

PROBLEM BASED LEARNING: AN EMERGING METHOD OF TEACHING LEARNING IN MEDICAL EDUCATION

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Citation

Parth Guragain, *Problem Based Learning: An emerging method of teaching learning in medical education*

KEYWORDS: Innovative; McMaster; PBL; Problem-solving

DOI: <https://doi.org/10.3126/bjhs.v8i1.57279>

Don Woods first introduced the term Problem-Based Learning during his work with Chemistry students at McMaster University in Canada. Nonetheless, the widespread adoption and global popularity of PBL can mostly be attributed to its implementation at McMaster University's medical school.¹

In 1974, Maastricht University, which solely had a Faculty of Medicine then, embraced the McMaster approach and labeled it as probleemgestuurd onderwijs, which translates to problem-steered education. Subsequently, PBL rapidly gained traction in medical education and beyond, extending to disciplines such as psychology, law, economics, and vocational education. These programs incorporated either the McMaster or the Maastricht method, albeit with certain variations. Nevertheless, it is worth noting that PBL continues to be most prevalent in medical education as compared to other domains.²

In 1980, the Institution of Medicine at Tribhuvan University in Nepal became the first institution in the country to implement PBL (Problem-Based Learning). This was followed by B.P. Koirala Institute of Health Sciences (BPKIHS), Kathmandu University and Patan Academy of Health Sciences.^{3,4} Birat Medical College affiliated with Kathmandu University has implemented PBL from 2014. A dedicated PBL Committee has been created in Birat Medical College with regular workshops to increase the understanding of PBL for faculties.

PBL is an instructional method that allows students to participate in active problem-solving and gain knowledge. This approach encourages students to collaborate and work together to solve real-world problems, create mental models for learning, and develop self-directed learning habits through practice and reflection.⁵⁻⁷ The fundamental belief of PBL is that learning is an activity that is constructive, self-directed, collaborative, and contextual.⁸

This is a tutorial process for Problem-Based Learning (PBL), which involves the following steps:

1. Identify and clarify any unfamiliar terms presented in the scenario. If there are still unexplained terms after discussion, a list is made by the scribe.

2. Define the problem or problems to be discussed. All students' views on the issues should be considered, and a list of agreed problems is recorded by the scribe.
3. Have a brainstorming session to discuss the problem(s) and suggest possible explanations based on prior knowledge. Students draw on each other's knowledge and identify areas of incomplete knowledge. The scribe records all the discussion.
4. Arrange the explanations into tentative solutions. The scribe organizes the explanations and restructures them if necessary.
5. Formulate learning objectives. The group reaches a consensus on the learning objectives, and the tutor ensures that they are focused, achievable, comprehensive, and appropriate.
6. Self study, all students gather information related to each learning objective by their own efforts which help them to be lifelong learners.
7. Group shares results of self study. Students identify their learning resources and share their results. The tutor checks the learning and may assess the group.⁹

In order to be competent in the field of medicine, physicians need to excel not only in medical knowledge but also in leadership, communication, team management, and collaboration. Although the CanMEDS framework identifies seven roles of a doctor, the non-medical expert roles, which include six roles, are not given as much importance in the academic medical curriculum. There is a need for new and innovative opportunities for medical students to gain proficiency in these non-medical expert roles so that they can become effective participants in an interdisciplinary healthcare system.¹⁰

The approach known as Problem-Based Learning (PBL) entails transferring the main responsibility of teaching from teachers to students, and it is centered on guided self-directed learning. When implemented correctly, this method results in high levels of satisfaction, particularly among students. PBL is more effective than traditional



teaching methods that mainly rely on lectures, in enhancing social and communication skills, problem-solving, and self-directed learning abilities, and it yields no worse academic outcomes, and in many studies, it yields better results. Despite these benefits, PBL is not widely adopted, perhaps due to the need for more human resources and continuous training to implement it. Nevertheless, further randomized and comparative studies, systematic reviews, and meta-analyses are required to determine the most suitable educational approaches for training future physicians.¹

It is apparent that modern doctors require a range of skills beyond just medical expertise. The new generation of medical professionals is exposed to various methods of learning, with Problem-Based Learning (PBL) being a proven method for enhancing communication, leadership, team-building, and other essential skills among learners. While PBL is being implemented in many universities and medical colleges in Nepal, it is not yet flourishing as it should be. This may be due to hurdles such as the need to develop faculty skills for effective PBL implementation and hesitancy among medical students to adopt this method. Despite these obstacles, PBL will prepare our doctors for future challenges, and it is crucial for the government, medical

educators, and policy makers to promote its use. Nepal has made progress in implementing PBL, and it would be even better to explore new innovative teaching methods in medical education, including PBL. Studies have shown that future doctors require a diverse set of skills, and relying solely on traditional teaching methods will put us behind. Medical colleges and universities need to be open to new challenges and teaching methods to produce doctors who are lifelong learners, problem solvers, communicators, leaders, and health advocates. By doing so, we will produce highly skilled medical professionals who can tackle the health challenges of the future and be in demand globally. It is crucial that we embrace new advancements in medical education at this moment. All the relevant parties, including the government, medical colleges, medical scholars, medical educators, and doctors, should be receptive to these changes and keep up with the latest trends in medical education. They should implement these new developments according to Nepal's specific context. If we follow the latest trends in medical education full heartedly we will definitely not lag behind anyone in the world.

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