The Technology in New Learning Environments

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ABSTRACT  Into the Information Society the ICT (Information and Communications Technology) is the basic element in all fields of activity. In terms of education, the aim of technology is to build skills and develop competencies in computer use, requirement expressed in European legislation. The virtual learning environments are the subject of extensive researches, considering that are developing new technologies and the instructional design is still a deficient element in achieving effective training.

KEY WORDS  VLE, PLE, Mash-up, ICT, Collaborative learning

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1. Introduction

Virtual learning environments and collaborative learning

The Virtual Learning Environment (VLE) can be defined as a set of tools for teaching and learning, designed to extend the learning experience using ICT tools.

The main components of a VLE system are: the software for learning resources, online assistance, synchronous and asynchronous communication (e-mail, thematic discussions, chat, blogs), links to external resources and the hardware form: application servers, content servers, Internet, the network equipment also.

The users into a virtual learning environment are: students as beneficiaries of learning and teachers, learning content creators and evaluators of student’s progress. Persons who are administrators VLE whole system.

The best known are the commercial learning environments, including: Blackboard, WebCT, AEL, Lotus LearningSpace but there’s open source VLE.

In education have always been concerns for creating models by which the learning environment to be personalized. Learning Management Systems- LMS, Content Management System- CMS, Learning Content Management System- LCMS was improved by adding additional features, which explains the need to create a personalized learning environment based on a system that performs management of learning in the digital space. From this point of view there is a rapprochement between the notions of VLE and LMS or LCMS.

On the other hand, these features are also found in support systems of learning (LSS-Learning Support Systems), managed learning environments (MLE- Managed Learning Environment) that extend in e-learning platform.
Most of virtual learning environments use SCORM (Shareable Content Object Reference Model) as standard, but to share the content, the standards used are defined by the IMS Global Consortium.

Also, many VLEs are placed on a Web server. In a typical VLE there are one or more programs or languages, which give the user (teacher-student) interface, and it interacts with a database. For example, a VLE can use language PHP with a MySQL database (Figure 1).

![Diagram of Communication into a virtual learning environment](source: www3.uji.es)

**Figure 1. Communication into a virtual learning environment**

In terms of learning, the VLE is an important medium for collaborative learning, which enables acquiring new knowledge and cooperation through forms, e-mails, sharing and wiki applications.

### 2. Personal Learning Environments

Given that learning is student-centered and its needs, achieving this strategy requires developing a system to allow its management and control over learning process, which led to the idea of personal learning environment (PLE- Personal Learning Environments).

According to Mark van Harmelen the personal learning environment must provide users (students) the opportunity to manage content and learning process, while giving them the ability to communicate and collaborate with others.
Also in literature there are other definitions of personal learning environment (PLE) related to access and use digital resources for learning, personal space adapted to the user.

PLE is considered by Graham Attwell as a concept that provides easy access to services, applications and functionalities. This tool is free and PLE provides the possibility of creating learning communities by allowing each user to explore course content according to its needs and interact with other users, members of the learning community.

A PLE may be composed of one or more subsystems: it can be a desktop application, or may be composed of one or more web-based services.

The important concepts in a PLE include the integration of formal with informal social networks and using network protocols (Peer-to-Peer, Web services, Syndication) to connect a wide range of resources and systems for manage personal space.

The student can choose the applications and services which is his PLE can add new applications or can integrate data from different resources to produce a new service and this type of solution is found as the mash-up PLE.

3. Mashups and their Role in Learning

Mashups as a result of current technology trends are becoming increasingly oriented end user and the facilities offered by these increase.

A mash-up combines web applications, so that more applications can be integrated and viewed simultaneously.

Mash-up sites use different channels (for example RSS-Feeds, API, Widgets and Web services interfaces) to link different services.

Mash-up offers a solution for change, specifically the concept of personal learning environment by mixing that provide adjustment mechanisms for construction and maintenance of learning environments.

Mash-up web application solution allows users (students) to reuse existing Internet tools and services providing several advantages for both users and developers:

- Active participation in social networks of users;
- Accumulation of new knowledge using the unique benefits of social media;
- Development of customized collaborative learning;
- Quality control information, sharing methods;
- Creation of interactive activities that keep students learning interests;
- Ability to create innovative and useful software;
- Effective combination between reusable Web components and SOA (Service Oriented Architecture) by integrating; existing components and services in other Web applications

- Simplicity in development and integration using XML feeds and connection components.

Therefore, files included in the PLE (files pdf, power point and audio files) can be downloaded and used in other learning frameworks, such as the e-learning platforms, ready for collaboration.

The program installation used for PLE allows integration with Moodle, one of the most popular open source e-learning platforms.
In the education field mash-up have great potential to connect the content, collaboration and communication, which are considered key objectives of virtual learning processes.

4. Conclusions

Between technology, which is in constant change, and willingness to make a personal learning environment there are a closely link and the education field is in advantage.

Because construction and maintenance of learning environments is a fundamental part of learning, the findings out how can be customized the learning environments using the digital tools and this fact continues to be a concern of researchers.

References