Using, adapting and authoring OER with Web 2.0 tools

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Abstract: The purpose of this paper focuses on creating, using and reusing Open Educational Resources (OER) through Web 2.0 tools. This research aim to highlight innovative examples of best practices and also emphasise the key issues for applying Web 2.0 based technologies to use, adapt and authoring content for teaching and learning in Higher Education.
Keywords: web 2.0 tools, Content Development for Reuse, Colearn Community.

Introduction

Web 2.0 tools have become increasingly popular with a new generation of those learners, frequently referred as the 'digital natives', thanks to their ability to motivate through the use of collaborative tools, open educational resources (OER) and self-learning communities. This new breed of users participates in web 2.0 on a regular basis, using social media environments not only for entertainment, but also for networking and generating new content (O´Reilly, 2007, Recker et al, 2004). Despite a number of encouraging examples of the application of Web 2.0 to informal learning, there is still a need for more rigorous experiments in order to define robust frameworks that measure the effective use of Web2.0 tools in higher education scenario (Manson & Rennie, 2008; Minocha, 2009).

The purpose of this research therefore is to understand the best practice experience concerning the use of Web 2.0 tools and the associated quality control mechanisms that are used to monitor them with respect to the learning environment within the COLEARN community, whose users are members from the OpenLearn OER project.

The overall remit of this work focuses on capturing innovative work relating to developing learning and teaching skills for using, adapting and personalizing content. In essence, we are interested in supporting the reuse of content via a consideration of how it could be originally created with 'adapt' and 'reuse' in mind.

Background

Several studies emphasize that simply making Web 2.0 based technologies available to potential learners does not guarantee that they will actually use them for learning. There is still a need for a deeper understanding of the use of Web 2.0 tools in teaching-learning processes (Mason & Rennie, 2008, Carsten et al., 2008).

A recent report produced by the Committee of Inquiry into the Changing Learner Experience (2009) shows students' degrees of comfort and familiarity with using technologies in the opening stages of their university careers. This study illustrates (see Figure 1) that the constants in Web 2.0 tools use are primarily amongst undergraduates who engage in communication, social networking, looking up information and file sharing.

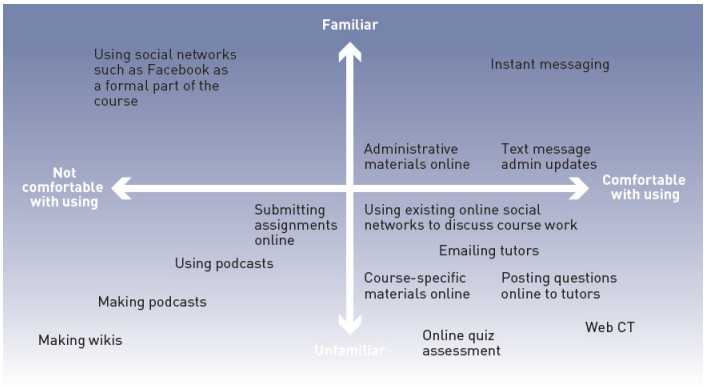

Figure 1. Comfort zones using technologies (The Committee of Inquiry into the Changing Learner Experience, 2009)

The Committee of Inquiry into the Changing Learner Experience (2009) points out that "a*t university, students use social networking to support their daily lives. This includes their communications with their tutors but more especially with their peers, mostly in relation to their social life, but also to discuss coursework. In this latter context, where discussion is instigated by the students themselves, it works well. It's less successful when initiated by staff. Here, in students' minds, discussion acquires connotations of formality and seriousness that do not sit well with the social medium."*

Web 2.0 is considered a constructivist environment where learners are active, interactive, participative and collaborative (Manson and Rennie, 2007). Although anyone can download, remix, recreate and upload content, most users of Web 2.0 technologies are passive consumers rather than critical and creative learners (Stevens, 2006). It appears, therefore, that there is an urgent need to help learners using web 2.0 tools to develop their skills – including searching, retrieving and critically evaluating information from a range of appropriate sources (The Committee of Inquiry into the Changing Learner Experience, 2009). These learning skills, grouped in several types, can be seen in the Table 1 below.

Learning		**Level of distributed media resource**		
Skills	**Activities**	**Fundamental**	**Extended**	**Emerging**
Information handling skills	Web searching and retrieving	Print	Webpages	knowledge maps, e-books, e-libraries, Repositories
Practicing articulation of ideas	Reflective Journal	Computer conferencing	Blogs Videoconferencing	knowledge maps Podcasts
Linking theory and practice	Learning by doing	Online quizzes	Instant messaging tutorials	knowledge maps Screencasting
Developing & assessing student understanding	Linking different sources, Reusing and remixing OER	Connected document (with hot links)	e-portifolios	knowledge maps Mashups
Reusing and Sharing information online	Sharing papers, research, data	Print	Webpages, VLEs	knowledge maps e-libraries Digital Repositories
Rehearsing skills and procedures	Audiovisual Essay	Audio clips (PowerPoint)	Videoclips	Webcasts, Youtube
Practicing teamwork	Group Projects	Online games	Social book-marking	knowledge maps Wikis
Learning and sharing professional practice	Problem solving	Role Playing	Animations or audiographics	knowledge maps Simulations
Reviewing and Feedback	Critical information evaluation	Telephone support e-mail	Skype	Social network applications

Table 1- Examples of the application of Distributed Media to Learning Activities (adapted from Manson and Rennie, 2008:49)

Fostering students to develop their learning skills by using Web 2.0 is also enhanced by preparing educators to change their teaching practice through innovative pedagogical methodologies using web 2.0 tools (Cram et al, 2004; Franklin Associates, 2008).
This paper, which investigates the uses of web 2.0 in Higher Education, is focused on this new environment on identifying the innovative ways of improving learning and teaching skills, including authoring – developing content for use and reuse, particularly with a knowledge mapping tool and web videoconference application.

Methodology

This study, based predominantly on qualitative research, but with some quantitative indicators, was carried out in two phases using two different instruments: online semi-structured interviews and analysis of the examples selected by the COLEARN community.
COLEARN – "Collaborative Open Learning Community" is a Community in the OpenLearn project<http://labspace.open.ac.uk/course/view.php?id=1456>. Most of its participants are from Brazil and Portugal whose interests focus on exploring knowledge media tools to facilitate collaborative informal learning. Based in several universities located in different countries, they use FlashMeeting to meet online, learn together and create new educational resources. Their discussions are focused on diverse open learning issues such as game based environments, knowledge media and social software. Compendium Knowledge Maps are created on diverse topics, for instance, e-democracy, thinking skills and information literacy. They use Compendium to map learning material, share references, add new information from the web and include their own comments. Some of their Compendium maps show web videoconferences and their reflections about what they are studying.
The period of data collection in this study took place from July 2008 to July 2010. During two years this open learning community with 1243 members produced more than 200 maps in Compendium and 200 web conferences in FlashMeeting.
Compendium <http://www.compendiuminstitute.org> is a software tool for representing and connecting ideas, concepts, arguments, websites and documents (Buckingham Shum and Okada, 2007). It can be used as a learning tool to link, interpret and annotate any other resource on the web. OpenLearn users can navigate, download, edit and re-upload maps.
FlashMeeting (fm-openlearn.open.ac.uk) is a web video conferencing tool (Scott, Tomadaki & Quick, 2007), where OpenLearn users can book an online meeting and select the time, date, duration and number of attendees. The application generates a URL, which can then be sent to the meeting attendees. By clicking on the link, they gain access to the videoconference. The meeting can be edited and its URL can be shared within the community or on the internet. The number of attendees varies from 2 to 13 people, but the number of users in the COLEARN community and outside who replayed the event is higher. The most popular events are the seminar "Integrating Knowledge Media Technologies in Moodle" with 815 replays and the "Discussion of Knowledge Mapping" with 779 replays.

Findings

After analysing the Compendium maps and FM webconferences, three main categories emerged from the data collected: i) organising learning references; ii) planning learning goals; iii) developing systematic reflections;

Organising learning reference

Figure1 shows a reference map to support a discussion in FlashMeeting. Some participants interested in games and learning guided by two experts who provided assistance during the process selected twenty five references using Compendium and classified in articles (9), websites (5), research(3), blogs(4), events(2) and books(2). They shared this map in the OpenLearn Community COLEARN and booked a FlashMeeting to discuss the uses of Games for Learning.

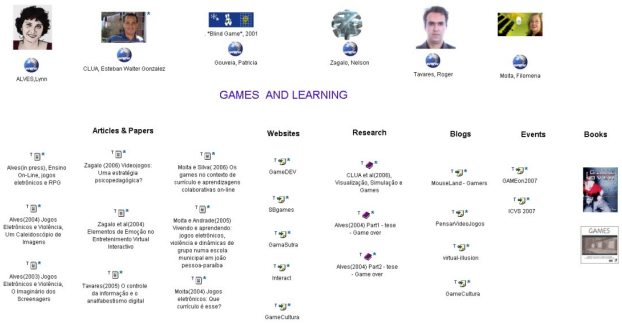

Figure1 Compendium Map about games and learning

Planning learning goals

Figure2 presents the replay of a FlashMeeting discussion in which participants developed a brainstorm about information literacy guided by a facilitator. The facilitator was a lecturer who engaged participants to discuss the meaning of information literacy in FlashMeeting. Each participant wrote a keyword related to Information literacy, and the group then started to organise connections developing a mind map in the FlashMeeting whiteboard (called FlashBoard). This mind map of relevant topics was very useful for sharing ideas, and also topics of interests in order to identify their interests for next discussions and possible learning goals.

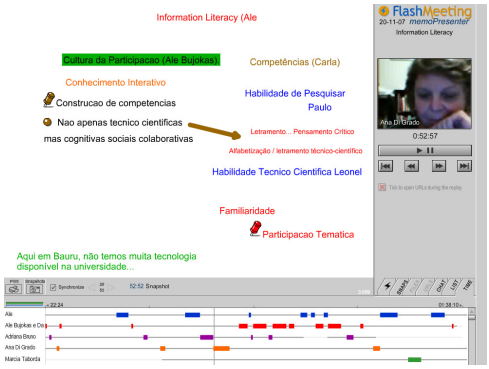

Figure2 FlashMeeting about Information Literacy

Developing systematic reflections and critical thinking

Figure 3 shows a Concept Map created in Compendium by a professor whose image (jpg file) was shared in the FlashMeeting. This concept map presents fifteen keywords about e-democracy. This map was used by this professor to discuss and engage participants in systematic reflections and critical thinking. When learners structure relevant knowledge through concept maps during the discussion, they may recall and apply what they understood easily. The graphical representations also help them create new connections with new concepts.

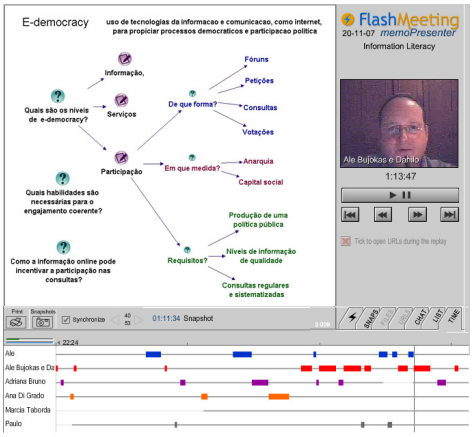

Figure3 FlashMeeting about Information Literacy map created in Compendium

Conclusions

The thematic analysis of our investigation has revealed that there is strong evidence to support the wide ranging use of Web 2.0 technologies through the innovative uses of Knowledge Map tool and Web videoconference Application. Examples vary within and across institutions. Likewise examples of University led developments also diverge with only one institution demonstrating a linked channel of Web 2.0 communications including strategy and implementation.

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A number of examples continued to offer relevant information that demonstrated evidence of reuse of both Web 2.0 tools and materials. One of the most important findings is that there is a widespread acceptance that it is 'staff development' which is one of the most significant barriers to the more extensive and effective use of these technologies for learning. Where students are generally seen to be keen to use Web 2.0 systems (including the uses of Compendium and FlashMeeting), and are in general already embedded into social support systems, it is in developing university staff to understand the effective potential that requires significant work. Academic Communities like COLEARN have put a number of valuable assets into the public domain in this regard, but significant further work remains to be achieved to ensure effective quality control of Web 2.0 usage.

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