Proceedings of the Second International Workshop on Educational Knowledge Management (EKM 2016)

Bologna, 20 November 2016

A full day workshop in connection with the
[20th International Conference on Knowledge Engineering and Knowledge Management](#).

Editors :

Inaya Lahoud, Department of Computer Engineering, Galatasaray University, Istanbul, Turkey.
    Email: `inaya dot lahoud at gmail dot com`
Nada Matta, TechCICO team, University of Technology of Troyes, Troyes, France.
    Email: `nada dot matta at utt dot fr`
Fouad Zablith, Olayan School of Business American University of Beirut, Beirut, Lebanon.
    Email: `fz13 at aub dot edu dot lb`
Sebastian Ventura, Department of Computing Science and Numerical Analysis, University of Cordoba, Cordoba, Spain.
    Email: `sventura at uco dot es`

Preface

The second International Workshop on Educational Knowledge Management (EKM 2016)[1] was organized as a satellite event to the 20th International Conference on Knowledge Engineering and Knowledge Management (EKAW), held in Bologna, Italy, November 19th to 23th, 2016. The workshop was held on the 20th of November.

The interest in Knowledge Engineering and Knowledge Management for the educational domain has been growing in recent years. This can be seen in the series of conferences organized by the International Educational Data Mining Society and in papers discussing the role of knowledge management in higher education. As education is increasingly occurring online or in educational software, resulting in an explosion of data, new techniques are being developed and tested, aiming for instance to improve educational effectiveness, determine the key factors to the success of educational training, support basic research on learning, or manage educational training by satisfying the needs of a community, local industry, or professional development. The paper "Knowledge Management for Educational Information Systems: What Is the State of the Field?" written by Christopher A. Thorn in the journal "Education Policy Analysis Archives" put on the need of KM techniques to face current evolution of educational systems especially the mobility of students/teachers involved in interactive learning. Thus, educational systems need KM to support and control the evolution of teaching and learning, and KM techniques must be adapted to education and take into account pedagogic dimensions.

The event aimed to bring together researchers, academic and professional leaders, consultants, and practitioners, from the domain of semantic web, data mining, machine learning, linked data, and natural language processing to discuss and share experiences in the educational area.

In the call of papers, we invited submissions reporting original research related to any problem of managing and exploring information in the educational area in schools, colleges, universities, and other academic or professional learning institutions.

A non-exhaustive list of topics for the workshop included the following:
- Knowledge management and ontology
- Knowledge management and Multi-agents system
- Data mining and semantic web
- Knowledge acquisition, extraction, reuse
- Natural language processing to improve educational effectiveness
- Providing feedback to teachers and other stakeholders generated from EKM methods
- Generic frameworks, methods and approached for EKM
- Learner or student modeling
- Mining the results of educational research
- Educational process mining
- Improving educational software
- Evaluating teaching interventions
- Integrating data mining and pedagogical theory

---

[1] Website: http://uni.gsu.edu.tr/index.php/en/conferences-en

- Integration pedagogical dimensions for knowledge appropriation
- Practice learning experiences and techniques
- Improving teacher support
- Semantic annotation
- Linked educational data
- Educational knowledge evolution
- Community of learning and community of practices

Two members of the following program committee have reviewed our submissions:
- Ayako Hoshino, Data Science Research Laboratories, NEC Corp., Kawasaki, Japan
- Catherine Faron Zucker, University of Nice Sophia Antipolis, France
- Davide Taibi, Institute for Educational Technologies, Italian National Research Council, Italy
- Marie-Hélène Abel, Sorbonne universités, Université de technologie de Compiègne, France
- Lisa Beinborn, Department of Computer Science, TU Darmstadt, Germany
- Kai Wing Chu, CCC Heep Woh College, Hong Kong
- Eddie Soulier, University of Technology of Troyes, France
- Nitish Aggarwal, NUI Galway, Ireland
- Lars Ahrenberg, Linköping University, Sweden
- Christophe Paoli, Galatasaray University, Turkey

The EKM program committee has selected the best papers submitted to the workshop. Following the reviewers' recommendations, six full papers out of the eleven submitted papers were accepted for presentation and inclusion into the workshop proceedings volume; subject to revisions as recommended by the reviewers. We invite participants and readers to enjoy the workshop program.

The workshop was a half day format with one invited speaker, and six oral presentations.

Invited speaker

Nada Matta, is a full Professor at the University of Technology of Troyes. She studies techniques in knowledge engineering and management and specially to handle cooperative activities. She organized several workshops and Tutorials on KM jointly to IJCAI, ECAI, COOP, CTS conferences. She contributed on several book publications in experiences of KM in companies and learning. She is involved in scientific committee of several conferences, journals and research groups and she manage several projects on the application of KM in several domains (design, consulting, security, safety). Her talk was entitled "an Experience of use KM in Teaching at UTT". You can find more details at the end of this document.

Workshop program

9:00-9:15: Opening
9:15-10:30 session I

9:15-9:40 **Towards an Ontology-based Representation of Accessibility Profiles for Learners** (Mirette Elias, Steffen Lohmann and Sören Auer)

9:40-10:05 **A Formalization Of Standard Knowledge And Skills For The French Elementary School Curricula** (Oscar Rodríguez Rocha and Catherine Faron Zucker)

10:05–10:30 **Towards an architecture for universities management: Assisting students in the choice of their specialization** (Inaya Lahoud and Fatma Chamekh)

10:30-11:00: coffee break

11:00-12:30: session II

11:00-11:25 **Learning from Design projects: How to keep track and learn from knowledge produced in daily activity** (Nada Matta, Guillaume Ducellier, Hassan Atifi)

11:25-11:50 **Learning scorecard: monitor and foster student learning through gamification** (Elsa Cardoso, Diogo Santos, Daniela Costa, Filipe Caçador, António Antunes and Rita Parada)

11:50-12:15 **Student Modeling Method Integrating Knowledge Tracing and IRT with Decay Effect** (Shinichi Oeda and Kouta Asai)

12:15-12:55 ***Invited talk*: an Experience of use KM in Teaching at UTT** (Nada Matta)

Discussion and end of workshop

13:00-14:00: lunch

Workshop co-chairs
Inaya Lahoud
Nada Matta
Fouad Zablith
Sebastian Ventura