

Chapter 30

Redefining the Higher Education Landscape through Problem-Based Learning

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ABSTRACT

Problem-Based Learning (PBL) is a pedagogical approach impacting instructional delivery in all tiers of K-20 education. The introduction of PBL in higher education first occurred in the medical school setting. Several decades later PBL is widely utilized as a popular teaching and learning strategy in colleges of education, specifically in graduate programs. Adult Learning Theory (Knowles, 1984), Transformative Learning Theory (Mezirow & Associates, 2000), and Information Processing Theory (Schmidt, 1983; Norman & Schmidt, 1992) all contribute to a theoretical understanding of PBL. This chapter identifies the key ideas, supporting learning theories, and principles of PBL. It then proposes a practical model that instructors can use to improve the quality of teaching and learning in academia.

BACKGROUND

The educational landscape is changing; some have termed it as the “climate change” in education. The students of today engage with the learning environment differently from the students of yesterday. The traditional landscape is often perceived as “formal”, “passive”, “direct”, and

“push” learning environment designed largely for the knowledge consumers; and the modern landscape is often perceived as “informal”, “active”, “collaborative”, “social”, and “pull” learning environment designed not only for the knowledge consumers but also for the knowledge creators. The attempt to redefine the educational landscape has gathered a lot of interest in recent years to

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create and/or adapt the education environments for the 21st century. The International Symposium on the Intelligent Campus, 2012

Modern universities have long advocated the notion of student-centered teaching in part because as an approach it is well supported by research into effective practices in the higher education sector (Biggs & Tang, 2007). Student-centered teaching reflects the aspirations of universities to have a transformative impact upon students by providing a learning experience that is dynamic, interactive and challenging. It is exactly these motivating and inspirational dimensions of a problem that form the basis and rationale for using authentic problems in teaching and teach (Barrett & Moore, 2011). Despite the importance of promoting students' real-world problem solving abilities, the reality is that college instructors are challenged by creating such learning environments.

AN INTRODUCTION TO PROBLEM-BASED LEARNING (PBL)

Many authors have provided rationales for Problem-based Learning (PBL) as an integrative and holistic instructional method for successfully integrating theory with practice and preparing students for independent learning in the field (Albanese & Mitchell, 1993; Lam, 2004). But what exactly is PBL? What is the value of PBL? Is PBL an engaging and effective learning strategy for higher education students?

The first meta-analysis study of PBL was conducted by Albanese and Mitchell (1993), who reviewed the English language international literature from 1972-1992 (primarily from medical schools). Their findings suggest that, compared to conventional instruction, PBL is more nurturing and enjoyable; PBL graduates perform as well as and sometimes better on clinical examinations, though lower on basic science examinations than their non-PBL peers. A less favorable review was later completed by Collier (2000), who con-

cluded that there is no convincing evidence that PBL improves the knowledge base and clinical performance in comparison to non-PBL peers. In contrast, Blumberg's (2000) literature review on students' learning processes and strategies supports the hypothesis of many individual studies that students with PBL experience demonstrate better self-directed learning skills than those trained in the traditional mode. Barr and Tagg (1995) suggest that PBL is part of the shift from the teaching paradigm to the learning paradigm, in which the focus is on what the student is learning rather than what the instructor is teaching (Huang, 2012).

The movement toward a new paradigm requires a thorough understanding of PBL and the assurance that the instructional strategy is implemented with fidelity and commitment. The differing quality of learning outcomes from studies reviewed in the latter decades of the twentieth century may reflect one of two things: (1) institutions did not have a thorough and complete understanding of PBL and the learning process; and (2) studies did not always fulfill the criteria of proper control group study design.

This chapter addresses the previous two issues by presenting an examination of PBL and exploring the initial development and growth of PBL as the instructional strategy transferred from medical schools to schools of education. Specifically, this chapter will examine Adult Learning Theory (Knowles, 1984), Transformative Learning Theory (Mezirow & Associates, 2000), and Information Processing Theory (Schmidt, 1983) to explain the foundational grounding for PBL. The chapter concludes by presenting a practical model for implementing PBL in graduate programs.

BACKGROUND

In 1984, the Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine (GPEP Report) called for less lecture-based instruction and more emphasis on independent learning and problem

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