

AROUND AN INSPIRING VIRTUAL LEARNING WORLD IN EIGHTY DAYS



Educational Computer Games - The idea is simple:

- Utilizing the rich and appealing possibilities of computer games for educational purposes
- Utilizing – at least parts – of the time people spend on playing computer games for educational purposes
- Playing is THE most natural form of learning

80Days is a multidisciplinary, international project that ran from April 2008 to September 2010. The project strived for the (re-)evolution of educational technology based on computer games. Inspired by Jules Verne's novel "Around the world in eighty days", we developed technology and underlying theory that enables learners to immerse into a flow of gaming and learning.

The project's major achievements:

- Enabling a non-invasive in-game assessment of knowledge, learning progress as well as motivational states
- Developing a framework for a smart psycho-pedagogical personalization on the micro level to enable a targeted individual support.
- Merging approaches to adaptive education with methods of interactive storytelling to enable educationally effective and meaningful paths to the game.
- Establishing a methodology to reduce the development costs by integrating existing external resources and by referring to a common pool of game assets
- Developing a framework for evaluating educational computer games at design and at run time
- Developing an appealing prototype game



This research project was supported by the European Commission under the seventh framework programme in the ICT research priority, contract number 215918.



Contact: michael.kickmeier@uni-graz.at



In the 80Days' prototype game „Lizard“ the player is a teenager who is hijacked by an alien named Feon. Feon pretends to be a intergalactic travel author and needs help from a human – as the most intelligent life-form on this planet – to write his travel guide about the Earth. . The boy makes a deal with Feon and agrees to help him. As a return for that Feon lets the boy fly his UFO. Together they discover Earth and compile geographic knowledge about the planet during their expeditions with the UFO.



80Days merged multiple competencies and multiple disciplines to accomplish its mission; each partner was a unique gearwheel in an effective clockwork of coordination, research, development, evaluation, and dissemination activities. The project consortium included leading experts in:

- Game design and rich media production
- Game development and 3D modelling
- Digital storytelling
- Adaptive educational technology
- Cognitive science and learning psychology
- Experimental research
- Software evaluation, HCI, and usability research
- Didactics, curriculum analysis, and content provision



Selected Publications

Göbel, S., Mehm, F., Radke, S., & Steinmetz, R. (2009). 80Days: Adaptive Digital Storytelling for Digital Educational Games. In Proceedings of the 2nd International Workshop on Story-Telling and Educational Games (STEG'09), August 21, 2009, Aachen, Germany.

Kickmeier-Rust, M. D., Hockemeyer, C., Albert, D., & Augustin, T. (2008). Micro adaptive, non-invasive assessment in educational games. In M. Eisenberg, Kinshuk, M. Chang, & R. McGreal (Eds.), Proceedings of the second IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning, November 17-19, 2008, Banff, Canada.

Koidl, K, Mehm, F., Hampson, C., Conlan, O. and Goebel, S. (2010). Dynamically adjusting Digital Educational Games towards Learning Objectives. In Proceedings of the 4th European Conference on Games based Learning (ECGBL), October 21-22, 2010, Copenhagen, Denmark.

Law, E. L.-C., Gamble, T., Schwarz, D., Kickmeier-Rust, M. D., & Holzinger, A. (2009). A mixed-method approach on digital educational games for K12: Gender, attitudes and performance. In A. Holzinger (Ed.), HCI and Usability for Education and Work. Proceedings of the 4th Symposium of the Workgroup Human-Computer Interaction and Usability Engineering of the Austrian Computer Society, USAB 2008. Lecture Notes in Computer Science (5298, pp. 19-30). Berlin: Springer

Oleggini, L., Nova, S., Orvieto, I., & Hurni, L. (2010). Smooth Transition Between 2D and 3D Visualization Using Computer Game Technology. In Proceedings of the 18th conference of the Cartography and Geographic Information Society (CaGIS), AutoCarto 2010, November 15-18, 2010, Orlando, FL.

Steiner, C. M., Kickmeier-Rust, M. D., & Albert, D. (2009). Little big difference: Gender aspects and gender-based adaptation in educational games. Proceedings of the 4th International Conference on E-Learning and Games (Edutainment 2009), August 9-11, 2009, Banff, Canada. Lecture Notes in Computer Science (5670, pp. 150-161). Berlin: Springer.

