eMadrid Seminar on
"Instructional design in multidimensional environments"
Universidad Carlos III de Madrid, UC3M

Friday, December 10th, 2010

Organizers: eMadrid network

On Friday, December 10th, 2010, a seminar organized by the eMadrid network on **"Instructional design in multidimensional environments"** will be held at the University Carlos III of Madrid.
eMadrid is a R&D program involving research groups of several Universities of Madrid. It is funded by the Region of Madrid and promotes research and development of Technology-Enhanced Learning. Coordinated by the University Carlos III of Madrid, eMadrid includes Autónoma University, Complutense University, Politécnica University, King Juan Carlos University of Madrid and the Distance Learning University UNED as full members and involves other universities, companies and related entities.

The schedule of talks is as follows:

15:00–15:45

Juan Carlos Vidal Aguiar (USC): "three-dimensional worlds: the integration of IMS LD in virtual worlds"

15:45–16:30

David Maroto (UC3M): "CopperCore integration with Open Wonderland for the execution of learning units in virtual worlds "

16:30–17:15

Davinia Hernández-Leo (UPF): "New interactions and technology-enhanced evaluation activities based on the use of web maps integrated with technology educational standards"

Where?

Universidad Carlos III de Madrid
Leganés campus
Aula de Grados. Padre Soler Building
Av. de la Universidad 30
28911 Leganés, Madrid.
http://bit.ly/9anfHM

How to get there?

- **By subway:** "Leganés Central" line 12 of "Metrosur"
- **By train:** "Leganés" C-5 line(from Atocha towardsHumanes)
- **By car:** http://bit.ly/cT7iGm

UNION EUROPEA
FONDO SOCIAL EUROPEO

La Suma de Todos
CONSEJERÍA DE EDUCACIÓN
Comunidad de Madrid
www.madrid.org

Summary of talks

Three-dimensional worlds: IMS LD integration in virtual worlds

3D Educational environments are virtual worlds designed to encourage interaction and communication between participants of a course, drawing on immersion in virtual worlds of students and teachers. In recent years we have developed a number of 3D learning environments which aim to simulate real-world environments (Campus, classrooms, etc..) in which teaching activities take place. In these environments, however, did not avail the benefits of virtual education in terms of management and adaptation of learning activities to the students and teachers' behavior and evolution.
This talk presents a methodology and a proposal integration of IMS LD in 3D learning environments that are supported by Second Life and Opensim platforms. Specifically, in this integration a set of scripts have been identified and developed, which allow you to collect the actions carried out by avatars (students and teachers) in the 3D learning environment, and has designed and deployed service-oriented architecture that outsources the functions of an IMS LD engine managing the activities carried out by the avatars.

CopperCore integration with Open Wonderland for the execution of learning units in virtual worlds

Immersive spaces, and in particular the three-dimensional virtual worlds, are increasingly used in the learning process of students, mainly for skills development and collaborative learning. These virtual worlds make the learning process more attractive, mainly due to its rich graphical interface and sense of "game" that they give to the educational process.

But despite these benefits, there is a very important consideration that has not been addressed adequately in these environments yet: the learning flow. It is common to have very rich and attractive environments, but where there is not a sequence of activities defined to serve for a specific learning objective. In this talk we will present the work being carried out at the Universidad Carlos III de Madrid to integrate a runtime-based learning units in IMS-LD (CopperCore) with Open Wonderland virtual world, so three-dimensional stage introduced to the students changes and adapts in depending on the activity being conducted at every moment.

New interactions and technology-enhanced evaluation activities based on the use of web maps integrated with technology educational standards

Multiple educational disciplines often require skills and knowledge aspects related to geographic maps. Drawing frontiers and locating buildings obtaining an automatic score, answering questions on fauna and flora aspects, or checking if someone knows how to reason on social and economical issues considering a certain type of neighborhood urbanism following either a virtual or a real path, are evaluation activities that can be carried out thanks to technology. In this presentation it will be explained how web maps (such as Google Maps) have been integrated with an interpreter of IMS Question and Test Interoperability (QTI v2.1) standard so that: (1) it is possible to formulate questions that require interactions directly on maps (eg, place markers in a certain order on the map, draw the path shortest distance between two places, etc.), (2) questions can be used with existing interactions in QTI and displayed in specific coordinates on a web map (e.g. a Multiple Choice type question is geolocated in a natural park for students to choose what kind of tree that prevails in the area), and (3) QTI geolocated questions can be obtained automatically in mobile devices when the student is in a specific location (e.g., neighborhood areas that reflect their socio-economic characteristics). In three cases, and through the use of QTI, you can get ratings and feedback instanly. It also provides the integration of these evaluation activities within broader learning processes computationally represented with IMS Learning Design (LD), as the scores on the QTI questions can be used as properties that affect conditional or adaptative learning flow aspects in IMS LD.

This work is being developed as part of the doctoral thesis of Patricia Santos, co-directed by Davina Hernandez-Leo and Josep Blat, in the context of the Learn3 project (TIN2008-05,163).

Biographies of speakers

Juan Carlos Vidal Aguiar (USC)

Juan Carlos Aguiar Vidal is professor in the Department of Electronics and Computer Science, University of Santiago de Compostela and member of Intelligent Systems group. He completed his studies in Computer Science at the University of A Coruña in 2000, worked for several years in private companies (Union Fenosa and Soluziona), during which he participated in the design and implementation of university portal Universia, and obtained his Ph.D. from the University of Santiago de Compostela in 2010. Juan Carlos has written over 30 journal and conference articles as well as book chapters in the field of Artificial Intelligence, especially in the business process modeling and the use of soft computing techniques applied to different fields such as industry, tourism or education. In these areas has received awards for best paper in the 2006 International Symposium on Evolving Fuzzy Systems and the 8th International Conference on Hybrid Intelligent Systems. His research interests include semantic modeling of jobs and services flow, the use of Artificial Intelligence techniques for business intelligence, development of service-oriented architecture to solve integration problems between software components. A good part of this research has been focused on Education domain, specifically in modeling and formalizing the orchestration of learning through Workflow, and its integration into virtual worlds.

David Maroto (UC3M)

David Maroto Paredes is a Telecommunications Engineer by Universidad Carlos III de Madrid (2008). Currently working in the Telematics Services and Application Group of this University as a member of GRADIENT laboratory, where he develops his research in the area of new technologies applied to education.

His interests focus on use of 3D virtual worlds and immersive spaces as tools for improving the learning process.

Davinia Hernández-Leo (UPF)

Davinia Hernández-Leo is a professor in the Department of Technology Information and Communication of the Universitat Pompeu Fabra of Barcelona, coordinator of the educational technology research line of the Interactive Technologies Group (ITG) and director of the Quality Unit and Teaching Innovation of the Polytechnic School.

Davinia was previously (2003-2007) a member of multidisciplinary group GSIC/EMIC and professor in the Department of Signal Theory, Communications and Telematics Engineering of the University of Valladolid, where he completed his studies in Engineering and PhD (European mention) in Telecommunications in 2003 and 2007, respectively. She conducted a research visit in 2006 at the Open University of the Netherlands (OUNL).

Davinia has written over 45 journal articles, conference and book chapters in educational technologies field, she also is a reviewer and committee member of conference programs and magazines in this area. She has several awards, such as the 2006-2007 European CSCL Award for Excellence in the field of CSCL Technology and best article awards in the International Conference in Advanced Learning Technologies 2004, on Computer-assisted Assessment Conference 2010. His research interests include educational technology standards, computer-assisted collaborative learning, languages and visual design for the technology-enhanced educational modeling, and the evaluation and orchestration of educational situations support.