Chapter 4

Generating Competencies for Employability Through Problem-Based Learning

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ABSTRACT

This study demonstrates the suitability of the methodology of problem-based learning in the process of generating knowledge and generic competencies. The opinions of students, teachers and professionals who participated in the study were analysed, their assessment was very positive. Therefore, it is recommended to the centres quality commissions and those responsible for education in a national scope to use this methodology. Also, greater support is needed to carry out studies of greater scope that demonstrate the validity of this type of methodology. Thus, these studies could serve as a reference to universities and their teachers for the application of the most appropriate learning methodologies.

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INTRODUCTION

One of the essential elements for the creation of the European Higher Education Area (EHEA) is lifelong learning, which is why it is essential to adopt teaching methodologies that provide the student with learning strategies that allow them to face the challenges of professional life (Bernabeu, 2009). According to this educational framework, students must apply their knowledge to their work or vocation in a professional manner, obtaining the necessary skills on the elaboration and defence of arguments, as well as the resolution of problems within their knowledge area. The student becomes the real focal point of education while the teacher is a mediator in the learning process (Font, 2004).

In Spain, the primary purpose of pinpointing general, basic, transversal and specific competencies will be the employability of future graduates, utilising as a reference, the professional profiles and Vocational Training Catalogues of potential destination professions (Castillo & Terrén, 1994; RD 1393/2007). Therefore, on a European, national and local scale, and from a professional and student perspective, there is a call for greater harmony between, on the one hand, the subject matter and the methodologies used, and on the other hand, the skills demanded by the labour market (González & Wagenaar, 2003; ANECA, 2004; CEGES, 2007).

In this context, the academic field is the best scenario for the acquisition of interdisciplinary skills by students, so teachers must be trained to create current teaching proposals that are close to the reality of each knowledge area. Thus, one of the challenges of the new university model has been trying to get the student to learn through their work. Therefore, and according to Bermejo & Pedraja (2006), the methodology of Problem-Based Learning (PBL) and the evaluation process linked to it can improve the development of complex competencies that future graduates would need. Moreover, it is that unlike traditional educational, the PBL proposal as a teaching model promotes the acquisition and understanding of knowledge.

During the 1930s, authors like Dewey (1938) affirmed the need to use real and credible problems in students’ everyday life through problem-based techniques. In the 1960s, Gagné (1965) confirmed that scientific concepts applied through research-based methods produced meaningful learning. In this way, a group of medical educators from the University of McMaster (Canada) began to rethink the way of teaching medicine with the aim of achieving a better preparation of their students in the professional field. This led to the creation of a new medical school with an innovative educational proposal, currently known around the world as PBL (Barrows, 1996). In the review of the literature, this method is frequently alluded to with the acronyms corresponding to its English denomination: PBL, Problem Based Learning or Project Based Learning; or IL, Inquiry-Based Learning.

During the seventies, Universities such as Maastricht (Holland) and Newcastle (Australia) also created medical schools implementing the BPL in their curricular structure. Subsequently, other university institutions such as the Technological Institute of Monterrey (Mexico) or Universities such as Hawaii, Harvard and Sherbrooke (Canada), were mainly contributing to its dissemination (Barrows, 1996). From the nineties, its theoretical bases were analysed and discussed in greater depth. Because of this, it is possible to find in the literature a multitude of definitions in a variety of possible ways (De Graaff & Kolmos, 2003, Walker, Leary, Hmelo-Silver, & Ertmer, 2015, Morales, 2018).

The PBL is one of the most active and stable methodologies according to Branda (2006). Following Bas (2011), this model encourages both group and autonomous learning since it focuses on the solution of real problems that are related to the professional environment in which will have to develop in the