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SPECIAL ISSUE ON:

Open Source & Collaborative Project Based Learning in Engineering Education

Guest Editors

Andrés Díaz Lantada[1*] & Carmelo De Maria[2]**

[1]Escuela Técnica Superior de Ingenieros Industriales, Universidad Politécnica de Madrid, Spain
*Contact: adiaz@etsii.upm.es

[2]Centro di Ricerca E. Piaggio and Department of Ingegneria dell'Informazione,
University of Pisa, Pisa, Italy
**Contact: carmelo.demaria@centropiaggio.unipi.it

Project based learning is appreciated worldwide as a teaching-learning methodology capable of: introducing students to real complex problems, helping them to apply and integrate the concepts acquired during lessons or courses, involving them in working teams, with which several professional outcomes are trained and developed, and promoting overall motivation and dedication, if adequately implemented. In engineering education project based learning methods are of special relevance due to the complexity of engineering products, processes and systems and to the fact that engineers actually work by developing projects, in which holistic approaches are necessary.

In many cases, project based learning activities face important challenges that may limit their implementation or sustainability. Apart from the necessary motivation of professors developing these project based strategies, the promotion of communication among the team of professors and the groups of students, the design of fair assessment procedures and the methodic selection of projects to be developed are key aspects for successfully creating the adequate ambience of mutual collaboration and learning. These issues can be normally tackled in a very straightforward manner by focusing on the training of engineering educators.

However, considering the expensive software, hardware, materials, design and manufacturing technologies, among others, usually required for professionally developing engineering projects, relevant cost-related issues arise, which may be more complex to manage, hence hindering the long-term sustainability of these methods and even leading to educational gaps based on social status, which is unacceptable.

Fortunately, the democratization of a wide set of technologies, by means of open-source developments, is already having transformative impacts in sectors including information and communication technologies, education and health, to cite some examples. In addition, new collaborative paradigms, based on an intensive use of social networks, online infrastructures and open-platforms for the promotion of co-creation and collaborative project management, are reshaping professional practice and also affecting many areas of study, including all engineering fields and, clearly, education.

These innovative methods and technologies can prove to be very interesting resources for supporting the generalization of project based learning in engineering education and for minimizing the investment required for their implementation and sustainability. Besides, as these tools are becoming part of professional engineering practice, students should be aware of the benefits and challenges linked to open-source and collaborative project development.

In order to search, generate, gather and provide some clues for solving the previously mentioned challenges linked, to the promotion of these innovative open and collaborative approaches to engineering design and project development, the Special Issue on "**Open Source & Collaborative Project Based Learning**" will focus in depth on aspects such as:

- Open-source project based learning experiences focused on technology democratization.
- Collaborative project based learning experiences supported by innovative technologies.
- Open-source hardware and software for supporting project based learning.
- Open-hubs and technological platforms for supporting project based learning.
- Project based learning initiatives connected to service learning.
- Project based learning initiatives connected to equitable access to essential technologies.
- Student internationalization by means of project based learning and collaborative tools.
- Cases of study of open-source technology development in educational environments.

Submissions are to be sent by e-mail in MSWord (.doc) to contact guest editors:
Prof. Andrés Díaz Lantada: adiaz@etsii.upm.es
Prof. Carmelo De Maria: carmelo.demaria@centropiaggio.unipi.it

Important Deadlines

Submission of extended abstracts (around two pages): May 31st, 2018

Notification of reviewers' feedback: June 30th, 2018

Submission of manuscript: September 15th, 2018

Notification of reviewers' feedback: November 15th, 2018

Submission of final manuscript: December 15th, 2018

Manuscripts should be written in English and limited to 12 one-sided, one-column, single-spaced pages. Manuscripts should include keywords, complete affiliation of the authors and a short biography, and the citing and listing of references should be in the IJEE style. Figures and illustrations should be suitable for non-color printing.

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