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Implementing online problem based learning (PBL) in postgraduates new to both online learning and PBL: An example from strength and conditioning



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ABSTRACT

Recent research has focused on the development of effective online problem based learning (PBL). However, there is a need for research to examine experiences of online PBL in those new to online learning. This study used a single module blended approach to examine the student experience of online PBL in a group of postgraduates new to online learning. This employed one problem scenario for each group (four students per group) as the central component of the module. Asynchronous discussion boards were used to facilitate the learning process with other forms of delivery used as appropriate. Focus group interviews revealed that students believed online PBL developed skills related to employability and information retrieval/evaluation. Online PBL was seen as beneficial for developing ideas and critiquing information. However, the artificial nature of the discussion board space was a barrier for some students, as was anxiety about online participation in the PBL tasks.

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1. Introduction

Problem-based learning (PBL) has long been used within the context of medical education as a means to foster motivation, promote problem solving abilities and to encourage student interaction and independent learning (Willis, Jones, Bundy, Burdett, Whitehouse, & O'Neill, 2002; Camp, 1996). More recently there has been an increase in the use of problem-based learning within teaching in higher education in a range of general subject areas (Savin-Baden, 2003) sport and exercise science (Smith & Cook, 2012; Duncan & Lyons, 2008; Duncan & Al-Nakeeb, 2006) and also in the development of employability skills (Smith & Cook, 2011).

Due to the current economic climate the facilitation of employability skills is beginning to find acceptance in the UK with the best curriculum designs helping learners to build understanding of the subject matter (Yorke & Knight, 2006), whilst at the same time developing other complex achievements that employer's value such as positive efficacy beliefs and meta cognition (Yorke & Knight, 2006). In an attempt to facilitate the development of what have been termed 'generic' employability skills, that is, transferable skills that can support study in any discipline, Smith and Cook (2011) implemented PBL across all three levels of a Sport and Exercise Psychology Programme. Students were asked to rate whether they liked, disliked or were unsure about PBL developing seven generic employability skills. Results indicated that all three student groups [including the dislike group] reported the positive influence of PBL in developing their employability skills.

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PBL has been used as a mechanism to increase student interaction in distance- and online-based courses (Luck & Norton, 2004). This is understandable due to increases in the process and nature of interactive media over recent years, which have provided greater potential for effective online learning. Also, several media-based forms of PBL have been employed in various contexts within higher education (Savin-Baden, 2007). Despite this, although the term 'online PBL' is starting to feature in pedagogic literature, there is a lack of clarity in relation to the extent that teaching and learning activities are 'online', the ways in which students interact online and the nature and experience of students engaging in this form of learning (Savin-Baden, 2007).

As a result it is not clear whether the experience of online PBL differs between student groups who have prior experience of PBL online learning (or both) and those that do not. Nor is it clear whether the 'online' experience of PBL differs depending on the nature of the online delivery involved. Online PBL has therefore been used as an umbrella term to describe a variety of ways that students use PBL synchronously, asynchronously, on campus or at a distance. This includes the use of a range of media and software packages including chatrooms, discussion boards, wikis, blogs with synchronous online PBL employing webinars or, more recently, Web 2.0 environments that have been employed specifically for online PBL (Savin-Baden, 2007).

Online PBL has been employed across a range of subject areas; for instance, Luck and Norton (2004) used online PBL in an early years distance learning course where students engaged in five problem scenarios over 12 weeks. This was primarily achieved through the use of asynchronous discussion boards along with supplemental videos of lectures. Asynchronous discussion boards require an individual to post comments online. However, only one individual can post/comment at one time. Thus, the discourse surrounding the problem resolution does not occur in real-time.

This is in contrast to synchronous online discussion boards where all members of a PBL team have the opportunity to comment in real time and at the same time. Likewise, Jones, Miller, England, and Bilham (2006) used five (1/2 h) online discussions, with a mix of synchronous and asynchronous use, as a form of virtual clinic in a postgraduate sports medicine programme. The students who participated in this module reported that the virtual clinic PBL experience enabled them to engage with a wider range of material and that working in an online group provided an effective way to share ideas and reflect on different ways of approaching problems. In part due to the success of online PBL in distance learning courses, it has gained popularity as a teaching tool on campus-based courses because of its potential to develop student independence, whilst offering flexibility and a student-centred learning approach (Savin-Baden, 2007). Likewise, online learning can also engage individuals in learning which reflects social networking and allows learners to construct their own knowledge based on their understanding of a topic or issue whilst also receiving feedback, support and building new knowledge based on virtual social interaction with their peers.

However, although the promise of online PBL is apparent, relatively few studies have documented the student experience of online PBL. Consequently, its impact on students remains relatively under explored (Savin-Baden, 2007). Advocates of online PBL suggest that staff and students sharing their knowledge in a social domain is a key tenant of successful online learning. However, few studies have examined whether this is the case. Therefore, the aim of this study was to examine the student experience of online PBL in a group of postgraduates new to online learning.

2. Method

The impact of PBL on the student learning experience was examined using a single module blended approach (Savin-Baden, 2007) within the institution's MSc Strength and Conditioning course in a module titled 'Performance Physiology'. The module was delivered on campus and at a distance which is congruent with guidelines for single module blended online PBL (Savin-Baden, 2007). The module was designed using the model suggested by Boud (1985) which employs one problem scenario as the central component of the module for each group of students ($n=4$ per group). Asynchronous discussion boards were used to facilitate the learning process, with face to face lectures and seminars used to feed in and around the PBL activity at an appropriate time.

The problem scenario began with delivery of a letter from one of four elite sports clubs/teams inviting the group to work with the governing body in the role of strength and conditioning coaches in preparation for an upcoming athletic event (e.g. European basketball championships). As part of a pitch to secure a job, a letter was given out which identified a date for each group to conduct a presentation (10 min) to the respective governing body/sports team of their ideas related to athlete preparation. Two weeks after this (so within the midst of problem resolution), the students were provided with a phone transcript detailing a conversation between an athlete and coach relating to their current physical preparation which essentially provided a case related to a business/organisational problem. The problem scenario was also matched to the actual activities of sports teams/governing bodies of sport and athletes, so sought to explicitly match the university learning environment with actual practice specific to the students' degree course. In this way, we tried to incorporate different constellations of PBL online within the one scenario and in particular PBL for practical capability and PBL for critical understanding (for a full outline of PBL constellations, see Savin-Baden, 2007).

2.1. Module structure

In accordance with suggestions for running online PBL and, as the students were new to both PBL and online learning the first two sessions of the module were constructed as warm-up activities (Savin-Baden, 2007). The first session of the module comprised of a module introduction and the onset of the warm-up activity. In this session, students were shown

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