Over the last decade, serious games have become accepted educational tools and the idea of using the great strength of modern computer games for educational purposes experienced a significant boost. From an educational perspective, computer games offer a promising approach to make learning more engaging, satisfying, and probably more effective.

However, playing experience and learning motivation are fragile assets; to be enjoyable, a computer game must be balanced well, meaning the game must match an individual player’s playing preferences, playing styles, and playing capabilities in a suitable way in order to too one-sided gameplay. An appropriate adaptation is of crucial importance in order to reach and maintain fun and enjoyment on the one hand and effective, successful learning on the other hand (a review can be found in Kickmeier-Rust, Mattheiss, Steiner, and Albert, 2011).

The starting point of an educationally suitable adaptation and good game-balancing is to equip the game with and understanding of the learning domain, aspects and characteristics of the player and, in particular, an understanding about what is going on in the game, for example, motivational states or learning performance. Thus, seamless user performance assessment is a major research topic. It is not a trivial to assess and interpret activity data coming from the game in an unobtrusive manner in order not to harm the gaming experience and perhaps ‘flow’ and requires intelligent technologies.

A recent trend in educational technology is educational data mining (EDM) and learning analytics (LA). The fundamental idea of learning analytics is not new, in essence, the aim is using as much information about learners as possible to understand the meaning of the data in terms of the learners’ strengths, abilities, knowledge, weakness, learning progress, attitudes, and social networks with the final goal of providing the best and most appropriate personalized support.

At this point educational adaptation, game balancing, seamless assessment and EDM/LA meet. New educational technologies leverage the potential of serious games and increase their educational depth.

The workshop is organized around and out of 2 European projects, the GALA Network of Excellence (www.galanoe.eu) and the ICT project LEA’s BOX (www.leas-box.eu). The goal of the workshop is bringing together different research disciplines, technological approaches as well as practitioners in order to discuss this broad conceptual area from a broad range of perspective.

The one day workshop will be composed of three major parts: (i) a presentation of various technical, conceptual, and theoretical approaches, (ii) a session for demonstrations and hand-on activities, and (iii) a wrap-up of the experiences in the demos and a general discussion about the needs, existing solutions, and the directions for future research. The focus on melding educational technology and analytics / data mining perfectly suits the conference theme where EC-TEL and iKnow are linked.
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