

Educational visualizations in 3D Collaborative Virtual Environments

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ABSTRACT

Cooperation among the actors involved in the learning process has a key role. Different types of cooperative technologies can be used to support this process. In this lecture we focus on one of such technologies, 3D Collaborative Virtual Environments (CVEs). There are a number of reasons for choosing such an environment. 3D visualization is a powerful tool for supporting understanding of complex concepts and is widely used in educational context. There is also evidence that 3D graphics can in some cases be beneficial for memorization and information retrieval. Due to the increasing possibilities of multimedia and VR technology, 3D CVEs are to a greater degree used to demonstrate concepts that are difficult to represent efficiently enough in reality. 3D CVEs provide a constructivist learning environment where learners can collaboratively construct their understanding by exploring, building and sharing their experiences with peers. This lecture illustrates how 3D CVEs can be used as a tool for a wide range of educational activities, in particular for creative collaborative elaboration and visualization of educational content. The following topics will be discussed:

- Supporting collaborative creative processes in different educational situations
- 3D visualizations of educational content and the associated pedagogical value; types of content suitable for 3D visualization
- Virtual Campus as a framework for educational visualizations
- User friendliness, integration with existing practices and other tools, effort vs. gain
- Social aspects
- Future directions

Bio:

Ekaterina Prasolova-Førland is an associate professor at the Program for learning with ICT, Norwegian University of Science and Technology (NTNU). Her research interests include educational and social aspects of 3D Collaborative Virtual Environments and augmented environments as well as virtual universities, mobile learning and educational games. She is author and co-author of ca 50 publications on the topic. She is currently involved in two EU-financed projects focusing on educational games in 3D virtual worlds.