Editorial

The current issue (30-2) is divided into two sections: The first section is a special issue consisting of selected papers from the ICOI Conference held in Hua Hin, Thailand in 2013. I am very grateful to Professors Charles Sheih and Alex Maritz for guest-editing this special issue.

The second section includes regular contributions on a variety of topics that include: Gender and Minorities issues, STEM, Reading Abilities, Communications, Global Preparedness, Teaching Methodologies, PBL, Engineering Design, Assessment, Lego Mindstorms, Supply Chain, Simulators, Remote Labs, Quality Control, Control Systems, RFID, Sensors, and Water Quality.

In the first paper, Stefanou et al. examine the relationship between the personal factors that identify a self-regulated learner and the environmental factors related to gender composition of engineering classrooms. The study explores whether there is a relationship between the gender composition of the classroom, the gender match between the instructor and students and learning outcomes related to self-regulated learning. Data were collected over a period of two years from 176 engineering undergraduates and four instructors.

In the next paper, Bond et al. investigate the relationships among students' gender & race, methods of instructions, and learning outcomes. They put forward a 4-P model (presage-pedagogy-process-product) of the student learning process. The model was tested by a five-semester experiment that was carried out at two US universities. Data were collected from 696 students enrolled in Introduction to Engineering courses during five consecutive semesters.

Nicholls et al. developed a classification scheme based on reviewing prior educational research and examining the National Science Foundation's categorizing of fields of study; a predictive model was developed. The model tests the classification of majors into various four-year degree outcomes. It tests the inclusion of majors beyond the classic sciences, engineering, and mathematics. The records of 12,140 students were examined; there were 11,320 students who responded in all waves of data collection. A manageable set of 66 variables (out of more than 7000 possible variables) was selected.

Sucena et al. investigated the reading abilities of college students in the context of engineering education. They present and discuss data obtained from 84 students. An existing screening test for assessing reading difficulties of children and teenagers was used.

Medina-Sanchez et al. present a method to teach international team-working skills, and to support the learning process for the mobility of students. It was prompted by a test to determine the level of technical English and an opinion survey of 187 local undergraduates. The authors contrast their method with other approaches. They also present an assessment of their method.

Ragusa presents a study that measures the impact of formal and informal experiences and socio-demographic factors that impact engineering students' preparedness for global workforces. The author presents the Engineering Global Preparedness Index (EGPI) to determine the impact that formal and informal pedagogical practices played on engineering students' global preparedness. It is intended to present a true measurement of student knowledge rather than just student perception. A group of 148 undergraduates and graduates were involved in the study.

Gaspar et al. investigate the impact of the implementation of the model of education proposed by the European Higher Education Area, EHEA at a Spanish university. They present the results of three surveys that were administered to 318 students, 34 lecturers, and 10 administration/services staff members. They represent approximately 15%, 16%, and 21% , respectively, of the total numbers affected by the change.

Diaz et al. discuss the implementation and evaluation of a mixed assessment methodology that involves various continuous assessments including virtual and manual. The approach is meant to ensure quality and help teachers manage large numbers of students. It was applied to several engineering courses delivered in accordance with the model proposed by the European Higher Education Area, EHEA.

Jeon et al. investigate the feasibility of incorporating the ARCS (Attention-Relevance-Confidence-Satisfaction) model of motivation into Project Based Learning (PBL) in an engineering course. The participants were 48 (19 females, 29 males) second-year students.

Lee and Jin introduce the Rolling Discussion Technique which is based on the concept of collective intelligence, which facilitates creative problem solving activities by sharing the ideas of a large number of students within the class. They seek the validation of the development technique and principles of this approach; they report on the input from six engineering education and educational technology experts who examined the instructional design principles of the approach.

Kim et al. propose an educational hands-on project for a graduate course on control systems using inexpensive subsystems. They assess the impact of the approach on the participating students.

Zhong and Huang introduce an approach for learning Supply Chain Management, SCM, through Teaching by Examples and Learning by Doing, TELD. It uses Radio Frequency Identification, RFID, enabled learning supply chain, LSC, based on advanced Internet of Things, IoT, technologies. A case study is also detailed.

Zivkovic et al. present a software tool that was developed for the teaching and learning of wireless sensor networks. The system has been used for a few years by students for both self-learning and laboratory assignments. The impact of the system on students was recently evaluated through the results of questionnaires administered to 22 students. The authors also discuss experiences gained through the use of the software.

Anton et al. present an approach to bring actual industry problems closer to engineering undergraduates by exposing them to problems where there is not always a pre-determined solution to be followed. The approach was built on the utilization of a power plant simulator to teach Rankine cycles. They present a case study and its evaluation.

In the final paper of this issue, Delgoshaei and Lohani present the design process and development of a real-time water monitoring system developed to enhance water sustainability education. They also discuss in detail the educational outcomes, including: motivational outcomes for freshmen, cognitive outcomes, outcomes related to first-year engineering programs, outcomes related to civil and environmental, outcomes of a real-time water monitoring system to enhance water sustainability education engineering courses, and outcomes related to electrical and computer engineering courses.

Contributing authors to this issue are from Taiwan, Australia, USA, Portugal, Spain, Korea, UK, Hong Kong, and Serbia, to whom I would like to express my thanks and appreciation for their contributions.

Ahmad Ibrahim