
Preface

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Biographical notes: Santi Caballé has a PhD, Master's and Bachelor's Degree in Computer Science from the Open University of Catalonia. In 2003, he joined the Open University of Catalonia as an Assistant Professor, teaching a variety of courses in Computer Science in the areas of Information Systems, Software Engineering and Collaborative Learning. Since early 2006 he has been working as an Associate Professor at the Department of Computer Science, Multimedia and Telecommunication at the Open University of Catalonia where he coordinates several online courses in the area of Software Engineering. His research focuses on e-learning, software engineering, network technologies, distributed learning, computer-supported collaborative learning, interaction analysis, and grid technologies.

Intelligent systems for information management have caused a drastic change in the way people focus on learning. An influencing issue concerns the analysis of both the systems performance and users interactions. The latter constitutes an important factor for learning group activity monitoring, support and performance.

This special issue follows the "2nd IEEE International Conference on Complex, Intelligent and Software Intelligent Systems" (CISIS 2008) (<http://www.cisis-conference.eu/cisis2008/>) held in Barcelona, Spain, 4–7 March, 2008. It aims at presenting innovative research from academics, professionals and practitioners about problems and solutions related to the development and use of intelligent management systems and applications to support e-learning from the knowledge-based perspective.

The special issue comprises five papers carefully selected based on their originality, significance, technical soundness, and clarity of exposition. A rigorous research methodology has been required, as well as a review of existing literature and adequate reference to bibliographical sources. All papers were selected with the aim to make both empirical and theoretical contributions based on models, designs, and experiences on the collaborative learning.

The papers in this special issue are organised as follows. The first and second papers present an ontological approach for e-learning and collaborative learning. The third and fourth papers base the success of collaborative learning on interaction management and analysis to ensure full support to the online learning activity. The last paper addresses the structural behaviour of collaborative work and learning from the face-to-face and virtual teams perspective.

In the first paper, Brut et al. (2009) present a service-oriented solution for providing users with recommendations of interest documents and possible collaborators, enhancing their mobility within a pervasive e-learning system. Their approach is based on the ACM classification system, which is used to develop user competence profiles, to annotate materials, and to recommend them.

Casillas and Daradoumis (2009) in the second paper describes an integrated approach for extracting and representing the knowledge generated, from the collaborative interaction of small learning teams that work together in distance to carry out a software project or a case study. The ultimate aim is to produce solutions for specific problems detected during group work and help the teacher supervise, assess and monitor the performance of learning groups more effectively.

Juan et al. (2009) propose in the third paper a simple data analysis model based on control charts to monitor online students' academic activity and performance by means of periodical reports sent to online instructors and students. These reports serve tutors to classify students according to their activity and learning outcomes, track their evolution, and identify those who might need immediate guidance or assistance as well as provide students with a periodical feedback which makes them aware of how they are performing as compared with the rest of the class.

In the fourth paper, Caballé and Xhafa (2009) report an experience of using an innovative collaborative learning tool to support real, collaborative learning by discussion. They employ a sociolinguistic model that builds a structure of the discussion and are used as indicators to analyse learners' interactions. The aim is to make students and their tutors be aware of their behaviour and performance as well as of the particular skills exhibited during interaction in order to achieve a more effective support and assessment of the discussion process and to enhance learning.

In the last paper, Shwartz-Asher et al. (2009) explore the structure of both face-to-face and virtual teams to work and learn. To this end, they propose a model that suggests that the team structure can be manipulated in order to increase the team's output. The ultimate aim of this contribution is to investigate how the structural behaviour of virtual and face-to-face teams may impact on teams efficiency, effectiveness as well as on teams output.

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