Editorial

Salvador Sanchez-Alonso and Enayat Rajabi, Guest editors

Welcome to the Bulletin of the IEEE Technical Committee on Learning Technology, Volume 16, Number 4, December 2014 issue. This special issue discusses how the Linked Data approach can be applied for sharing, reusing and enriching the eLearning resources on the Web and what advantages it can bring to the eLearning stakeholders.

The first paper in this issue presents a solution to one of the main problems in Open Educational Resources repositories, which is the multiplicity of norms, standards and application profiles that preclude efficient search for resources within multiple repositories. The authors built a Linked data OER repository manager called COMETE, relying on semantic web techniques, and largely compatible with the new ISO-MLR standard. The new platform was based on RDF and provides more intelligent search capabilities within the Web of data both for designers who are building online environments such as MOOCs, or for students who should be equipped with friendly tools to choose resources, activities and co-learners suited to their needs.

In the second paper, the authors compare the performance of two distinct RDF native database implementations (4store and Jena Apache) in the specific context of a Semantic Learning Repository by evaluating the time of uploading the RDF data to the databases, and the response time for running the SPARQL queries. The results show that 4store performed better than Apache Jena for all the evaluated scenarios.

The third paper reports on the reflection of learning activities and revealing hidden information based on tracking user behaviors with Linked Data. The authors present a case study on usage of semantic context modeling and creation of Linked Data from logs in educational systems like a Personal Learning Environment (PLE) with focus on reflection and prediction of trends in such systems. Their case study demonstrates the application of semantic modeling of the activity context, from data collected for over two years from a widget-based system at the Graz University of Technology. The authors modeled the learning activities using domain ontologies, and query them using semantic technologies. The proposed approach offers easy interfacing and extensibility on the technological level as well as a fast insight on trends in e-learning systems.

In the forth paper, Carpani and his team present a Semantic Web based collaborative platform, so-called OpenFING, for video annotations. Using this platform, students and teachers can easily create video fragments, add annotations, as the the tool provides searching mechanism over structured metadata.

The last paper shows a novel approach to enable automatically matching MOOCs learning outcomes with learners' needs according to specific skills and competencies. The authors exploited novel developments published by the European Commission (the ESCO taxonomy) and developed a pilot application where candidates can create their professional profile by submitting their skills and enrich their profile by receiving supplementary content from the web of data. This pilot application demonstrates the feasibility and opportunities that derive from linking concepts from the ESCO taxonomy with skills on candidate profiles and learning outcomes of open digital resources. More specifically, the use of such an application can significantly benefit formal, informal and lifelong learners in developing appropriate competences that will increase their qualifications.

We sincerely hope that the issue helps in keeping you abreast of the current research and developments in Learning Technology. We also would like to take the opportunity to invite you to contribute your own work to the Bulletin of the IEEE Technical Committee on Learning Technology if you are involved in research and/or in the implementation of any aspect of advanced learning technology. For more details, please refer to the author guidelines at http://www.ieeetclt.org/content/authors-guidelines .

Deadline for submission of next issue:
30 January 2015