

Editorial: A Message from the Editorial Team and an Introduction to the July-September 2013 Issue

Peter Brusilovsky and Mike Sharples

WELCOME to the third 2013 issue of the *IEEE Transactions on Learning Technologies*. The main feature of this issue is a Special Section on Learning Systems for Science and Technology Education. An excellent team of guest editors, Bert Bredeweg, Bruce M. McLaren, and Gautam Biswas, has assembled a collection of six papers that present a variety of learning technologies that span this important area of education. An introduction to the special section and a summary of the six papers are included in their guest editorial.

In addition to the special section, this issue includes three regular papers.

The paper "Operationalizing the Continuum between Well-Defined and Ill-Defined Problems for Educational Technology," by Nguyen-Thinh Le, Frank Loll, and Niels Pinkwart, discusses an issue of so-called ill-defined problems that attracts increasing attention in the field of intelligent tutoring systems. The main contribution of the paper is a classification of the degree of ill-definedness of educational problems based on several problem features.

The second paper, "Interoperable Intelligent Tutoring Systems as Open Educational Resources," by Gustavo Soares Santos and Joaquim Jorge, discusses another important emerging issue in the domain of intelligent tutoring systems: interoperability. The lack of interoperability is argued to be one of the key reasons that prevents this group of educational systems from being more extensively used in everyday educational practice. To resolve this problem, the authors suggest a standards-based approach for implementing open source and interoperable intelligent tutors.

The third regular paper in this issue addresses the issue of standards on a broader level of courses and competencies. Competence tracking and competence-based course design have recently emerged as important issues in Europe due to the Bologna Process and the recent introduction of The European Qualifications Framework (EQF). In their paper "A Software Suite for Efficient Use of the European Qualifications Framework in Online and Blended Courses," Beatriz Florian-Gaviria, Christian Glahn, and Ramon Fabregat Gesa introduce a set of teacher-oriented tools that facilitate the use of EQF in several stages of the learning process from course design to learning analytics visualization.

In this introduction, we would also like to discuss the IEEE Computer Society's new Reviewer Appreciation Program, which strives to acknowledge the journal's best reviewers. Reviewing a journal paper can be an unwelcome intrusion into academic life. The paper arrives at an inconvenient time, it may demand effort to understand dense prose on an unfamiliar topic, there is a struggle to write clear and supportive advice to the authors, and the effort gives no immediate reward beyond the satisfaction of having supported the community of learning technology researchers. So, we are pleased to have the opportunity to mention eight people who have contributed three or more reviews during 2012 and have received high average scores from our Associate Editors for the quality of their submissions: Richardo Conejo, Joachim Kimmerle, Frederick Li, Elvira Popsecu, Olga Santos, Marc Stadtler, Kate Thompson, and Juan-Diego Zapata-Revera. In total, 281 reviewers assisted the journal during 2012, with a mean submission time of 29.5 days. We thank you all and look forward to your continued support. We also welcome additional reviewers with expertise in all aspects of learning technologies. Please contact us if you would like to review for the journal.

Peter Brusilovsky, *Editor-in-Chief*

Mike Sharples, *Associate Editor-in-Chief*