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## Introduction

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**Biographical notes:** Mario Muñoz Organero received an MSc in Telecommunications Engineering (1996) from the Polytechnic University of Catalonia and a PhD in Telecommunications Engineering (2004) from the Carlos III University of Madrid, Spain. He is an Associate Professor at the Carlos III University of Madrid. His research has included topics related to open architectures for e-learning systems, open service creation environments for next generation networks, advanced mobile communication systems, pervasive computing and convergent networks. His main current interest is in e-learning and m-learning technologies. He has participated in European-funded projects such as E-LANE, and in Spanish-funded projects such as MOSAIC learning and Learn3.

Fernando Alberto Freitas Ferreira holds a 5-year degree in Business Administration (1998), an MSc in Economics and Business Sciences (2002) and a PhD in Quantitative Methods Applied to Economics and Management (2008) from the University of Algarve, Portugal. In 2009, he was granted with a Calouste Gulbenkian Foundation fellowship for Post-Doctoral studies at the University of Memphis, Tennessee, USA. Currently, he is an Adjunct Professor at the Polytechnic Institute of Santarém, Portugal, and an Adjunct Research Professor at the Fogelman College of Business and Economics, University of Memphis. His theoretical and applied research has been published in national and international journals.

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The use of information systems to manage the education and training of students, in a competence based and harmonised education environment (such as the European Higher Education Area), provides efficient tools and techniques for effective learning and skills development. Safeguarding the specificity of the countries, one of the major objectives of any educational system is to provide students with the possibility of personal and interpersonal competence development by getting into any educational institution and receiving training. Therefore, the existence of a homogenised training system seems to be

necessary, which reflects, on the other hand, the need for uniformity of the educational systems and an organisational structure of an identical basis, in a World that deals currently with an increasing number of economic and social differences.

In this Special Issue of the *IJIOME*, we present a sample of the best papers presented during the 2009 *IASK Teaching and Learning International Conference*, held in Porto, Portugal, which are mainly focused on issues related to *assessment, cooperative learning, educational strategies, ICT, teamwork and technical competences*.

The first study, entitled 'Cooperative learning: a methodological answer to instructional design based on competences in the university environment', by Rosa María Pons, José Manuel Serrano, Clotilde Lomeli, Víctor Alcántar, Graciela Cordero, Edna Luna, Salvador Ponce, Rubén Roa and Tiburcio Moreno, captures interesting ideas about cooperative learning. The ideas are validated using a case study with professors in Spain and Mexico and the results are promising. The paper provides points of interest for reflection within the EHEA.

Following the same line of research (*i.e.* cooperative learning), the second research paper, entitled 'Development of the competences of teamwork through cooperative learning at the university', by Clemente Lobato, Pedro Apodaca, Marta Barandiaran, M.J. San José, J. Sancho and J.L. Zubimendi, presents and analyses the results of experimental data with students in a university in Northern Spain that makes use of collaboration in cooperative work assignments to gain social and interpersonal competences. The paper captures relevant data (although in a particular setting) about the process of developing social competences. The results provide some insight on the issue and, therefore, seem to be of interest to the research community.

In the same domain of technical competences, the third paper, entitled 'Teaching and ICT in higher education: applications, training and needs perceived by the faculty at Complutense University', by Carmen Alba Pastor and Ainara Zubillaga del Río, gathers data from 140 professors from an university in Madrid (Spain) and analyses the data showing the differences among different classifications of professors (area of expertise, gender, age, etc.). Data are quantitatively analysed and, as far as information and communication technologies' use are concerned, the results are a good contribution to understand the current situation in most universities in Spain.

After the faculties' perceptions in terms of training and needs are analysed, the fourth study, entitled 'Differentiation in the assessment between different groups of students: are experience and maturity more important than learning time?', by Ana Paula Alturas and Bráulio Alturas, focuses on the students' analysis, and presents the results of the assessment of two different 'types' of students undertaking a similar learning process but with very different learning outcomes. The authors present an experiment of training undergraduate and graduate students in a subject that did not require especial prerequisites (*i.e.* homogeneous starting conditions) and using similar contents, times and activities. The results support the idea that students' 'maturity' is very important in the assimilation of contents. The paper also contains important references to other related studies.

In terms of technological support, the fifth study, entitled 'User-generated content in the digital identification of organisms: the *KeyToNature* approach', by Stefano Martellos, Edwin van Spronsen, Dennis Seijts, Núria Torrecasana Aloy, Peter Schalk and Pier Luigi Nimis, introduces and motivates the importance of collaboratively editing the content of identification keys for species. Using a web-based tool, users can add and modify contents inside the framework of a European funded project. Although there is no

analysis of experimental use of the system by real users, which would clarify the usability of the tools presented in the paper, the described framework provides an update of the project which can be of interest to related researchers in the field.

In a similar line of technology-based learning, the sixth article, entitled ‘The use of feature films to promote entrepreneurship’, by Guillermo Pérez-Bustamante Ilander, is a good repository of films that can be used to improve the teaching of entrepreneurship. By capturing some similarities in teaching managerial skills and entrepreneurship, the paper highlights some pedagogical issues and provides some guidance to instructors of entrepreneurial skills. The study also captures some interesting pointers to external resources adapted to current needs of students and to the technological support that they expect in any course.

The seventh paper, entitled ‘External examination in France and Germany: recognition of informal learning from an institutional economic perspective’, by Silvia Annen and Daniel Schreiber, reinforces the importance of many issues discussed in the previous papers. In fact, the paper focuses on a very important and up-to-date issue, combining live-long informal learning and competence acquisition. The study compares the systems in France and Germany and provides data about how competences can be recognised by external examination. The paper also presents a model that can be used to solve certain asymmetries in the external examination process consisting on signalling and screening.

We are grateful to the *IJIOME* Editors for the opportunity to report and disseminate the research presented at the *IASK Teaching and Learning 2009*, and we hope to see you all in the forthcoming edition of this International Conference.