Animated pedagogical agents for education training and edutainment

W. Lewis Johnson
USC / Information Sciences Institute
4676 Admiralty Way
Marina del Rey
CA 90292 USA
johnson@isi.edu
Tel: +1 310 448 8210
Fax: +1 310 822 0751

Abstract

Animated pedagogical agents are animated characters that can interact with learners in computer-based environments, in order to stimulate and encourage learning. They improve the effectiveness of education and training applications, and can also be employed in many other interactive applications to assist novice users. They draw on techniques from interactive entertainment, making them well suited for entertainment applications with an educational purpose ("edutainment"). This tutorial provides an introduction to animated pedagogical agents, their use in education, training, and entertainment applications, and methods and technologies used to develop them. The important capabilities of APA's will be described and illustrated in the context of example pedagogical agent systems. Common methods and architectures for building and controlling the behavior of such agents will be described and contrasted. Empirical evaluations of effectiveness of APA's will also be presented. Particular emphasis will be placed on assessing the current state of the art in APA research, highlighting recent accomplishments and identifying areas of current and future research.