

## Problem-based Learning: A Current Model of Education

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Received: 17 May 2011 / Accepted: 19 Jun 2011  
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During the last decade, the amount of knowledge in the medical field has become so voluminous that students are unable to keep up, retain, and apply the information in different clinical settings. Imparting of knowledge to students has gone through many evolutionary processes. Initially, the convention was mainly teacher-centered where students were passive recipients of information through lectures, handouts, notes, practicals and few demonstrations. There was hardly any integration among different subjects leading to a sort of compartmentalized learning process. There was artificial division between basic sciences and clinical practice in previous systems. Then the emphasis was shifted from teacher-centered to more student-centered learning. Now, for a few years problem-based learning (PBL) has emerged as a new model of teaching and is virtually being implemented in all courses and subjects. PBL system originated at McMaster University in Hamilton, Ontario, Canada in 1969 and is based on the educational theories of Vygotsky, Dewey and others.<sup>1</sup>

The objectives of PBL system are; i) Self directed learning: Through tutorial sessions the students are taught to self-formulate their goals and objectives of learning of particular topics and then at the end of each session they are expected to evaluate the extent to which their goals are realized; ii) Problem solving: This encourages students to increase their motivation to learning, critical thinking, writing and also to enhance communication skills.<sup>2,3</sup> This may be through the medium of case scenario where students analyze the information and come to a conclusion; iii) Team work: The students are required to work together and cooperate with each other during discussion.

In order to achieve its objectives successfully and at high quality, there should be limited number of students in each group. They should have prior over-all knowledge of the subject. The case to be presented should be of a good quality associated with good tutor performance. During the process students are encouraged to use e-learning extensively. In this system, students work together in small groups, to solve real day-to-day problem which helps them to identify their areas of strength and weakness. Going through this system will improve critical thinking, research ability and social skills. This will prepare them to acquire life-long knowledge with collective responsibility. In order to succeed the cornerstones

required are motivated students, enthusiastic facilitators and availability of a rich pool of resources complemented by an efficient evaluation system.<sup>4,5</sup>

The main role of a tutor is to facilitate group discussion and learning without providing easy answers. If the students are unable to fully solve the problem presented in the case scenario, they are expected to research the subject and discuss their findings and conclusions to the rest of the group in the following session. This helps them to recognize their learning issues and strengthens their problem solving skills.

At the moment there are three main problem-based learning programs. Maastricht University teaches its whole programs in PBL formats exclusively. Faculty of Medicine at Helsinki and Harvard have transformed into a hybrid PBL model. Their system includes lectures, problem solving sessions and some practicals. A third modified PBL system includes all of the above plus a research skill development component during the free period of learning.

King Saud University Medical College, Riyadh, Saudi Arabia has recently instituted the hybrid model of Problem Based Learning. This shift had been very fulfilling for both students as well as the teaching faculty and is expected to pay high dividends in the long run.

My experience reinforces my belief that the hybrid PBL system is best suited for the Middle East. It is high time that more and more teaching institutes acquire such PBL based curriculum for their medical and dental colleges to keep up with current world standards of education.

### Acknowledgements

The author reported no conflict of interest and no funding was received on this work.

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