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Trends in Immersive Education Research

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The 21st century society poses great demands on the citizens due to rapid development and ever-changing situations. Consequently, it is expected that members of the society keep pace with these mutable situations forcing them to continuously adapt their skills and expertise. Modern instructional design, learning processes and appropriate learning environments must support the development of the aforementioned skills and expertise. Educational approaches have changed dramatically over time from less formal schooling in the agricultural society, to remedial repetitive learning in the industrialization age, to learning of competences with an understanding in today's knowledge society [Ibáñez, Crespo, Delgado Kloos 2010]. Based on that, different modern educational strategies have been developed, which include aspects such as self-directed learning, collaborative learning, experiential-based learning, and active participation. Educational approaches have also been influenced by technology, but have also increasingly applied technology over the last decades, such as motion pictures, radio, television, computers, and other emerging information and communication technologies [Chang and Gütl 2010].

Recent hype surrounding the virtual world platform "Second Life" has generated significant interest in the education community. Although virtual worlds have been an active research topic for a long time, technology was not ready for complex application scenarios until recently. New interesting and powerful platforms and tools, such as Second Life, Active Worlds, Multiverse, Open Croquet, OpenSim, realXtend and OpenWonderland, have emerged and become applicable to complement or even replace other knowledge transfer and learning settings [Ibáñez et al 2010]. Modern virtual worlds are seen from an optimistic viewpoint as a disruptive and transformative technology. However, it still remains unclear to some extent where the real benefits and limitations of using virtual worlds as knowledge transfer and learning environments are, when compared to more traditional methods [Gütl 2011].

In order to avoid the same pitfalls of past e-learning solutions by just applying traditional learning approaches to a new technology, this special issue intends to give insights in current research and results. 7 selected and extended papers from the European Immersive Education Summit 2011 and 2 papers from the broader research community have been submitted. After a rigorous evaluation process, 4 of the 9 manuscripts have been accepted respectively. We want to grateful acknowledge the members of the editorial board of our special issue and the J.UCS team for their support in finally publishing high quality papers on immersive education research.

David Griol, José Manuel Molina, and Araceli Sanchis de Miguel from Spain cover the topic of advanced educational resources interaction, or more specifically how to create learning environments within Second Life or OpenSimulator combining the Moodle learning management system, embodied conversational metabots, and programmable 3D objects. In a collaborative research between Switzerland and Israel, Nathan Labhart, Béatrice S. Hasler, Andy Zbinden, and Andreas Schmeil report on a novel three-dimensional collaborative virtual environment for international student teamwork learning artificial intelligence topics.

Focusing on the trendy topic of assessment in immersive education, the authors María Blanca Ibáñez, José Jesús García Rueda, Diego Morillo, and Carlos Delgado Kloos from Spain introduce their WorldOfQuestions Authoring Environment for the Open Wonderland platform. Finally, Pilar Sancho, Javier Torrente, and Baltasar Fernández-Manjón report on the experimentation and findings of applying virtual learning environments teaching software skills. Enjoy Reading!

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Guest editors

References

[Chang and Gütl 2010] Chang, V. and Gütl, C: Generation Y Learning in the 21st Century: Integration of Virtual Worlds and Cloud Computing Services. In Z. Abas et al. (Eds.), Proceedings of Global Learn Asia Pacific 2010 (pp. 1888-1897). AACE, Penang, Malaysia, May 17 - 20, 2010.

[Gütl 2011] Gütl, C.: The Support of Virtual 3D Worlds for enhancing Collaboration in Learning Settings. In Francesca Pozzi and Donatella Persico (Eds.) Techniques for Fostering Collaboration in Online Learning Communities: Theoretical and Practical Perspectives, IGI Global, 2011, 278-299.

[Ibáñez, Crespo, Delgado Kloos 2010] María Blanca Ibáñez, Raquel M. Crespo, Carlos Delgado Kloos: Assessment of Knowledge and Competencies in 3D Virtual Worlds: A Proposal. In KCKS 2010: Key Competencies in the Knowledge Society, World Computer Congress, Brisbane, Australia, 20-23 Sept. 2010.

[Ibáñez et al 2010] María Blanca Ibáñez, José Jesús García, Sergio Galán, David Maroto, Diego Morillo, Carlos Delgado Kloos: Multi-User 3D Virtual Environment for Spanish Learning: A Wonderland Experience. In ICALT 2010: IEEE International Conference on Advanced Learning Technologies, 5-7 July 2010, Sousse, Tunisia