

## The Effect of Implementing-Problem Based Learning on the Result of Students' Learning at School

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**Abstract:** After natural disasters, such as earthquakes, the community and schools' conditions were uncontrolled and uncondusive. Students could not carry out the learning process as before. Anxiety and fear came to students when in school. This study explained about the implementation of problem based learning on students at a shelter school after earthquake and the effect towards their learning outcomes. This study aimed to know the effect of problem-based learning on students' learning outcomes after an earthquake happened. Problem based learning brought students closer to the problematic context. This research compared the effect of problem based learning as well as the conventional teaching on 2 different groups from different emergency schools. The total number of the subject research was 120 students. The results of the study showed a positive influence on students' learning outcomes. In the learning process of problem based learning, students were brought closer to real problems in their environment and fostered a sense of confidence.

**Keywords:** *Problem based learning, learning outcomes, emergency schools.*

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### 1. Introduction

The condition of Lombok Island after the earthquake that occurred on July 29, 2018, with strength of 6.4 on the Richter scale, in general all learning activities were stopped, when the learning process run in an emergency it became ineffectively. Students were still overcome with anxiety and also the teachers. Bandura explained that a person was influenced by the environment, and people (Schunk, 2011). The condition of the learning environment was full of limitations, making students unable to study well. It was necessary to create a learning environment by adjusting the situation in which students were located. The choice of the right learning method that was adapted to the characteristics of students and the environment was very important. Environmental conditions where students were still in disaster, with various social problems that exist. The method of problem based learning was a constructivist model that was based on cognitive and social interactions from a problem-focused environment (Selçuk, 2010). In this method, students participated in learning by learning material and skills in solving problems by involving themselves in real life (Arends, 2009). In the field of citizenship studies, students really needed to be involved in the process of solving real problems that occurred. With the environmental conditions of students in disaster emergencies, it could be used as a real laboratory in learning. Problem based learning was an active learning in small groups, with problems that were used as stimuli for learning (Colliver, 2000). Selçuk (2010) explained that in problem based learning, students carried out explorations that were begun by considering problems and proceeding with discussions with peers with tutorial groups, and trying to identify the basic principles.

Problem based learning bridge between the learning process that happened in the school with the real life. In its process, the students were encouraged to collaborate and get the internship element in which they will do a dialogue with the interviewee (Arends, 2009). Problem based learning help the students to increase their confidence and thinking ability (Santrock, 2010). Problem based learning could focus students on learning environment and its empowerment in the learning process. Albanese & Mitchell (1993) stated that as quoted from that problem based learning was very close to contextual teaching learning which consists of three stages, namely context, information and working together. Hun, Moallem, & Dabbagh (2019) stated that learning was a social-internal reciprocal construct. Learning in problem based learning lied in authentic real-life problems. The use of the environment in learning with existing problems would be able to create knowledge construction.

### 2. Method

This research was conducted in East Lombok Regency, Lombok Island. The research method that was used in this research was quasi experimental by comparing two groups of students that used problem based learning

and traditional learning. Research subjects were 120 students in two schools. This research was carried out one month after a major earthquake hit the island of Lombok, and two weeks after the normal learning activity entered. While expository teaching created a fairly passive role for students the researcher observed for one week with the aim of calming and conditioning students. This research was conducted for three weeks.

### **3. Results and Discussion**

The results obtained from this study indicated that the problem based learning model could provide a more effective influence on learning outcomes. Hmelo-Silver (2004) in his article described PBL as a teaching approach that offered a prospective to help students developed flexible understanding and lifelong learning skills. Problem based learning used to support the students in improving flexible knowledge, effective problem solving skills, collaborative skills, and intrinsic motivation (Hmelo-Silver, 2004). Students who learned to use problem based learning could demonstrate better clinical problem solving skills (Savery, 2018). Problem based learning increased intrinsic interest in the subject matter and the learning skills directly, and this increase could be maintained (Norman & Schmidt, 1992). PBL produced exam performance that was better than traditional models, and significantly results in examinations (McParland, Noble, & Livingston, 2004). Who were expected to receive information and reproduced them at some points (Swaak, Jong, & Joolingen, 2004). Learning would be more successful if they were given the opportunity to explain or clarify ideas (Zakaria, Chin, & Daud, 2010). Problem based learning method was a learning model that activates students in learning. Students with PBL achieved higher test scores when it is compared to those in the traditional curriculum (McParland, Noble, & Livingston, 2004). Dochy, Segers, Bossche, & Gijbels (2003) showed the results of a meta-analysis of the effects of PBL that showed a positive effect on knowledge skills and applications compared to traditional curricula. The result of this study showed that the students who using problem based learning were able to achieve their learning goal. It can be identified from their learning outcomes because they were able to connect the material with the real life.

Critical thinking, metacognitive self-regulation regulatory efforts, and peer learning students with problem based learning, learning felt being treated as professionals adult who were developing effective and clinically relevant learning skills and which were useful in solving very important problems in their lives, and respecting interpersonal skills (Kilroy, 2004). Problem based learning provided simultaneous support in achieving the goal of making students as scientists, using realistic, unstructured problems, and focusing on metacognitive skills, where students would feel responsible (Gallagher, Sher, Stepien, & Workman, 1995). Konings, Wiers, Wiel, & Schmidt (2005) stated that there was a possibility that a positive effect could occur because the students could avoid an uncertain feeling and implemented problem based learning-related skills which were really necessary for becoming individuals that are empowered psychologically if problem based learning was implemented for a long time. Problem based learning had some effects (a) students found problem based learning more nurturing and enjoyable than conventional learning, and (b) students performed better than conventional learning (Gijbels, Dochy, Bossche, & Segers, 2005). Problem based learning ensued active learning when students individually or collaboratively solving problems. Problem based learning provided an approach that was more challenging, motivating and enjoyable for education (Norman & Schmidt, 1992). Learning problem based learning supported in developing various soft skills such as research skills negotiation and teamwork reading writing and oral communication (Allen, Donham, & Bernhardt, 2011). With problem based learning learning, students felt facilitated in learning, and encourage independent and active learning. So, the attitude of students in the learning process became more positive which had an impact on improving their learning achievement.

### **4. Conclusion**

Problem based learning had a positive effect on students' learning outcomes in post-disaster areas. In problem based learning, students learned through real problems in their environment. Students showed activity in the learning process, gain self-confidence, and more motivated to learn. Giving trust to students in the problem solving process made students actively participated in learning. The role of the teacher in the mentoring process was very large to foster the interest and activeness of students in the process of thinking in solving problems.

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