

PREMIER REFERENCE SOURCE

Games-Based Learning Advancements for Multi-Sensory Human Computer Interfaces

Techniques and Effective Practices



Thomas Connolly, Mark Stansfield, & Liz Boyle

Games-Based Learning Advancements for Multi-Sensory Human Computer Interfaces

Techniques and Effective Practices

Games-based learning focuses on the exploration of high-quality computer games and associated software tools for education and training.

Games-Based Learning Advancements for Multi-Sensory Human Computer Interfaces: Techniques and Effective Practices disseminates knowledge on the theory and practice of games-based learning, promoting the development and adoption of best practices. Through a combination of theoretical chapters as well as practical case studies, readers will benefit from expert knowledge and learn from the experiences of both researchers and practitioners from across the globe.

Topics Covered:

- Content integration in games-based learning
- Digital board games
- Games-based learning in the classroom
- Games-based learning evaluation framework
- Games-based learning systems
- Narrative game worlds
- Pedagogy and technology
- Profiling users in educational games
- Role-playing in learning
- Virtual environments for learning



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Colin Price, University of Worcester, UK

three stakeholders (game designer, instructional designer/learning psychologist and subject matter expert), how to manage preconceptions and balance their priorities. The chapter provides advice on how to facilitate this process, capture the correct requirements and create a design that meets and exceeds the expectations of all the stakeholders involved, including the client/customer and the end user

Chapter VII

The DODDEL Model: A Flexible Document-Oriented Model for the Design of Serious Games 98

Mark McMahon, Edith Cowan University, Australia

In Chapter VII McMahon proposes a document-oriented instructional design model to inform the development of games-based learning. The author suggests that the model can form a base for prescribing and managing activities within an industry context but also as a means to teach the instructional design process for serious games within an HE setting. The model defines increasingly granular stages leading to final production documentation for software development. A case study of the initial implementation of the model is discussed in order to contextualise it and provide a basis for future enhancement.

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Games-Based Learning, Destination Feedback and Adaptation: A Case Study of an Educational Planning Simulation..... 119

Daniel Burgos, ATOS Origin Research & Innovation, Spain

Christof van Nimwegen, CUO - IBBT / K.U.Leuven, Belgium

In this chapter, Burgos and van Nimwegen argue that games-based learning applications are good environments for improving the learning experience and a key component of the application if the provision of feedback to support decision making and to reinforce the learning process. However, the authors point out that too much feedback can make the learner too dependant on external advice when taking the next action, resulting in a weaker learning strategy and a lower performance. By way of example, a case study is presented of an educational planning task simulation with a control group that did not receive destination feedback and an experimental group that did receive destination feedback. An analysis concludes that in this context too much assistance can be counterproductive.

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Profiling Users in Educational Games..... 131

Patrick Felicia, University College of Cork, Ireland

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For some time, users' emotions and behaviours have been considered to obstruct rather than to help the cognitive process. Even if it is now recognized that learners' personalities and learning styles influence greatly their cognitive process, very few systems have managed to profile users and adapt the educational content accordingly. Furthermore, since the introduction of formal education, it has been argued that learning has lost its playful and emotional aspect, whereby information was transmitted through story telling and play. On the other hand, computer games have become a very popular medium and provide a rich sensory and emotional environment in which players can experience a state of flow and are continue playing for an extended period of time. In this chapter Felicia and Pitt discuss how computer games can

Chapter VIII

Games-Based Learning, Destination Feedback and Adaptation: A Case Study of an Educational Planning Simulation

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ABSTRACT

Serious games are suitable for learning. They are a good environment for improving the learning experience. As a key part of this setting, feedback becomes a useful support for decision making and can reinforce the learning process in order to achieve certain objectives. Destination feedback allows users to draw on strategies and improve skills. However, too much feedback can make the learner too dependant on external advice when taking the next action, resulting in a weaker strategy and a lower performance. In this chapter the authors introduce a conceptual approach to feedback in E-Learning with serious games; how useful or harmful it can be in a learning process. They describe a case study carried out with a simulation of an educational planning task. The authors studied the performance of 43 learners who had, or did not have, visual destination feedback in a problem solving task. They conclude that in this context, too much assistance can be counterproductive.

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