

Editorial

Once again, I would like to express my gratitude to Prof. Dr. Andrés Díaz Lantada for suggesting the topic of *Learning through Play in Engineering Education* for a special issue of the International Journal of Engineering Education and for guest-editing the special issue. As I mentioned in the previous editorial there were a large number of contributions and the special issue was divided into two parts; part two is included here in the first section. Part one appeared in a previous issue of the IJEE (vol. 27 issue 3).

The second section includes eight papers with contributions in: Engineering Thinking, Scientific Reasoning, Assessment, Cooperative Learning, Active Learning, Interactive Learning, Electric Machinery, Computer Programming, Statistics, Thermodynamics, and Refrigeration.

The first paper in the section is by Waks et al; they discuss the characteristic of engineering thinking with a focus on Electronics Engineering. They also contrast engineering thinking in design with scientific thinking in research. Al-Arfaj, on the other hand, presents an assessment of the scientific reasoning abilities among first-year engineering and science students.

A framework for assessing the learning outcomes in Electric Machinery courses is presented by Almarshoud. The proposed framework is intended to help instructors of Electric Machinery courses to evaluate the learning outcomes of the courses. An approach for student assessment in cooperative learning in a computer programming course is presented by Arevalillo-Herráez, and Claver; it emphasizes individual accountability. The approach is meant to help students gain the benefits of cooperative learning and at the same time avoid some of its possible disadvantages. This is followed by a paper by Huang and his coworkers; they present another facet of cooperative learning where game theory is applied to enhance students' motivation.

Vidic presents an assessment of the impact of problem-based learning (PBL) on the learning outcomes of engineering students with problem-solving skills in a Statistics course. Peer instruction is investigated by Koretsky and Brooks; they contrast the impact of both easy and difficult conceptual questions in the area of thermodynamics.

The final paper is by Cabello and his coworkers. They present an interactive software tool that is intended to help students' practical learning in the area of refrigeration. Students are able to observe the performance of refrigeration plants thus gaining a deeper understanding of the theoretical concepts learned in class.

I would like to thank all the authors for their important contributions and I hope the readers find this issue of the IJEE interesting and informative.

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