

An exploration of student mentoring to motivate and to enhance interactive learning in undergraduate engineering courses

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ABSTRACT

Within the objectives set by University guidance is the promotion of peer tutoring, developed primarily between advanced-courses students and first-year students. While it is true that this type of experience is widely disseminated in Faculties of Pedagogy and Psychology, its limited implementation in Engineering Schools is no less true.

This communication describes the mentoring experience that has been carried out among third-year and second-year undergraduate students in order to improve the academic results of the latter ones in the subject of "Automation", included in the syllabus of second course of the Degree in Industrial Engineering Technology, all of it based on the experience acquired by the former ones. A group of mentor students has been chosen amongst those who had agreed on the key points of the subject, as well as on the work strategy in terms of conducting laboratory practices and carrying out group work.

In order to attain this goal, the student mentors have used on-line tools already handled skilfully in the previous course as MATLABTM and SIMULINKTM for the learning of fundamental concepts of the subject "Automation" with explanatory workshops on exercises proposed in class, advising their supervised peers in the improvement of their own learning so as to maximize their potential to get the required competences before the general assessment.

A guideline document for the second-year student has also been made in order to help students to improve the final assessment results so as to prevent the mistakes made by the third-year mentor students during the previous course. Finally, the mentor students have invited the rest of second-year students in public session and have commented through a personalized exhibition the different strategies followed.

The experience of mentoring carried out has led to a better adaptation of the student to the subject and has allowed the teacher to know the difficulties in the handling by the students of the on-line learning tools. It has also shown an improvement in relations and communication between students and teachers thanks to the intermediation role of the mentor students.