Chapter 1
The Nature of Complex Blends:
Transformative Problem-Based Learning and Technology in Irish Higher Education

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ABSTRACT

This chapter discusses the complexities of blending technologies and problem-based learning (PBL) group interaction within the context of academic development in higher education. For both designers and tutors, it is important to seek best practices for combining instructional strategies in face-to-face and computer-mediated environments that take advantage of the strengths of each and avoid inherent weaknesses. A qualitative case study of the lived experiences of 17 academic staff participants in a blended PBL module over a two year period was considered likely to provide a much-needed analysis of current thinking and practice on the potential of interaction in this form of higher education professional academic development. Specific aspects of interaction (technical, peer, content, and the learning experience) within blended PBL tutorials are analysed to provide research-based evidence on the realities of delivering a PBL programme using technology. The study reported in the chapter argues that the intersection of PBL and learning technologies can offer an innovative way of teaching and learning and is a reflection of pedagogy and technology as an integrated model that can work effectively together. The findings show that the synergy from the collaborative blended PBL approach in this module can result in the coherent and comprehensive provision of training, support, and research throughout higher education institutions.

INTRODUCTION

In higher education institutions (HEIs) in Ireland, as elsewhere, the use of online technologies has become an increasingly important challenge in academic staff development. As a field, blended learning has impacted on higher education in local, national and global contexts and is fast-changing, highly fragmented, but still rapidly growing. The Internet has made it impossible for HEIs to ignore

technology in fulfilling their strategic mission and responding to the expectations of a diverse student body.

The promises of blended learning in the literature are extensive: increased learning, a reduction in the need for 'brick and mortar,' increased engagement, collaboration, and higher quality learning. However, there has been little examination or questioning of the interplay of new technologies and pedagogies in the context of higher education academic development. Transformative learning theory is being proposed in this study as a means to understand the complexities of education in an age where information and communication technologies (ICTs) are constantly reshaping and redefining our accepted notions of what it means to teach and learn in a HE environment. It is recognised that transformative learning is a complex process of interaction among people, the tools they use and the context in which they are embedded.

By analysing the blended problem-based learning (PBL) tutorial within a framework of transformative learning in professional academic development in higher education, the purpose of this chapter is to illuminate a complex situation so as to understand it better and therefore be enabled to facilitate beneficial change. Based upon extensive empirical research in higher education in recent years, Savin-Baden (2006) has concluded that the objective of combining PBL and e-learning is in itself complex.

There are two objectives of this case study:

- To establish, in a PBL tutorial setting, the factors that govern the success of blended PBL
- To identify technical, academic and interactional indicators of learning in the online and face-to-face PBL tutorial

This chapter argues for a much-needed analysis of current thinking and practice on the transformative potential of interaction in professional academic development in higher education; the chapter begins with an illumination on the background and context of the case study on the blended PBL module for academic development, with the associated literature review focusing on the fields of PBL, e-learning, and the convergence of the two. Special attention is given to the importance of interaction in the blended learning environment. Thereafter the case study is discussed and details provided on the research findings. Current challenges are outlined and conclusions drawn.

BACKGROUND

The role of blended learning within a pedagogical approach such as PBL has been gaining international recognition among practitioners and academic educators alike. Research into the concepts, tools, and methodologies of both e-learning and PBL has increased in momentum in recent years. However, contemporary commentators have voiced concerns with the speed at which technology has been proceeding at the expense of pedagogical advances. Within the specific field of blended learning, Jones (2006) has concluded that the practice of blended learning has outpaced the research owing, in part, to the rapid increase in both the quantity in use of and the sophistication of the technology.

Issues related to the design and implementation of blended learning environments have increasingly surfaced in recent years, as technological advances continue to blur the lines between distributed learning and traditional campus-based learning. This has raised questions about advances in technology during that last decade that have brought challenges and opportunities to the ways in which individuals are educated and trained, in particular through online instruction.

There is a qualitative difference between 'teaching online' and merely 'putting a course online'; a central feature of academic staff development involves conveying the difference between

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