

EUCEET 2018

4th International Conference on
Civil Engineering Education

CHALLENGES FOR THE THIRD MILLENNIUM

Service-learning in Civil Engineering Education: new experience in the field of road safety

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ABSTRACT

Service-learning is an educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of the course content and enhanced sense of civic responsibility. This new methodology has the potential to address many of the issues facing civil engineering education: can clearly enhance classroom learning, promote project based curricula and increase students' retention of knowledge. Despite the numerous benefits of service-learning in civil engineering education, little research has been done to date to evaluate this new pedagogy; and until now, literature is focused on the limited experiences of Engineers without Borders, organizations which promote and facilitate the integration of international service projects into local engineering curricula.

In terms of road safety, the prevention tools and the management of the traffic accidents is a discipline that can be better understood through the road victims' associations. Working with victims' associations can help to better understand the accident risk indicators, the types of injuries caused by these accidents and their physical and legal consequences. This paper contributes to this limited literature by assessing the positive and negative experiences encountered by students when undertaking a service-learning project for the first time. The methodology was tested on a survey sample of 61 students enrolled in the "Traffic Management" module in the Civil Engineering Master's degree at the Technical University of Madrid (UPM). Students were organized in groups of 6 and 7 members and each group was assigned with a road accident victims' association in order to develop a case study during four weeks. This pilot experience has been supported by Spain's Directorate General of Traffic (Dirección General de Tráfico) and by UPM, as part of the 2016-2017 Competitive Funding Programme for Educational Innovation Projects (IE1617-0401).

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