

Introduction

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Biographical notes: Christine Lahoud is an Assistant Professor and Coordinator of the Faculty of Engineering at the French University, Egypt. She was an Assistant Professor at Galatasaray University in Turkey. She obtained her PhD in Computer Science from the University of Technology of Belfort-Montbéliard, France in 2013. Her research interests include knowledge management, semantic web and artificial intelligence. She has been a member of the Program Committee of several conferences. She organised several workshops on Knowledge Management as KARE 2011 and EKM (2014, 2016, 2018).

Elsa Cardoso is an Assistant Professor, and Director of the Master in Integrated Business Intelligence Systems at Instituto Universitário de Lisboa (ISCTE-IUL), Portugal. She obtained her PhD (European Doctorate) in Information Science and Technology, with a specialisation in Business Intelligence, from ISCTE-IUL (2011). She is the leader of the Business Intelligence Task Force of EUNIS (European University Information Systems organisation), and a researcher at the Information and Decision Support Systems Group of INESC-ID Lisboa. Her research interests include data visualisation, business intelligence and data warehousing, data mining, balanced scorecard, applied to higher education and healthcare.

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 organised 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).

1 Scope of the special issue

The high volume of information in organisations has led researchers to focus on knowledge management (KM) as a form of competitive leverage. KM aims to retrieve and share information within databases, documents and the know-how of employees to help cooperation and the improvement of ideas, increasing opportunities for innovation, and thus enabling organisations to better stay ahead of the competition.

Many organisations are implementing technologies and tools to better manage their knowledge. Successful examples can be found in private and public organisations from different sectors: industry, services, healthcare and education.

Interest in KM for the educational domain has been growing in recent years. This can be seen in many series of conferences and workshops, such as Educational Knowledge Management (EKM), International Educational Data Mining (EDM) and International Learning Analytics and Knowledge (LAK), as well as in papers discussing the role of KM in higher education. As education is increasingly occurring online or using educational software, a larger amount of data is being generated and is available for analysis. New technologies such as semantic web and data mining techniques are being developed and tested, aiming for instance to improve educational effectiveness, determine the key factors for the success of educational training, support basic research on learning, or manage educational training by satisfying the needs of community, local industry or professional development.

The main aim of this special issue is to highlight the importance of KM technologies and explore how they solve problems related to the management and analysis of educational information in schools, colleges, universities and other academic or professional learning institutions.

1.1 Subject coverage

- Educational knowledge management and ontologies
- Educational data mining
- Educational linked data and semantic web
- Knowledge acquisition, extraction and reuse in education
- Artificial intelligence, robotics and human-computer interaction in education
- Natural language processing to improve educational effectiveness
- Providing feedback to teachers and other stakeholders generated from EKM methods
- Learner or student modelling
- Learning analytics
- Educational information systems
- Improving educational software

- Practice learning experiences and techniques
- Evaluating and improving teachers' support
- Educational knowledge evolution
- Social media and games in learning
- Experiences and examples of the use of KM in education
- Global issues in education and research
- Visualisation of student learning patterns

1.2 Guest editors

- Assistant Prof. Christine Lahoud, French University, Egypt
- Assistant Prof. Elsa Cardoso, Instituto Universitário de Lisboa and Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa, Portugal
- Prof. Nada Matta, University of Technology of Troyes, France

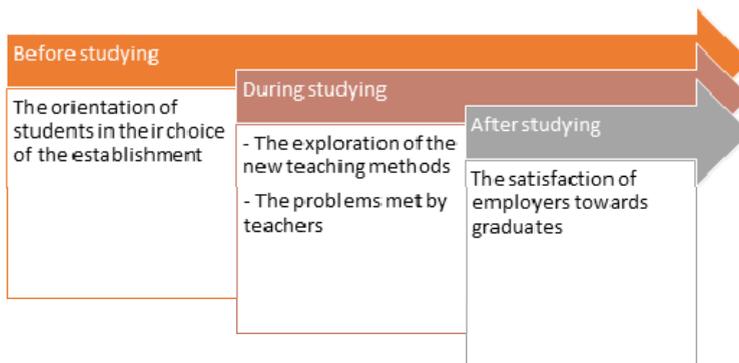
1.3 Program committee

- Farida Bouarab-Dah, Mouloud Mammeri University, Algeria
- Martin Drllik, Constantine the Philosopher University in Nitra, Slovakia
- Amit Pandey, Chitkara University, India
- Anne-Laure Ligozat, LIMSI-CNRS, France
- Nathalie Guin, LIRIS Laboratory, Claude Bernard Lyon 1 University, France
- EL Habib Benlahmar, Ben M'sik Hassan II University, Morocco
- Hicham El Khoury, Lebanese University, Lebanon
- Kholladi Mohemmed Khireddin, University of El Oued, Algeria
- Joao carlos Ferreira, ISCTE, Portugal
- Pedro Strecht, Universidade do Porto, Portugal
- Hisham Alidrisi, King Abdulaziz University, Saudi Arabia
- Charbel El Gemayel, Lebanese University, Lebanon
- André Fabiano de Moraes, Federal Institute Catarinense, Brazil
- Laura Farinetti, Politecnico di Torino, Italy
- Majid Bayani Abbasy, UNA, National University of Costa Rica, Costa rica

2 Papers overview

The accepted papers in this special issue deal with various problems in the field of education. They cover three important stages forming a cycle of management of educational knowledge.

Figure 1 Special issue covered problems (see online version for colours)



Indeed, a case study in Lebanon implements the formal concept analysis (FCA) to study university graduates' trajectories in order to assist and orient students in the choice of university and their specialisation. Afterward, other studies present systems to improve the e-learning by modelling its factors or by proposing a multi-agent system to index educational materials in order to propose the appropriate content to learners and satisfy them. This special issue presents also how new methods improve learning and interaction with students in laboratories using virtual reality technology, and help teachers by automatically generating quiz questions from the online knowledge DBpedia based on the NEFCE heuristics. Then we present a study on the problems faced by teachers in India and their feelings by studying parameters like work stress levels, welfare services, pay satisfaction, provident fund facility, and gratuity facility, professional with the satisfaction level of the contract faculty. Finally, we present a study on the satisfaction of employers towards graduates from higher education institutions using the hybrid multiple criteria decision-making (MCDM) method.