

Guest Editorial

ICL2017 Highlights

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The theme of the ICL2017 Conference was "Teaching and Learning in a Digital World". The event was held in Budapest, Hungary, September 27-29, 2017 (<http://www.icl-conference.org/icl2017/>). ICL2017 was the 20th International Conference on Interactive Collaborative Learning and 46th IGIP International Conference on Engineering Pedagogy. ICL2017 was organized in cooperation with Óbuda University, International Association of Online Engineering (IAOE) and International Society for Engineering Pedagogy (IGIP).

The program committee and the reviewers had to review 590 papers. Finally 224 papers were presented in 40 parallel sessions. The papers were divided into sessions with full papers, short papers and works in progress. Since, traditionally, ICL2017 is especially directed to close the gap between pure academic research and applications as well as to experiences in the daily educational processes, several special sessions organized by prominent researchers and educators discussed emerging fields in Engineering Education, such as:

- New learning models and applications
- Knowledge management and learning
- Lifelong learning
- Educational Virtual Environments
- Collaborative learning
- Remote and virtual laboratories
- Mobile learning environments applications
- Research in Engineering Pedagogy
- K-12 and pre-college programs
- Evaluation and outcomes assessment
- Project based learning
- Real world experiences
- Engineering Pedagogy Education
- Flipped classrooms
- Technical Teacher Training
- Impact of globalization
- Adaptive and intuitive environments
- Pilot projects
- Academic-industry partnerships
- Ubiquitous learning environments

There were three Special Sessions:

- "Talking about Teaching 2017" (TAT'17)
- "Entrepreneurship in Engineering Education" (EiEE)
- "Game-based Learning"

The conference started after 4 workshops and one tutorial. The 1st workshop presented the application of an innovative tool to help teachers integrate and use ICT effectively in their teaching practice. The 2nd workshop, on Engineering Pedagogy, focused on the IGIP curriculum.

The tutorial on Collaborative OpenCourseWare Authoring explained the practice of the SlideWiki Platform.

The 3rd workshop was an introduction to Bluetooth Low Energy (BLE) System Design. The 4th workshop showed Cloud-based Components Design and Deployment within the University Educational Environment.

Four keynote speeches were given during the conference on a variety of current topics regarding Engineering Education.

Dale A. Martin, CEO of Siemens Hungary, opened the conference with a speech on "Shaping the Digital Future in Education – Together". After introducing the field of Digitalisation and Industry 4.0, which can change how people work, the way students learn and what they are taught, he emphasized that besides the latest technological achievements it is more important to focus on skills such as cooperation, teamwork and knowledge sharing. Universities also need to keep pace with the changes, so that their graduates will be able to find fulfilling employment, with multinationals and SMEs alike. A 'new level of partnership' is emerging between academic institutions and business to create the foundation for long-term success to achieve mutual benefits.

The next talk was by Michael K. J. Milligan, Executive Director and CEO of ABET, a nonprofit organization that accredits in 30 countries nearly 3,700 college and university programs in the disciplines of applied science, computing, engineering, and engineering technology. He discussed ABET's role in helping shape the global technical professional of tomorrow. He provided his views on some of the unique challenges facing future engineering education, and gave insights into ABET's expanding international engagement. He also shared his thoughts on learning in a collaborative/teaming environment and how the incorporation of these methods into a student's academic program will potentially impact the future global workforce.

András Benedek, Professor of Education in the Department of Technical Education at Budapest University of Technology and Economics, and DSc of the Hungarian Academy of Sciences, presented the "Transforming Turn in VET: Opening up and Strengthening the Image" speech. He included messages about changes of work and education, transformation of labor market and VET structures, and new methodologies using the info-communication potential.

Greet Langie Vice-dean of the Faculty of Engineering Technology at KU Leuven (Belgium) and promotor of the Erasmus+ project readySTEMgo (<https://iiw.kuleuven.be/english/readystemgo>) delivered a talk on "ReadySTEMgo: secondary education predictors of study success in a first-year STEM-programme".

The readySTEMgo-project aims to improve the retention rates of higher education STEM programmes by focusing on the academic readiness of incoming students. It intends to identify those students with an increased propensity for dropping out at an early stage of the chosen STEM programme. To achieve this goal, the key STEM competencies required for success in a STEM study programme were established and diagnostic tests set up to identify students at risk.

With this issue, the iJEP Journal provides a selection of the engineering education related research and best practices that were presented at ICL2017. Authors whose papers could be of great interest for the readers of the iJEP Journal were invited to submit an extended and/or updated version of their work.

The lively discussions during the sessions as well during the social functions of the conference covered all the new trends in engineering education as well as traditional issues educators and researchers have been facing for many years. Virtual labs, game-based learning and quality in engineering education were the topics that got the lion's share in these discussions. ICL2017 really represents a significant milestone in the history of engineering education!

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