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## Editorial

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### Piet Kommers

Faculty of Behavioral Sciences,  
University of Twente,  
7500 AE Enschede, The Netherlands  
Email: [Kommers@edte.utwente.nl](mailto:Kommers@edte.utwente.nl)

### Margriet Simmerling

Helix5, Mendelsohnlaan 12,  
7522 KP Enschede, The Netherlands  
Email: [simmerling@helix5.nl](mailto:simmerling@helix5.nl)

**Biographical notes:** Piet A.M. Kommers is an Associate Professor at the University of Twente, the Netherlands. His research interests are in the areas of media, communication and education. Since 1990, he has been progressively involved in a broad range of European-based research projects in media-supported and continuous learning. He holds a UNESCO Professorship and is an Honorary Doctor at Capital Normal University in Beijing, China. He is an Adjunct Professor in the Faculty of Computer Science in Joensuu University, Finland, Adjunct Professor at Curtin University in Perth (Australia) and Advisor to the Ministry of Education of Singapore.

Margriet Simmerling is a Peer Consultant/Senior Manager for R&D projects in the area of e-society and web-based communities. She participated in the advisory board for the Dutch Ministry of Economic Affairs and is reviewer for the European Commission. She designs and moderates e-learning modules and workshops in the domain of education technology and psychology at the PhD level.

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This special issue focusses on the motivational and existential basis of learners and educational scenarios. Problem-based and project-based learning offer an essential basis, so that students feel ownership on their learning and bring a closer similarity between learning and real task demand in full practice, so that assessment becomes less trivial and artificial. These underlying notions help higher and vocational education to benefit more from ICT infrastructures. For those reasons, we brought the underlying authors and articles together. Fourteen authors from nine countries (United Arab Emirates, Saudi Arabia, UK, Poland, Ukraine, Russia, the Netherlands, Turkey and India) inform you about the latest research and developments.

The development of higher order thinking skills, and the ways in which they are related to language competence and cognition is an important area for global education.

The article “Integrating the development and usage of higher order thinking skills in the communication classroom: perceptions and impact” provides a useful coverage of key issues in English for specific purposes. Muna Balfaqeeh and Asli Hassan conclude that the study raises a number of questions. They also make suggestions for the expansion of this project.

Sometime teaching inhibits the creativity of the students. Problem-based learning is an approach to stimulate the curiosity of a student and allows the student to experience the strong link between the study and the professionals' job carrier.

Satish Jangali, Vinayak Kulkarni, Sanjay Kulkarni and V.N. Gaitonde made a case study of an open-ended experiment in Industrial and Production engineering. In the article "Attainment of major competencies of program-specific outcome in industrial engineering and simulation lab through open-ended experiment", the authors describe the advantages of this type of learning and conclude that this approach is helpful for the students to become an effective and efficient industrial engineer.

The article "Project-based cooperative learning to enhance competence while teaching engineering modules" shows how control engineering in electronics can be taught. Vaibhav Gandhi and Zhijun Yang observe that students not only need the theoretical knowledge but should also have knowledge of the software as well as practical applications of the same. They conclude that the integrations of lectures, assignments and mini-projects coach the students towards an attitude of deeper lifelong learning.

'Accreditation in Education' is an important issue. Universities worldwide are expected to deliver evidence that the college or university program meets the quality standards of the profession for which that program prepares graduates. Improving the teaching methods are part of the process. Also the quality of the testing and the formulation of the questions used during the testing need attention.

How this could be done is reported by Zuhaira Zain. In the article "Assessment on student performance using Rasch model in multi-tier application development course examination", the author presents the results of the evaluation of the student performance for a specific course at the University by using the Rasch model. The course is one of the core subjects that must be completed by the IS students before they graduated. The measurement is based on the final examination questions and the raw marks will be analysed by Rasch measurement model. The results can be used by the teachers to improve the courses and tests.

In the article "Using effective and adequate IT tools for developing teachers' skills", the authors present the results of IRNet. International research network IRNet is very good example for effective collective research, collaborative study and permanent exchange experience which is not easy to do in the group of researchers from nine countries. Eugenia Smyrnova-Trybulska, Nataliia Morze, Tatiana Pavlova, Piet Kommers and Iryna Sekret discuss and analyse the evaluation of the IT tools, their application in education (the effective and adequate categorisations for 'learning styles') and LMS systems. Their preliminary analysis is very important voice in the debate about IT tools for developing teachers' skills in particular, according UNESCO (2011).

Piet Kommers and Margriet Simmerling