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Chapter II

What is Problem-Based Learning?

Introduction

Employers today are demanding communication, team, and problem-solving skills. Few of these skills are evident in the classroom, as students memorise facts for regurgitation. According to Vernon and Blake (1993), problem-based learning is more than a teaching method. It is a complex mixture of general teaching philosophy, learning objectives, and goals. PBL is an instructional approach that uses problems as a context for students to acquire problem-solving skills and knowledge. This chapter describes the shift from traditional teaching methods to PBL. It discusses the characteristics of PBL and explains how it differs from other approaches, such as case-based, project-based, and lecture-based approaches.

Skills Demanded by Employers

Tutors today are facing the continuing challenge to teach pre-professionals to learn to think and solve problems like professions in their fields by linking theory with practice. Employers are now seeking graduates with strong abilities in problem solving, communication, teamwork, and leadership (Carnevale, 2000;

Rao & Sylvester, 2000). Although graduates are entering employment with adequate technical skills, they lack process skills, such as communication and problem solving, that are necessary for successful job performance. These are the skills that are most often lacking (College Placement Council, 1994).

There have been calls for reform in higher education as legislators and national professional associations question the quality of classroom expertise (Braxton, Eimers, & Bayer, 1996).

Before we proceed with redefining the academic learning environments where students can acquire the necessary skills that will prepare them for the job market, it is necessary to examine the problems with our current teaching approach.

Problems with Traditional Learning

University education should, ideally, provide students with the necessary skills, values, and attitudes that are essential to cope with the dynamic complexities of the modern world. On the contrary, employers are complaining that graduates are not prepared with the practical knowledge and skills needed to perform effectively in their professions. It is generally acknowledged by critics that in university learning, the theory students learn is separated from the practice and, thus, there is a lack of deep learning about the complex issues and problems that graduates have to face in the real world.

There has been much criticism leveled at traditional methods of teaching and learning in higher education. In traditional learning, students are often exposed to rule-based models in which they are expected to memorise content in order to prepare for tests and the certifying public examinations. Textbooks do not help students develop problem-solving, critical thinking, and self-directed learning skills. There is virtually no contact with real work environments. It is no surprise, then, that students are unprepared for the ambiguities that exist in the real world.

Another factor contributing to the inability to deliver the sought-after skills demanded by employers is that traditional approaches to computing and engineering education are devoid of cross-disciplinary integration, having insufficient interface with real-life problems and exhibiting insufficient retention of basic knowledge. There is also the problem of students' inability to apply knowledge to actual cases, as well as concerns over the accuracy of their knowledge base. Courses are often fragmented, having very little relationship to one another (Toin, 1997).

Finucane, Johnson, and Prideaux (1998) cited the following criticisms for the traditional approach to learning in medicine: