

Guest Editorial

Engineering Education Everywhere: Good Practices for Emergency Situations and Remote Regions – Part 2

Higher education in general greatly benefits from face-to-face interactions between students and professors, for making the educational experience more effective, efficient and human. In the special case of engineering education, the fundamental relevance of hands-on activities, of practical tasks in workshops and laboratories and of employing software resources in collaborative working environments, among others, support the acquisition of important professional skills. Besides, daily interactions between students and professors are essential for empowering students' soft skills, including teamwork, creativity, oral communication, flexibility, critical thought, to cite some examples.

Successful engineering education relies not only on continuous human interactions, but also on important software and hardware resources, including well-equipped laboratories and design rooms, to provide students with the most possible holistic approaches to engineering practice. Furthermore, traditional distance learning methods are not always suited to all engineering disciplines and, consequently, different e-learning, b-learning and m-learning methodologies co-exist, in most cases importantly supported by advanced software and hardware tools, for enabling the implementation and management of virtual classrooms and laboratories.

On the one hand, all these special requirements may limit the equitable access to engineering education in remote regions and low-resource settings, as distant engineering education is necessarily technology-dependent. On the other hand, the impact of emergency situations, in which on-site learning may be compromised, affects engineering studies with special virulence. Nowadays, with the recent outbreak of the SARS-CoV-2 and still in the middle of the related Covid-19 pandemic, most technical universities worldwide are living challenging moments and progressively adapting to distance education and evaluation methodologies, which at the same time, are being rapidly reformulated.

Inspiring educational transformations are continuously arising, in order to make engineering education reach everywhere. In many cases, especially since the beginning of the great confinement, students are experiencing new learning environments, co-creating through online platforms, studying in new ways and employing a wide set of resources, whose impact on their overall learning cannot be underestimated. However, there are still many unknowns, as regards: the future sustainability, impact and spread of distance learning methods; the possibility of successfully training engineers in emergency situations and in remote and low-resource settings; the adequate acquisition and evaluation of learning outcomes through virtual interactions; among others.

To search, generate, gather and provide some evidence for solving the previously mentioned challenges and for supporting the ongoing educational transformations in engineering education, we proposed the present IJEE Special Issue on "Engineering Education Everywhere: Good Practices for Emergency Situations and Remote Regions".

The topic has generated an outstanding interest from colleagues and more than 60 papers have been received for evaluation since the launch of the call for papers. The special issue is being published in three parts, to give space to debates and discussions linked to this continuously evolving topic.

This Part 2 of the Special Issue comprises 12 selected papers, which provide comprehension about how engineering education is evolving, with the perspective of two years and academic courses performed amidst a global pandemic. Topics covered include insightful debates on the benefits and limitations of online learning environments and virtual labs, varied approaches, strategies and good practices for teaching in lockdown and semi-lockdown situations, educators' and students' feelings and opinions about engineering education in the ongoing pandemic, and opportunities towards a more sustainable education, achieved through hybrid models.

The Guest Editors are profoundly grateful to the authors for their outstanding involvement with this special issue and appreciate the advice and continued confidence of Chief Editor Ahmad Ibrahim. We truly hope that the result of this second part of the Special Issue, linked to "emergent and remote engineering education" will be according to authors' expectations and of interest for colleagues and readers of the

International Journal of Engineering Education. We also hope that the published studies may support engineering educators towards “engineering education everywhere”.

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