3-D virtual-learning platforms

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The touristic "Plaza de Cibeles" in Madrid was designed in 3-D. Experts are exploring ways to teach through e-learning. Credit: UC3M

A 3D virtual world such as SecondLife, cannot in fact be considered a teaching platform, although it provides a good foundation for one. To do so, it must include some elements such as a training program, with a sequence of activities for students to acquire knowledge, as well as a methodology to evaluate previously defined learning results. "When all those elements exist, we can say that we have gone from an abstract 3D world to a learning platform", explained the Full Professor in Telematics Engineering, Carlos Delgado Kloos, who heads this UC3M (Spain) line of research.

The advantages of using this type of application for teaching have been

investigated by these researchers who have carried out an experiment regarding learning Spanish as a second language. The researchers have started with the assumption that the best way to learn a language is to live in a country where it is spoken. "The 3D learning environments are not only appropriate for transmission of knowledge, but also for teaching competencies, and if they also include Augmented Reality elements for the manipulation of a three-dimensional world with real physical elements, even better results are obtained, as the barrier of a fictional world immersion is reduced", Professor Delgado Kloos added.

A richer academic experience

The researchers' target is to successfully develop a teaching product which offers a total educative experience, improving on the classic textbook format. If this is complemented by multimedia elements, it is even better;
however, if it goes one step further, and provides 3D environments which can be explored by the student, then you have more pedagogical resources. Along these same lines, student pilots have long been using flight simulators where a real environment is reproduced to learn how to handle a plane. A 3D world is an environment which is more similar to the real world than one created by a textbook. As a result, it can transmit many more elements other than purely cognitive ones, so that skills and competencies can be acquired which a textbook alone cannot offer, according to the researchers; in a nutshell, a much richer educational experience.

We still have a bit of a way to go until we are able to employ virtual 3D worlds as learning platforms. "This is a relatively virgin area which has to demonstrate its relevance, and which will grow as IT hardware capacity grows, and as new software interfaces are defined and new person-machine interface devices become more generalized", Delgado Kloos, pointed out. Professor Delgado Kloos also heads the UC3M

Telematics Applications and Services Group (GAST) which carries out work in the areas of e-learning, ubiquitous computing, intelligent environments, distributed real- time systems and web technologies.

According to the researchers, there is a need to define standards and good practices for the implementation of teaching environments in 3D virtual platforms. The eMadrid network project is working in these as well as in many other areas. This is a project which is funded by the Community of Madrid, and headed by UC3M, and in which experts from other public universities in the region participate, such as the Autonoma, Complutense, Politécnica, Rey Juan Carlos and UNED (The National Distance Education University of Spain). This network's objective is to achieve the rationalization of e-learning research efforts, incorporating into the group education and training experts and technicians through the TIC, whose participation allows the technology capacity of the different teams to be topped off and important synergies to be achieved. It also strives to be a showcase for the most important elearning developments with the aim of energizing this field. Lastly, special mention must be made of technology transfer to companies and the synergy between researchers and the needs of the very core of production.

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