Learning 2.0: concepts and experiences

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Abstract: E-learning arises in all educative contexts and levels with the use of information and communication technologies and massive access to internet connected computers. On the other hand, the fast development of social networking tools and web 2.0 technologies are producing an evolution of e-learning towards what is called a learning 2.0 paradigm. In this short paper we shall present the main technologies and pedagogical issues related to that new way of learning and how we can use them to improve the acquisition of competences and new knowledge.

Keywords: e-learning, web 2.0, learning 2.0, educational technologies, learning paradigms.

1 Introduction

Fast developments in information and communications technologies and changes in the behaviour of learners demand educational institutions to continuously evaluate their pedagogical approaches to the learning and teaching process, both in face-to-face and virtual classrooms.

The University acknowledges the impossibility of teaching each and every one of the competences students will need to know in that new knowledge society: on the one hand, there are too many competences to fit in any curricular design; on the other one, competences, even core ones, are in a constant change process

This leads to the need of "know-where" to complement know-what (as traditionally taught) and know-how (competence-based teaching, as defined in the European Higher Education Area (European Commission, 2006), for example, with the ability to locate information and knowledge, when necessary is of the foremost importance.

In addition, we have to take into account that the so called "digital natives" are now reaching higher education. They have ICT competences and expectancies the university system had not seen before. In order to provide users and students with efficient ways to learn the new needed educators have to adapt some new

technologies and new forms of teaching within the network in the so called Learning 2.0 paradigm.

2   Web 2.0 technologies

We speak of "web 2.0 technologies" to refer to a set of relatively new ways of doing things on the web. Although there is not a consensus, maybe the best document on the subject is What is Web 2.0 (O'Reilly, 2005). Essentially, we may speak about 'web 2.0' when:

- the web is considered as a platform where software applications, rather than documents, live;
- these software applications are designed to take profit from "collective intelligence" and effectively move from a developer-centric point of view to a user-centered one;
- according to that user-centered model, the user's data is the most important element in every transaction, and developers allow users total or almost total control of their assets;
- as more applications live on a web server, and not on a desktop, the meaning of software releases and versions is lost, because there is no need to deploy a new release of any application to have it working for every single user.

Web 2.0 came to be, among other reasons, because of the generalization in the use of some technologies and concepts, such as AJAX (Asynchronous JavaScript and XML), RIAs (Rich Internet Applications), RSS ((Really Simple Syndication)) or "folksonomies" (a new form of metadata gathering). All of these ideas had been around since the late 1990's but only attained generalized use around 2004.

Another factor we have to take into account is the extreme lowering of the cost of access to a strong presence on the web using sophisticated resources. The advent of lightweight content management software, from personal blogging tools to corporate portal management systems allows any average web user or organization to publish quality information comfortably and efficiently, and thus educators can now publish content on the web and use a wide range of new tools to communicate and work in order to improve teaching and learning process.

3   Learning paradigms

Briefly reviewing the theories of the pedagogical models behind traditional learning systems in chronological order, starting with behaviorism, going through cognitivism and constructivism and leading to social constructivism (Downes, 2005), an evolutionary path can be established that would lead us to the next stage: e-learning 2.0,. These theories, however, were developed before learning was impacted by ICT technologies. For the present situation Siemens et al. (2005) propose a new theory, "Connectivism", intended to explain both individual and social learning processes,

going beyond the social constructivism approach that states that individuals make sense by constructing their own models of their experiences (Jonassen et al, 2003). Connectivism theory's starting point is that knowledge exists by itself and "individuals are supposed to realize that knowledge by connecting the nodes where it's located; being that nodes other individuals, organizations, different clusters weakly tied. Some of connectivism key principles are:

- Learning is a constant building of a network
- Capacity to learn more is more important than current knowledge
- Connections, not content, are the starting point of the learning process
- Knowledge can rest within the network, not only within individuals

The connection between these two facets or contexts of the same emergence process (connectivism and web 2.0) is the learning 2.0 paradigm (Downes, 2005). Some of its key principles are:

- Learner-centered design: the learner constructs her own knowledge
- From communities of practice to social networking: the learner shares her knowledge
- Teachers and learners as peers within a social network
- From traditional learning applications to open learning environments.

4 Learning 2.0 Experiences

UOC (open University of Catalonia) is a completely online university. The UOC educational model places the student as an active agent at the centre of her learning process. During this process, the student is assisted by a team of teachers and is also helped by her partners in the virtual classroom, which is located inside the virtual campus (a highly developed intranet which satisfies all academic necessities, including registering and technical assistance). UOC's virtual campus is, by definition, an extraordinary scenario for social networks and learning 2.0 experiences.

Next we will explain some learning 2.0 experiences carried out at the Multimedia Graduate degree and the Computer Science degree.

The first experience used blogs (Downes, 2005) as a tool to help a student with her final project, where she had to create a multimedia application. This forces students to face a number of difficulties and the help of the instructor and classmates is very valuable in the solution of any emerging issues. A student with an especially hard final project was advised to maintain a public blog where she could explain her project and the work she had already done. The student was very active at the beginning of the process and she received more feedback from people outside the university that from her colleagues. However, after some time she only wrote when she had important problems. Even so, the blog helped her find some solutions to the encountered problems.

Another experience, in the Computer Science degree at the university was to do an activity in interdisciplinary teams. The main goal was to do a virtual project about an interesting area related to their degree. Students had to write all their communication process in a blog. This process consists on explaining all the actions related with an activity for being informed and for taking decisions about how to follow it. With this idea each team really keeps a 'diary' of their opinions and their evolution along the activity. The experience was considered very interesting but students commented that it also added to their work load.

The second experience involves the use of wikis. In most subjects of the Multimedia Graduate degree, the teacher provides students with links to external content of interest. Although many of those links point towards current articles with perishable content, some of them that can —and should— be kept from semester to semester since the provided information does not expire and their conversation leads to the creation of a knowledge base of the greatest utility.

In some of the subjects wikis were created to collect all that information. Furthermore, those wikis have proved themselves to be very useful tools for teachers to create repositories, not only for commented links, but also to collect projects carried out by students in previous semesters and useful information.

In this same sense an experience at the Computer Science degree was to perform several activities in virtual teams. All the information generated by teams had to be included in a wiki. The information and documents about each activity had to be collected there and all the members uploaded their information. Students without any knowledge about wiki use noticed that it was really easy and a good tool for learning. We have found, though, that students' use of wikis varies widely from subject to subject, and intend to study the causes of that variation.

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