Editorial

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1 Introduction

In the last decade, enormous efforts have been put into the adoption of Information and Communication Technologies (ICTs) in education. Most of these efforts seem to concentrate on the development and diffusion of learning content, which, through the support of ICTs, are considered to promote more effective learning and to accomplish several collaborative, constructivist pedagogical models and objectives.

On the other hand, the management of education and educational policies on the adoption of ICTs in education are just as critical for the promotion of a new era of education worldwide.

Given the significance of the management of education as a critical enabler of the success of all the technology-enhanced learning initiatives, three significant objectives provide the rationale for the special issue:

1 the need to investigate how ICTs affect the managerial styles in education, enable new management models and enhance the development and support of the educational community

2 the need to provide state-of-the-art approaches and to disseminate high-quality knowledge for the practical implications of ICTs for the management of education

3 the need to exploit new trends in ICTs, such as open source, knowledge management, mobile and wireless applications, semantic web, social software, *etc.*, towards more effective management in education.

The special issue aims to help communicate and disseminate the vision of management of education through specific priorities and actions for educational policies (*e.g.*, lifelong training of managers of education, career planning, formation of educational committees, *etc.*). This is intended to initiate a dialogue between the various stakeholders in the education domain.

In the research agenda of the special issue, we set and invited contributions to the following key priorities:

- nationwide/international projects on the deployment of ICTs for the support of management of education in schools
- new technology-enhanced managerial models for education
- collaborative and constructive approaches to management of education through the involvement of ICTs
- the role of communities of practice for effective management of education
- knowledge networks in the education domain
- competencies management for effective education management
- national/international surveys on characteristics of managers of education
- demonstration of ICTs: best practice, case studies and lessons learned
- roadmaps for government actions
- ICTs for special care groups' education management
- R&D projects on key aspects of management of education.

2 Presentation of articles in the special issue

For the development of the special issue we exploited an Open Call for Papers strategy. Seven articles were finally accepted out of 17 submitted abstracts and 15 full articles.

In this section we provide a short presentation of the selected articles.

Lytras *et al.* (the Guest Editors), in the first paper entitled, 'Information and communication technologies and challenges for the management of education: new managerial perspectives', provide a position for the critical role of ICTs towards a new era of management in education. A knowledge management-based approach is exploited and the main propositions are anchored in a four-level approach: Artefact–Team–Organisation–Network.

Secundo and Passiante, in 'An innovative approach for creating business leaders: evidence from a case study', comment on the challenges of education management as imposed by ICTs. According to their position statement:

> "The 21st century competitive environment is challenging traditional management theories and is requiring business leaders able to meet the complexity of the new challenges. This entails a rethinking of the processes of education management. The aim of this paper is to present an innovative approach aimed at creating business leaders suitable for competing in the competitive landscape of the 21st century. The approach derives from an empirical study of the International Master in 'Business Innovation Leadership' organized by the e-Business Management Section (eBMS) of Scuola Superiore ISUFI – University of Lecce (Italy). The result is the creation of a new profile, the 'Change Manager' and 'Business Engineer', capable of identifying and exploiting the distinctive potential of the new Information and Communication Technologies (ICTs) for reconfiguring traditional business contexts. We refer to this capability as ICT-driven Business Innovation Leadership, an evolution of traditional management education, integrating management studies with technological ones."

Bikfalvi *et al.*, in 'Complementing education with competence development: an ICT-based application', emphasise on competence development and self-evaluation tools.

Nowadays, university policies highlight the importance of complementing teaching activities with competence development in the framework of the European Higher Education. A previous step for this concerns the development of an effective, efficient, practice-oriented, and user-friendly competence evaluation tool. The main objective of this article is to illustrate the use of a competence self-evaluation tool and to explore the implications of such ICT tool for education. They use a web-based tool designed to assess and develop social and personal competences, which is applicable to the learning process. Among others they discuss implications at different levels of the education community: university management, teaching centres and, just as important, students.

Novicevic *et al.*, in 'Administering a university's growth into the virtual domain: how to avoid the optimiser's curse', contribute an excellent article emphasising on the critical role of the educational change in the virtual context.

According to their summary:

> "Organizations must plan change in order to be successful, but strategic planning by universities is challenging because it is often accompanied by the emergence of the 'optimizer's curse.' The optimizer's curse phenomenon occurs as a result of an inaccurate opportunity–threat framing of change by administrators pursuing growth in, and penetration of, the virtual domain. They

> provide a theoretical explanation of this phenomenon, as well as propose a matrix to assess the organization's climate for the planned change. In conclusion they outline a programme that may help prevent the emergence of the optimizer's curse in the educational institution."

Mital, in 'Creating knowledge-based academic community', comments on the adoption of ICTs in management education institutions in India and provides a knowledge management perspective:

> "The adoption of information technology is still at a very nascent stage in management education institutions in India. Education institutions are knowledge-creating and disseminating entities, as they are information processing systems that continuously deal with and disseminate interpretation and learning derived from a dynamically uncertain business environment. The study treats an educational institute as an organization with a mission and a goal and its activities and culture directed towards the effective achievement of these goals. Because knowledge management is an increasingly essential component of innovation and value creation, the study focused on the various knowledge activities of faculty members to understand the type and extent of impact of information systems on those activities and how those activities contribute to value creation and building a knowledge culture in an educational institute."

Sastry, in 'Development of academic information system for effective education management', presents the development of an Academic Information System (AIS) and its deployment for effective education management. The objectives of AIS include providing detailed analysis, summarised information to the academic managers to enable them to take appropriate decisions. The need to develop such decision support systems indigenously, depending on specific institutional requirements is emphasised. Several common aspects in any typical university environment, such as the nature of diversified data items, continuous growth of data, different categories of users, demand for access, user expectations and huge quantities of information, are considered for the design and development process.

3 Key findings – open research agenda

In the rhetoric of this special issue there are several significant conclusions. We will provide them here in brief and a more detailed discussion will be given in the first article of the special issue.

- There is a key requirement to apply a knowledge management approach in the context of management of education (Lytras and Pouloudi, 2006; Sicilia *et al.*, 2006; Dou *et al.*, 2007). Such approach will provide the required links to knowledge-intensive resources and will establish knowledge networks aiming to explore the capacities of the various stakeholders in education.
- There is a need for managers of education to explore competencies management models and personal development methods.
- Management of education must go beyond the typical concerns for content development (Hill, 2007) and human resources management and try to develop holistic models for the integration of all the core strategic components of the education domain exploiting ICTs (Jonassen, 2006; Brusilovsky *et al*. 2006).

- It is more than needed to explore ways for the integration of ICTs in management and practices of education, avoiding the resistance to change from various stakeholders that are reluctant to abandon the rigid models.
- We must develop sensors at the management of education level contributing to realising the challenges from the emerging ICTs, and must develop action programmes for the effective adoption emphasising on the specification and analysis of the various segment target groups.
- It is critical to invest in IT infrastructures and advanced information systems (Porto *et al.*, 2007) that can support different managerial roles and decision making in educational institutions.

Beyond this short list of key findings, a number of open research issues require further research and could be excellent topics for doctoral studies. We provide only an indicative list of possible themes:

- Competence models and ontologies of competencies for management of education: semantic web technologies and ontologies primer
- Collaborative management of education: a social software perspective
- The role of open source software for effective management of education
- Web 2.0 and active participation for the management of education
- Business modelling of management of educational core processes
- Lifelong learning models for the managers of education
- Knowledge networking through context-awareness models
- International partnerships and know-how exploitation
- Collaborative content-authoring models for management of education topics
- Social networks analysis applications in education
- Management of profiles in education based on semantic web techniques
- Provision of web services targeting managerial services for educational institutions
- Technology-enhanced support to evaluation methods.

This special issue was a first attempt to discuss the implications of ICTs for effective and strategic management of education. We do believe that this edition contributes to the domain and provides an excellent context for reflection. In the next year we plan an edited book on the theme of management of education and ICTs by an international publisher.

Education is not an abstract idea. It is knowledge-intensive and human-centric. The challenging role of ICTs' adoption in education must meet the same requirements. ICTs are not panaceas but provide new ways of refocusing on peoples' needs for personalised educational services and continuous improvement and personal development.

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