eGames and adaptive eLearning:  
A practical approach

The aim of this symposium of *Simulation & Gaming* is to address practical approaches and experiences in the development and application of educational electronic games and gamelike simulations (eGames) in adaptive eLearning and bLearning (blended learning) processes.

eGames seem to capture the attention of students far more effectively than any other form of educational content. However, their educational potential transcends the simplistic notion that we should use them just because students pay more attention to games than to classes. Apart from being fun, games provide immersion in a reactive environment, promote the development of problem-solving skills, and propose a narrative flow that yields a feeling of progression; everything happens in an environment that the students wish to explore by their own intrinsic motivation. Games also have focused and structured goals, well-defined rules, and challenging and clear tasks, and they let participants try new things without adverse consequences. Another key factor is that games provide outcomes and feedback in real time. This feedback can help users in the next actions to be taken and to perceive their activities and decisions as part of the flow of the games. In addition, games can support several pedagogical approaches: learning by doing, learning from mistakes, goal-oriented learning, role-playing, collaborative learning, and constructivist learning.

The implementation of these game-based approaches can be deployed in personalized eLearning and bLearning processes, supporting the appropriate features of games that match better with learning objectives. There is growing interest among teachers in using games as part of their adaptive lesson plans. However, this use is often isolated from the rest of the learning experience, leading to a disconnection between educational settings and games. A standardized, interoperable approach to the sharing of such game-based lesson plans would allow teachers and educational technologists to compare and contrast eGame-based experiences, allowing best practices and lessons learned to emerge. Although games can be used as “add-ons” in educational contexts, greater benefits can be attained by integrating games more tightly into the educational process.

This special issue is an attempt to present several perspectives and efforts in fields of game-based learning and adaptive eLearning. The selection of the contributions
has taken into account practical applications and well-founded pedagogical proposes that may open the gate for the future integration of models.

Colin B. Price, in his article “The usability of a commercial game physics engine to develop physics educational materials: An investigation,” addresses the topic of whether current commercial computer games can be used to develop educational material for high school and university physics education. This topic is addressed not only from the technical point of view but also from a consideration of the pedagogical implications and what teachers’ role should be in this process.

Rob J. Nadolski et al., in their article “EMERGO: A methodology and toolkit for developing serious games in higher education,” present a methodology for guiding the production and delivery of scenario-based serious games. This article has an instructional design perspective and focuses on the use of this approach by case developers and the use of its resulting cases by students.

Thibault Carron, Jean-Charles Marty, and Jean-Mathias Heraud, in their article “Teaching with game-based learning management systems: Exploring a pedagogical dungeon,” propose the use of a dungeon metaphor to represent a learning activity and promote collaboration among students. Teachers’ role is also supported by including tools for monitoring the activities performed by students.

Martin A. Lynch and Richard J. Tunstall, in their article “When worlds collide: Developing game-design partnerships in universities,” present the problems that can emerge when creating computer-based simulations with a multidisciplinary team of developers and educators. The cultural clash between the two worlds is a considerable issue, and the aim is to provide a conceptual framework for ensuring quality in creative education projects that can be applied to the development of eLearning and adaptive game projects.

Carina S. González and Francisco Blanco, in their article “Integrating an educational 3D game in Moodle,” present how to integrate a 3D multiplayer educational game developed using the Neverwinter Nights game engine with the Moodle learning management system. This integration enhances the capabilities offered by the virtual learning environment by adding new interaction modalities.

Daniel Burgos et al., in their article “Building adaptive game-based learning resources: The integration of IMS Learning Design and <e-Adventure>,” address the integration of conversational games and the personalized learning experience of an IMS Learning Design unit of learning. The games are created with a preexisting educational game platform (<e-Adventure>) and then integrated with the learning management system through a communication link that enables mutual influence of the adaptive learning experience.

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