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Editorial

Problem Based learning in medical Education, Where we are?

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History and background

Problem-based learning is an innovative and challenging approach to medical education--innovative because it is a new way of using clinical material to help students learn, and challenging because it requires the medical teacher to use facilitating and supporting skills rather than didactic, directive ones¹

Problem-based learning (PBL) in medical education began with the Faculty of Medicine at McMaster University in Canada in the mid 1960's. Soon after, three other medical schools - the University of Limburg at Maastricht in the Netherlands, the University of Newcastle in Australia, and the University of New Mexico in the United States - gradually adopted this system. Through the 1970's and early 1980's, Gezira faculty of Medicine enrolled the concept and proved it self as well as many of Middle east and African schools of medicine followed . Now, however, we are seeing an explosion in the use of PBL in its various adaptations ². Today, most of the newly established medical schools in Sudan and many in almost every country of the world are implementing (or are planning to implement) PBL in their curricula to a greater or lesser extent. In addition, PBL has spread into schools of health sciences, nursing, dentistry, pharmacy, and public health have adapted the model of problem-based learning and developed their own spheres of influence.

What is problem-based and problem solve learning concept?

Each institution that claims to provide PBL programs has its own concept of what PBL is. However, the Problem Based learning (PBL) in the medical education no

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longer has a single universal definition. As a result, a great deal of misunderstanding surrounds the interpretation of this educational philosophy and the interrelation between the concept of problem based and problem solve approaches 1,2,3.

One of the early definitions of Problem Based Learning is a learning method based on the principle of using problems as a starting point for the acquisition and integration of new knowledge².

Official descriptions generally describe it as "an instructional strategy in which students confront contextualized, ill-structured problems and strive to find meaningful solutions." Another definition of PBL - the process of acquiring new knowledge based on recognition of a need to learn.

Also PBL is defined as a pedagogical methodology by which learning is initiated with a posed problem. So, PBL still has some controversial and difficulties in description, definition and meant quite different things to different people ⁴.

Problem solving is different from problem based approach, but quite interrelated ³because problem-solving refers to the effort to achieve a goal for which there is no automatic solution. Problem solving - arriving at decisions based on prior knowledge and reasoning ^{4,5}- is a situation in which one has a goal but must find a means for reaching it⁶ . Problem-solving versus problem based learning: It is different but inter-related ^{7,8}.

Characteristics of the PBL process

For good and successful problem based learning the following features and characteristics should be considered:

- Usually based on clinical cases, relevant
- Cases are characterized by “progressive disclosure” which in most instance allows discussion before leading into the next paragraph, page or session
- Students come in “cold” to the first tutorial
- Students determine the learning issues
- Sessions are open-ended to allow learning in the interval.

The tutor is a facilitator and not necessarily an “expert”, except in the process.

An important part of PBL is the learning between sessions and more and above students’ determination of their own “level of ignorance” (Learning Issues), by themselves, is fundamental to PBL.

Why Problem based learning?

The reasons why PBL becoming very popular and widely spread among all sciences is that it embedded in significant content of the discipline(s)⁹, involves conceptual reasoning, necessitates critical thinking, encourages collaborative research and provides one or more strong stakeholders. They model and coach, giving students guidance as needed, but encouraging student independence in goal setting and decision-making.

Transfer literature suggests that the salient qualities of transferable learning experiences occur in an environment that is characterized by meaningful activity, masterful guidance, and knowledge-building collaboration^{2,3}.

Reasons in favor of Problem Based learning Approach:

The expanding horizons in Problem-Based Learning in Medicine, Health and Behavioural Sciences well established and accepted by most of educationist due to the following reasons:

- Active learning by students

- ‘Understanding’ over ‘knowing’
- Motivating by mimicking professional work
- Problem-solving approach (empirical cycle)
- Clinical reasoning skills and integrated, ‘holistic’ approach to problems
- Independent information acquisition
- Communication and leadership skills

Why using problem based learning?

It represents the way learning occurs in the world outside the classroom.

Some theorists, those who ascribe to situated cognition and activity theory in particular, claim that learning occurs only within the context of activity and is securely tied to the situation in which it occurs⁸. It is engaging and, therefore, motivating and promotes desirable student outcomes:

Problems with the Problem Based Learning

- Finding enough tutors - 1 for each 6 students
- Faculty busy with “traditional” curriculum and services
- The range of topics which can be discussed is a limiting factor - quality control is difficult
- Heavy on library, computer resources, support (always limited)
- Objective evaluation of PBL is difficult.
- Inherent conflict with lectures - waste of time 9,10

In conclusion:

Problem based Learning concept in medical education is highly considered and well recognized in almost every 2 out of the 3 schools of medicine world wide¹¹.

¹⁴ Perhaps that was evidenced by the students’ knowledge level comparable to that from, conventional Faculties, students are better clinical problem solvers, ¹⁵⁻¹⁹. Students rate ‘Maastricht’

schools in the Netherlands have adopted variants of PBL²⁰⁻²². Better program efficiency: lower drop-out rate and shorter median study time world-wide

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