

Chapter 9

Development of Competences Through the PBL and the Use of Technology

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ABSTRACT

The objective of this chapter is to present a case study in the National Polytechnic Institute, which is focused on two aspects: 1) to know what kind of educational practices are implemented in the classroom and how ICTs are used and 2) to analyze the impact of project-based learning (PBL) in the Oral and Written Expression Learning Unit I to know what competences such as creative thinking, improving motivation, and meaningful learning are developed, as well as the use of ICT for research, analysis, experimentation, simulation, and socialization, in such a way that, during the application of the PBL methodology in conjunction with ICT, skills that are required throughout life are developed, both in academic, scientific, and occupational fields.

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INTRODUCTION

To be at the level of the requirements of the knowledge society and to contribute to the student's development, it is necessary to invest in education and in a training that guarantees graduation profiles according to a work performance and skills that society requires in different areas: personal, academic and professional. Once the problems, needs and qualities of performance in society have been determined, in a second moment, it is about identifying the learning, which includes knowledge, skills and attitudes (elements that make up a competence) to contribute to its development from the classroom to its strengthening in other learning environments.

The National Polytechnic Institute offers technical careers in the upper middle, upper and postgraduate levels. At these levels, care has been taken to ensure that the profiles of graduates are complementary, sequential, and in line with the megatrends: computerized societies, globalized economies, use of ICT, use of scientific and technical knowledge in a changing and increasingly complex environment; in general, the student is prepared for a knowledge society in which the development of human capital has as its origin, and at the same time also as an end, the development and use of knowledge.

The OECD (1998: 22) states “that human capital is defined as the knowledge that individuals acquire during their life and that they use to produce good services or ideas in the market or outside of it,” so education is one of the essential variables in the development of skills that result in the autonomous search for knowledge: learning to learn, search, motivate, investigate, undertake.

To meet these skills, it is necessary to create teaching spaces with a different educational framework from the traditional and incorporate methodologies that give the student active participation spaces, encourage collaborative work, identify and provide solutions or proposals for solving real problems. In this process of renovation and updating of the performance in the classroom, methodologies, strategies and activities focused on the performance of the student have been implemented, one of them is Problem Based Learning (ABP or PBL in English), considered as a methodology used and adaptable in different educational levels; its use has been generalized in a great variety of disciplines (Medicine, Law) as well as in Technical education.

The PBL, begins with the approach of a problem to be solved that implies the acquisition of knowledge, application and transfer in other contexts and circumstances, besides that basic skills are developed which will later serve for the development of others of greater complexity and that are used in their professional careers, considering Paredes (2016) the PBL allows greater autonomy in the process of student learning. Likewise, research, inferences and sample of findings interpreted

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