PROJECT BASED LEARNING ON B-LEARNING FOR INTEGRAL PROGRAMMING COURSES

I.I. Méndez-Gurrola[1], R.B. Silva-López[2], E. Sánchez-Corral[1], A. Solís-Chávez[1]

[1]*Universidad Autónoma de Ciudad Juárez (MÉXICO)*
[2]*Universidad Autónoma Metropolitana (MÉXICO)*

Abstract

In a course using the b-learning mode and focused on software development, it is important to establish a concrete project in which the students carry out the software development stages, from the problem statement to the system tests, this process can be done in various ways, one of them is to use the project-based learning methodology.

This work shows the application of this methodology in two groups of the integral programming course that is taught at the Autonomous University of Ciudad Juárez. It is considered that the learning process can be carried out using the project-based learning methodology since in working life they will have to face the development of solutions through various decision-making, together with the above for the development of the proposed software will be used the stages of iterative - incremental software development.

The desired objective is for students to learn and apply the software development methodology and to solve a specific problem based on a solution that they propose, one of the relevant points in the development of the solution is that they contemplate in the majority of the stages the user, as he guides the development process based on his requirements..

In the courses teams of 2 to 3 students were formed with the intention that each of the members went through all the stages of software development, this way of working allowed each member to contribute to the project with their specific skills and learn from their other partners .

The project-based learning supported by ICTs allows timely delivery of project advances and virtual and face-to-face feedback, this strategy was applied in two groups of students from the semesters 2019-1 and 2019-2 obtaining a better performance, one more role active and greater academic motivation of students, which is reflected in the high approval rates with outstanding grades ranging from 8 to 10 in the course of "Integral Programming".

Keywords: Project based learning, software development, b-learning, user experience.

1   INTRODUCTION

There is a new educational context in which students are expected to achieve meaningful learning, based mainly on the acquisition of skills that allow them to graduate with the necessary skills to solve problems in a society increasingly aligned with new technologies.

The use of methodologies such as the so-called Project Based Learning (PBL) allows the student to be an active part of learning by developing a critical thinking that will give him/her the opportunity to develop attitudes and qualities necessary to solve real problems.

The Autonomous University of Ciudad Juárez (UACJ) works under a constructivist educational model which seeks precisely that graduates develop this cognitive capacity so necessary for success in professional life and is based on the following principles [1]:

a) The subject must play an active role in their learning.
b) Learning is a process of knowledge construction and teaching is a support to the process of social construction of it.
c) Knowledge is constructed by the subjects who appropriate them through language and activity.
d) The discovery and construction of knowledge allow meaningful and comprehensive learning that has the power to be transferred to other situations and favor the acquisition of work methods and studies.