of teaching and learning and it must be well delivered to students. The lecture approach is still the most common teaching and learning approach used around the world, and teacher-centered learning would lead to the lack of students' participation in the class. Setyorini, Sukiswo and Subali (2011) stated that this approach of learning does not involve enough students' participation and it will affect the development of the students' cognitive, affective, and psychomotor abilities.

As time passes, many schools have made changes to their teaching and learning approach to ensure the quality of learning for their students. One of the approaches used is the PBL. According to Mann (2008), the purpose of the PBL approach is to improve learning autonomy, critical thinking, communication, and student skills in solving problems (as cited in Setyorini, Sukiswo and Subali, 2011). In line with Gunantara, Suarjana and Riastini (2014), this learning model is expecting students to have high motivation and curiosity, so the learning material delivered will be easily understood by students.

2.3 Technique in the Implementation of Problem-Based Learning

According to Abdullah and Ridwan (2008), there are four theories from Jean Piaget, David Ausubel, Vygotski and Jerome Bruner that are used as the basis for implementing the PBL approach. The first theory is Piaget's theory, which discussed about students'

intellectual development in learning. Piaget added that knowledge is an essential aspect to build students' minds. According to Piaget, there are several principles of learning approach related to the PBL approach's implementation in education. The first principle is that the students' knowledge is built individually or in groups. Second, knowledge is not transferred from the teacher to students; it relates to the students' participation and motivation. Third, the teacher only provides advice and facilitates learning; the students will have to be actively involved to learn.

The second theory is the theory of meaningful learning by Ausubel's that distinguishes the way of learning into two, which are learning to accept and learning to find. In learning to accept, the students' role is only to accept materials taught and memorize them. While in learning to find, the students are the ones who have to find the concepts of the knowledge. In meaningful learning, students will try to discover new concepts and information that are associated with their existing cognitive structures. The cognitive structure relates to an individual's thinking capacity, such as facts or concepts that students have learned and remembered.

The third theory is Vygotsky's theory, which emphasizes the role of people around to foster students' intellectual development in learning. Interaction here involves more experienced people, teachers, or other students to facilitate students' intellectual development. Therefore, even though students are involved in active learning, the teacher must actively assist each student's activities. The teacher's role and the role of other students are equally important with the cooperative learning approach; students will be divided into several small groups with different levels of understanding. Each group members must collaborate and help each other to understand the learning material.

The fourth theory is Bruner's theory. According to Bruner, in a person will go through three cognitive processes in their learning process. First, The Initial Stage, the stage of obtaining new information and gain new understanding and experience of the knowledge. Second, The Processing Stage where the students will understand and analyze the knowledge they have gained. The third is The Evaluation Phase which is useful for assessing the process of the two previous stages. Bruner is also known for the Discovery Learning Theory, the process of learning by finding your own concepts. In this theory, the teacher's role is to provide learning materials gradually. The previously given material will appear and be combined with the new material. Bruner thinks this concept will stimulate students to find new concepts by connecting from the previous learning concepts to discovery learning.

2.4 Characteristics Problem-Based Learning

Graaff and Kolmos (2003) classified characteristics of the PBL into three-part. The first is the Curriculum Structure, the teacher plans on how learning will proceed. The learning process is divided into several periods, and each period focuses on a particular problem. Every problem in each period is planned for the students to discuss. The teacher will choose one case then ask the students to analyze both verbally and in writing.

The second is the Learning Process; students will be divided into groups and then they will discuss the problems that have been chosen by the teacher. Each individual in the group will present or express their opinion regarding the case. Then, the group will discuss each of their views to come up with one point of view that they think is

best. Some students often neatly organize their discussion because each individual's work complements the group work with the purpose of getting clearer and broader perspective related to the problem. The main role of the teacher here is to facilitate group and internal communication.

The third is Assessment; the assessment method must be compatible with the objectives of the learning process. To identify achievements in each period, group members must learn to work together effectively. Student's discussion is one way to teach management and collaboration skills. The more familiar problems or tasks relating to real-life, the better it will be for the learning process, as it involves both individual and co-operative activities, interactive discussions, and a writing process for students.

2.5 Advantages of Problem-Based Learning

As a learning approach, PBL has advantages in several aspects. Jones (2006), stated that PBL teachers can make relevant and constructive learning content for the students. Utilizing the PBL approach can help students develop useful skills such as, leadership, communication, and problem-solving ability. The PBL approach will help students to exercise their analyzing skills, be more responsible, and practice their attitude when solving problems. Students are invited to form their own understanding in the right approach. Fauziah, Abdllah, and Hakim (2013), explained that the PBL approach can be one of the greatest innovations in learning, because the application of PBL uses real-life problems or cases to encourage and inspire students to think critically, analytically, and precisely in identifying, understanding, problem-solving and applying learning material.

2.6 Challenges of Problem-Based Learning

As a learning approach, PBL certainly has challenges. The teacher as a facilitator must pay attention to problems that perhaps inhibit the implementation of the PBL approach. If the teacher does not pay attention to factors that can restrain the learning process, this will affect the students' understanding of the course. According to Lidinillah (2013), the PBL approach has problems with a high diversity of students and learning time. The teacher's ability to encourage students' motivation is also needed to create an effective PBL based learning environment.

In the implementation of PBL approach, motivation is one of the most important factors that need to be monitored closely. One of the PBL approach's objectives is to increase students' independence during the learning process. Making sure students become more independent in their learning does need more effort as students are the center of this learning approach. Alamiyah and Afriansyah (2017), stated that students sometimes become lazy when they have to solve or analyze a problem, and students sometimes need more than the given time to understand the purpose of the problem. The implementation of the PBL approach also lies in organizing teachers and students. In terms of organizing students, the teacher must pay attention to each of the students' abilities. In order to increase the effectiveness of the PBL approach, when forming a group, it is expected that each group member can express their opinion during the discussion process in their respective groups.

According to Jones (2006), the role of the teacher that changes from the lecturer to only as a facilitator in the learning process could be an obstacle. Students are sometimes still confused with the activities provided during the learning process, and only active students may increase their knowledge since the students' effort will affect their own learning process.

3 Research Methodology

3.1 Research Design

This present study employed a qualitative research design. It aimed to find students' perception on implementation of PBL in English teaching and learning. A descriptive qualitative design was suitable for the study, exploring experiences, opinions, and perceptions (Creswell, 2002). Hence, the current study employs a descriptive qualitative design to delve deeply into students' perception on implementation of PBL in English teaching and learning.

3.2 Research Participants

The participants of the study were four students of an English Education Department in a university in Yogyakarta, Indonesia. The four students were selected as participants of the study as they experienced the use PBL in learning process.

3.3 Data Collection Method

The method for data collection was an interview. The current study employed an in-depth interview as it was assumed to be suitable for the current study since it allows the researcher and participants to investigate deeper on real-life experiences and specific matter points of view (Cohen, Manion & Morrison, 2011). The interview protocol was also used, comprising general interview questions related to research question. Despite the use of interview protocol, unstructured responses were employed to accommodate the participants' feelings, opinions, or situations.

3.4 Data Analysis

To begin the data analysis process, the researcher transcribed the data of the interview. The transcripts were coded to find the themes of the data based on pre-determined themes or emergent ones. Member checking was used to obtain the credibility of the data to maintain trustworthiness. Member checking was conducted by consulting the coding to the participants to see whether the objection has proceeded.

4 Findings and Discussion

This section provides findings and discussion based on the data taken from the interview conducted by the researcher. The finding is based on the participants' perception as a result of interview.

4.1 The Advantages of Problem-Based Learning Based on the Students' Perception

The findings related to the advantages of PBL are PBL improves student autonomy in learning, improves students' understanding the material, improves student soft-skills, improves students' learning attitude, and improves student involvement in learning. The detailed explanation of the findings is presented below:

4.1.1 Improves Student Autonomy in Learning

The first finding related to the advantages of PBL is PBL improves student autonomy. One participant stated that PBL was able to increase her autonomy in learning. In the interview session, Titik said, "PBL encourages us to be more able to think independently in understanding a problem or material". Titik felt that by using PBL in learning, it could encourage her or other students to think independently in understanding and analyzing a problem or material. This is able to help students to maximize their thinking skills.

Student autonomy increases related to the role of the teacher in encouraging students to explore their thinking skills by letting them have their own way of learning. Based from Bidokht and Assareh (2011), in PBL, the teachers do not serve as the main source of knowledge anymore instead, they direct the students to learn independently both in exploring the problems and in exploring the learning sources that will be used. Moreover, increasing autonomy will encourage students to explain the analysis, reasons and processes they have in learning. It is line with English and Kitsantas (2013) who said that atonomy in learning helps students make connections between their activities, goals, and learning processes, this is also supported by teachers in providing activity indicators to encourage students to improve their work.

4.1.2 Improves Students' Understanding the Material

The second finding related to the advantages of PBL is PBL improves students' understanding the material. Two students stated their opinions about improving students' understanding the material in PBL class. Eni said, "From the use of problems as the brainstorming, it is quite helpful to understand the material before the lecturer explains the material". It means that the use of brainstorming with problem or issues is helpful for her to understand an overview of the material provided. An overview of a problem can help students identify a problem and come up with new ideas to solve the problem.

Giving problems as the learning material turns out to have a positive impact on how students understand or remember the material. This learning can improve the context of understanding and motivation in learning. According to Argaw et al. (2017), PBL is an instructional approach in which the relevant problems was introduced at the beginning of learning and it is used to provide context and motivation in learning. In addition, relevant problems are able to develop students' critical skills. In PBL, critical skills are developed through identifying problems and managing the development of solutions to problems. Based on Savery (2015), in independent learning, students are able to delegate information in solving certain problems by combining various perspectives of ideas for the development of more appropriate solutions.

4.1.3 Improves Students' Learning Attitude

The third finding related to the advantages of PBL is improving students' learning attitude. One participant said about improving learning attitude in PBL approach. Tutik asserted, "Each student is also able to show their good learning attitude such as leadership skills when working in a group". Tutik felt that working in group activities, students could show their good learning attitude in discussions when facing a problem. This is able to help maximize the learning process.

Learning attitudes play a role in determining student learning process activities. A positive learning attitude will generate students' interest and motivation in participating in the learning process. It is in line with Cho and Egan (2009) who stated that PBL improves a variety of attitude including leadership, collaboration, conflict management, self-awareness, coaching, responding, communication, and continual learning skills (as cited in Scott, 2017). Furthermore, having interest and motivation in learning will create a comfortable learning environment for students. A comfortable learning environment allows students to be more active in the activities. Based on Albanese dan Mitchell (1993), students who experience with the PBL approach develop a more positive attitude towards the learning environment, including feeling that learning is more meaningful and flexible (as cited in Selccedil, 2010).

4.1.4 Improves Students' Involvement in Learning

The fifth finding related to the advantages of PBL is that improves students' involvement in learning. Two participants explained their involvement in PBL learning process. Titik said, "To overcome students who always provides ideas but always refuse to present, usually we do raffle before the discussion activity to decide who will do the presentation". In doing group discussion, sometimes there is group member willing to tell his or her opinion, but they refuses to do the presentation. Thus, to avoid it, Tutik and her friends do raffle to decide who will do the presentation.

Moreover, Sri also revealed her opinion. She asserted,

"We can divide the tasks. The lecturer usually gives several questions then we divide it according to the number of students in the group. This will make students responsible for understanding and answering questions. Therefore, that it makes students not passive".

To make each member of the group responsible for the assigned task, Sri and her group divide each question according to group members. Student involvement in the learning is very important to create active and creative learning. Thus, the learning objectives that have been planned can be achieved as much as possible. According to English and Kitsantas (2013), PBL gives students the role of being responsible for their learning and making meaning out of the knowledge and concepts they encounter. The creating of active and creative learning is very influential on the development of students' thinking and social skills. Student involvement in learning makes student actively involved in the learning process and make decisions.

4.2 The Challenges of Problem-Based Learning Based on the Students' Perceptions

. The findings related to the challenges of PBL are the lack of self-confidence challenges on group work and challenges in understanding the problem as material for learning. Detailed explanation of the findings is presented below:

4.2.1 The Lack of Self-confidence

The first finding related to the challenges of PBL is the lack of self-confidence. One participant stated about how the students' lack of self-confidence in PBL class. Tutik, asserted, "There are students who actively and confidently giving ideas but they are not confident to present the results of the discussion". Tutik felt that there are students who are confident in conveying ideas in discussion activities. Meanwhile, when they were asked to present conclusions about ideas in discussion activities, students felt less confident. It can be said that students feel more comfortable expressing opinions in a smaller scope.

Lack of confidence in their abilities has an impact on students who feel pessimistic about what they do. This self-doubt tends to make students too dependent on other group members. Jailani, Sugiman and Apino (2017) added that the low students' problem-solving capacity has resulted in their lack of self-confidence. Furthermore, students' doubts can be caused by group work activities that are not maximal. Not every student has good organizational skills when working in groups. This lacks space for students who are lack of confidence to dare to express their opinions. Based on Brata and Mahatmarti (2020), less optimal in collaboration and active student dominance, can cause to generate a feeling of lack of confidence in other students in speaking verbally both in groups and presentations.

4.2.2 Challenges on Group Work

The second finding related to the challenges of PBL is on group work. From the interview result, it was found two challenges on group work in PBL class. The challenges are related to group member and team work. The explanation about challenges on group work is presented below:

Group member. The first challenge on grouping work is on the group member. One participant stated about the challenges on the group member in PBL class. Titik said, "When having a discussion, some students who do not understand a chapter will be more passive or rely on other students". Titik felt that students become more passive when they do not understand a chapter or problem. Passive students will rely on their group mates to understand a problem and this will hinder the discussion that requires multiple points of view.

The passivity of students in group can cause the group learning process and objectives are not going well. Students who are passive will less optimal in thinking or contributing to learning and group discussion. According to Hmelo-Silver (2012), students as group member can become passive when they do not understand the group learning objectives and they do not always feel involved in the forming of knowledge construction. Group members who are not maximal in contributing will hinder the student's independent

learning process in the PBL classroom. Students with problems can be a challenge for other group members. It is in line with Wee (2000) who stated that solving the problems discussed by students can be prevented from completing challenges in their groups first. With self-learning, students must also formulate a problem statement of the problem given to them, which poorly structured (as cited in Mansor et al. 2015).

Team work. The second challenge on group work is on the team work. Two participants asserted about the challenges on group work in PBL class. Tutik said, “I feel less motivated when I see other students are passive in group”. Tutik felt that passive students could influence her motivation to get involved in the discussion and the learning process. Lack of motivation to be involved in discussions has an impact on the performance of a group. Not optimal discussion in the group causes a lack of perspective on a problem that can hinder the process of understanding and problem solving.

Another statement is from Sri. She stated, “There are students who prefer to be passive when they do not know the material, but there are also students who want to ask when they do not understand the material”. Sri felt that there were differences in the level of student effort in the learning process. This can affect group work. Students with higher effort to find out about problems will certainly lead to the process of exchanging ideas within the group than students with low effort.

The teacher’s role in providing guidance to students to be involved in group work is very necessary. Students are also emphasized about how important it is to have good teamwork in PBL class. Neuhold and Maurer (2012) stated that the important rules of lectures is not only to develop students’ independent understanding of the material, but also to facilitate them about group and work processes. Good teamwork in a group will have better problem solving than groups with poor teamwork. The role of the teacher here is still to control student behavior to maintain their motivation to contribute in group work. Based from Buchs et al. (2017), constraints to group work can occur when students do not know that they are positively connected. Each of them actually have duties and responsibilities in the team.

4.2.3 Challenges in Understanding the Problem as Material for Learning

The third finding related to the challenges of PBL is understanding problem as the material for learning. Two students said about the challenges in understanding the problem as the material for learning in PBL class. Sri asserted, “Because students do not understand the material, the learning objectives are not achieved. I also did not get knowledge or understanding in class”. Sri felt that lack of understanding related to a problem causes the goal of the PBL approach is not achieved. Moreover, without an understanding that makes students think why they have to solve a problem, they will not learn about materials that have to be learned.

Similar perception from Eni. She said, “When another group describes a problem, only that group understands the problem. Discussion and presentation activities in class are less effective”. Eni felt that discussion and presentation activities were ineffective, because the problems given were only understood by one group. After conducting group discussion, the lecturer usually asks the students to do presentations. The presentation should be able to arouse students’ curiosity about problems experienced by other groups and solutions related to the problems. However, students were only fixated on

the problems given to their group and they were less interested in trying to understand the problems presented by the other group.

Lack of learning effectiveness and problem understanding makes students less interested in following classroom activities. It has an effect in student learning outcomes and involvement in learning. Based on Kenedi (2018), understanding the problem is one of the main components of the PBL approach. Constraints on understanding a problem can affect the effectiveness of learning. Furthermore, the role of lecturer is needed in increasing the level of students' understanding of a problem. It is important for lecturers to give more sensitivity at the students' initial level of understanding and the speed of thinking so that the inquiry process runs well. According to Thomassen and Stentoft (2020), when students are involved in a problem-solving process, it is important for teachers to ensure students' thorough understanding of the problem.

5 Conclusion

Based on the result and discussion above, conclusion is withdrawn the advantages of PBL are that PBL improves students' autonomy in learning, improves students' understanding the material, improves students' learning attitude, and improves students' involvement in learning. In the second research question which is about the challenges of PBL, the researcher found three findings. The findings related to the challenges of PBL are the lack of self-confident, challenges on group work which is related to group member and.

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