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21st Century Learning for 21st Century Skills

7th European Conference
on Technology Enhanced Learning, EC-TEL 2012
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Proceedings

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Preface

The European Conferences on Technology Enhanced Learning (EC-TEL) are now established as a main reference point for the state of the art in Technology Enhanced Learning (TEL) research and development, particularly within Europe and also worldwide. The seventh conference took place in Saarbrucken in Germany, and was hosted by CeLTech – Centre for e-Learning Technology (Saarland University/DFKI) – during 18–21 September 2012. This built upon previous conferences held in Palermo, Italy (2011), Barcelona, Spain (2010), Nice, France (2009), Maastricht, The Netherlands (2008), and Crete, Greece (2006 and 2007). EC-TEL 2012 provided a unique opportunity for researchers, practitioners, and policy makers to address current challenges and advances in the field. This year the conference addressed the pressing challenge facing TEL and education more widely, namely how to support and promote *21st century learning for the 21st century skills.* This theme is a key priority within the European Union and constituent countries and also worldwide, as research needs to address crucial contemporary questions such as:

- How can schools prepare young people for the technology-rich workplace of the future?
- How can we use technology to promote informal and independent learning outside traditional educational settings?
- How can we use next generation social and mobile technologies to promote informal and responsive learning?
- How does technology transform education?

Our programme tackled the theme and key questions comprehensively through its related activities, namely: 4 world leading keynote speakers; 38 high-quality long and short scientific papers; 9 pre-conference workshops and 2 tutorials; an industrial track; a doctorial consortium; and interactive demonstrations and posters. 'Interactivity' was a key feature of the conference, which encouraged the provision of demonstrations linked to scientific articles, continually running video sequences of demonstrations throughout the conference venue and holding a competitive 'TEL Shootout' where delegates voted on the best demonstration.

The four keynote speakers provided exciting and complementary perspectives on the conference theme and sub-themes. Mary Lou Maher (Design Lab, University of Maryland) emphasized the role and importance of designing for diversity and creativity during her talk about *Technology Enhanced Innovation and Learning: Design Principles for Environments that Mediate and Encourage Diversity and Creativity.* Richard Noss (Director, London Knowledge Lab and UK Teaching and Learning Research Programme) provided an insightful examination of the precepts and implications of the conference theme in his address *21st Century Learning for 21st Century Skills: What Does It Mean, and How Do*

We Do It? Wolfgang Wahlster (Director, German Research Centre for Artificial Intelligence) provided an innovative perspective on the essential links between situated learning and industry requirements and practices in his talk *Situated Learning and Assistance Technologies for Industry 4.0.* A further international perspective was provided by Prof. Ruimin Shen (Shanghai Jiao Tong University) who gave a keynote on *Technology Enhanced Learning in China: The example of the SJTU E-Learning Lab.*

In addition, in what has become a tradition for EC-TEL conferences, the delegates were addressed by Marco Marsella, Deputy Head of the Unit for eContent and Safer Internet from the European Commission, so that ongoing and future research and development could be clearly articulated with the priorities for research funding within Europe. A key overarching objective of EC-TEL 2012 was to examine and improve the transitions between research, practice and industry. This was reflected through the co-sponsors of the conference, which included the European Association of Technology Enhanced Learning (EATEL), TELspain, eMadrid, Springer and IMC information multimedia communication AG.

This year saw 130 submissions from 35 countries for consideration as full papers at EC-TEL 2012. After intense scrutiny in the form of some 300 reviews, the programme committee selected just 26 papers, or 20% of those submitted. Also selected for inclusion in the proceedings were 12 short papers; 16 papers from demonstration sessions and 11 poster papers.

Specifically, the conference programme was formed through the themes: learning analytics and retrieval; academic learning and context; personalized and adaptive learning; learning environments; organizational and workplace learning; serious and educational games; collaborative learning and semantic means; and, ict and learning. Collectively, these themes embraced a key feature of the conference and EC-TEL research and practice. This is that TEL research and development needs to embrace the increasing interconnectedness of learning technologies and the contextualized formal and informal practices for learning and education.

Finally, in introducing these proceedings to you we hope that the high-quality, rich and varied articles that are included take TEL research and thinking forward in ways that address the changing and technology-rich landscape in which we think, learn and work in the 21st century.

September 2012

Andrew Ravenscroft
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