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Dysfunctional problem-based learning curricula: resolving the problem

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Abstract

Background: Problem-based learning (PBL) has become the most significant innovation in medical education of the past 40 years. In contrast to exam-centered, lecture-based conventional curricula, PBL is a comprehensive curricular strategy that fosters student-centred learning and the skills desired in physicians. The rapid spread of PBL has produced many variants. One of the most common is 'hybrid PBL' where conventional teaching methods are implemented alongside PBL. This paper contends that the mixing of these two opposing educational philosophies can undermine PBL and nullify its positive benefits. Schools using hybrid PBL and lacking medical education expertise may end up with a dysfunctional curriculum worse off than the traditional approach.

Discussion: For hybrid PBL schools with a dysfunctional curriculum, standard PBL is a cost-feasible option that confers the benefits of the PBL approach. This paper describes the signs of a dysfunctional PBL curriculum to aid hybrid PBL schools in recognising curricular breakdown. Next it discusses alternative curricular strategies and costs associated with PBL. It then details the four critical factors for successful conversion to standard PBL: dealing with staff resistance, understanding the role of lectures, adequate time for preparation and support from the administrative leadership.

Summary: Hybrid PBL curricula without oversight by staff with medical education expertise can degenerate into dysfunctional curricula inferior even to the traditional approach from which PBL emerged. Such schools should inspect their curriculum periodically for signs of dysfunction to enable timely corrective action. A decision to convert fully to standard PBL is cost feasible but will require time, expertise and commitment which is only sustainable with supportive leadership.

Background

Problem-based learning (PBL) is the single most important innovation in medical education of the past 40 years [1]. It was developed at McMaster university in response to teacher-centered and discipline-based preclinical medical education prevalent in the 1960s, where students receive teacher-determined material by lectures for reproduction in factual tests [2]. This short term cramming of large amounts of information organized around isolated subjects did not favor recall in the clinical years. It was neither preparing students to solve clinical problems nor to become self-directed lifelong learners. In contrast, PBL students in tutor-guided small groups attempt to resolve a real-life clinical problem by

using their existing knowledge to generate hypotheses and then actively finding the cross-disciplinary knowledge they need to fully understand the problem [3]. Hence PBL is a constructivist [4], student-centered and problem-based approach to medical education. It is geared to facilitate knowledge retention and application while fostering the skills desired in physicians, such as clinical reasoning, critical thinking and self directed learning [2]. The PBL approach has been found to improve physician competency in the social and cognitive domains [5].

As the McMaster model became known, staff from Maastricht (Netherlands) and Newcastle (Australia) spent time at McMaster in the 1970s before returning to implement PBL at their new medical schools [6]. In 1979, The University of New Mexico medical school offered a PBL curriculum as an alternative track [7]. Over the next two decades, established schools like

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