

Education for Sustainability Using PBL on an Engineering Course at the National University of Colombia

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Abstract : This article describes the implementation experience of Project-Based Learning (PBL) in an engineering course of the Universidad Nacional de Colombia, with the aim of strengthening student skills necessary for the exercise of their profession under a sustainability framework. Firstly, we present a literature review on the education for sustainability field, emphasizing the skills and knowledge areas required for its development, as well as the commitment of the Faculty of Engineering of the Universidad Nacional de Colombia, and other engineering faculties of the country, regarding education for sustainability. This article covers the general aspects of the course, describes how students team were formed, and how their experience was during the first semester of 2017. During this period two groups of students decided to develop their course project aiming to solve a problem regarding a Non-Governmental Organization (NGO) that works with head-of-household mothers in a low-income neighborhood in Bogota (Colombia). Subsequently, we show how sustainability is involved in the course, how tools are provided to students, and how activities are developed as to strengthen their abilities, which allows them to incorporate sustainability in their projects while also working on the methodology used to develop said projects. Finally, we introduce the results obtained by the students who sent the prototypes of their projects to the community they were working on and the conclusions reached by them regarding the course experience.

Keywords : sustainability, project-based learning, engineering education, higher education for sustainability

Conference Title : ICESD 2017 : International Conference on Education, Sustainability and Development

Conference Location : Paris, France

Conference Dates : December 28-29, 2017