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## ENHANCING INFORMAL LEARNING THROUGH VIDEOCONFERENCING AND KNOWLEDGE MAPS

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### 1- Introduction

The development of new technologies and the open content movement have been opening up new opportunities for online informal learning. The Internet, “as a new publishing medium”, is proving its users a considerable increase in access and circulation of knowledge and offering a new world of learning to those outside the academic realm (Willinsky, 2006:33). The free access to open educational resources, online libraries, public repositories, freeware tools and open communities allow people interact and learn together than ever before (Eisenstadt and Vincent, 1998; Anderson, 2007).

However, the simple access to information does not necessarily results in acquisition of knowledge and development of skills (Rogers, 1995; Nonaka & Takeuchi, 1995; Salwen & Sacks, 1997). In order to learn effectively, students need to be engaged in higher order thinking which operates beyond mere exposure to factual or theoretical information (Jonassen, Beissner and Yacci, 1993).

This initial work presents the uses of knowledge maps and videoconferencing to enhance informal learning. We analyse the role of such maps created in Compendium and web videoconferencing through FlashMeeting for learning communities.

In this study, which is part of a research in development, we investigate the uses of two freeware tools offered by the OpenLearn Project (OU-UK), Compendium for knowledge mapping and FlashMeeting for videoconferencing (Okada et al, 2007). Our research questions focuses on how these tools can be used to enhance informal learning in online communities. How can knowledge maps and video web conference be used to support critical reflections and engage people in self-directed learning?

In the OpenLearn project developed by the Open University and launched in October 2006, we analyse the community COLEARN *Comunidade de Pesquisadores da Lingua Portuguesa* whose participants are professors, researchers and academic students. Based on qualitative analysis of their knowledge maps and video webconference we point out some applications of these technologies to facilitate informal learning.

### 2- Contextualisation

COLEARN – “*Mapeando conhecimentos com aprendizagem aberta*” is a Community of OpenLearn users from Portuguese-Speaking Countries <<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 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 2007 to December 2007. During six months this open learning community with 123 members and 65 active participants published 44 maps in Compendium and 10 web conferences in FlashMeeting.

Month	Compendium Maps		FlashMeeting web videoconferences			
	Qt.	Title	Qt.	Title	Users	Replay
JUL/2007	5	Media Literacy E-democracy	1	Demonstration - Compendium	12	41
AUG/2007	13	Critical Thinking Games & Learning	1	Discussion - Knowledge Mapping	13	279
SEP/2007	4	Knowledge maps	1	Demonstration - Mapping for Learning	2	15
OCT/2007	3	Learning How to Learn	1	Seminar - Integrating Knowledge Media Technologies in Moodle	2	655
NOV/2007	11	Thinking Skills	3	Discussion - OpenLearn Collaboration	10	37
				Discussion- Information Literacy	12	71
				Discussion - Social Networks	11	44
DEZ/2007	8	Information Literacy and e-learning	3	Discussion - Learning on the Web	5	21
				Seminar - Lifelong Learning	7	57
				Seminar - Pedagogical Mediation	2	40

Table 1 – Compendium Maps and FlashMeetings webconferences by the COLEARN

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. Table1 shows the number of maps created in Compendium by topic and month. The most popular topics are critical thinking, games & learning (13 maps) and thinking skills (11 maps).

FlashMeeting ([fm-openlearn.open.ac.uk](http://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. Table1 presents also the number of videoconference organised by COLEARN participants: 2 demonstrations, 5 discussions and 3 seminars. 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 655 replays and the “Discussion of Knowledge Mapping” with 279 replays.

### 3. Background - Informal Learning

In recent years several researches have been focused on adult education, continue professional development and lifelong learning. They have been raised important issues around the uses of technology to support informal, non-formal or self-directed learning. However, most work on development and evaluation of online tools has been done in higher education, mainly in formal education contexts and there is still not enough evidence for how to use effectively the technology outside this context (Thorpe,1999). How could technology be used to facilitate online informal learning? With the emergence of communities of practice and social networks, one of the greatest challenges is to understand what factors influence informal learning and participation in these voluntary contexts Gray (2004).

Some scholars (Livingstone, 2001 ; McGivney, 1999, Jeffs and Smith, 1990) define informal learning as any activity outside the preestablished curricula which involves the pursuit of understanding, knowledge or skill whose content and process are determined by the learners, individuals or groups who choose to engage in it. Jeffs and Smith (1990) emphasizes that while formal education is curriculum-driven, informal education is largely driven by conversation. Leadbeater (2000) points out the importance of informal learning going beyond the traditional education, by focusing on developing skills, not only literacy, numeracy, creativity and collaborative work; but also the ability and yearning to carry on learning. Different contexts should be used to apply knowledge in order to solve problems and add value to people's lives; and in this sense, we included also online environments.

However Eraut (2000:12) argues that it is not easy to investigate non-formal learning because the outcomes are difficult to detect, people are unaccustomed to talking about their learning and it is hard for them recognize non-formal learning contexts. In order to understand the levels of intention implicit and explicit in the process of learning, he describes a typology of non-formal learning based on three categories:

- Implicit learning refers to “the acquisition of knowledge independently of conscious attempts to learn and the absence of explicit knowledge about what was learned’ (Reber 1993 quoted by Eraut 2000: 12).
- Reactive learning refers to spontaneous and unplanned situations where the learning is explicit occurs in response to current situations.
- Deliberative learning the level of intentionality is more explicit, learning is more reflective, systematic and planned.

## 4- Results

After analysing the maps and webconferences based on three categories described by Eraut (2000), three main themes emerged from the data: i) organising learning references; ii) planning learning goals; iii) developing systematic reflections;

### 4.1 Organising learning reference

Figure1 shows a reference map to support a discussion in FlashMeeting. Some participants interested in games and learning 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

#### 4.2 Planning learning goals

Figure2 presents the replay of a FlashMeeting discussion in which participants developed a brainstorm about information literacy. 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 were very useful for sharing ideas, and also topics of interests in order to identify their interests for next discussions and possible learning goals.

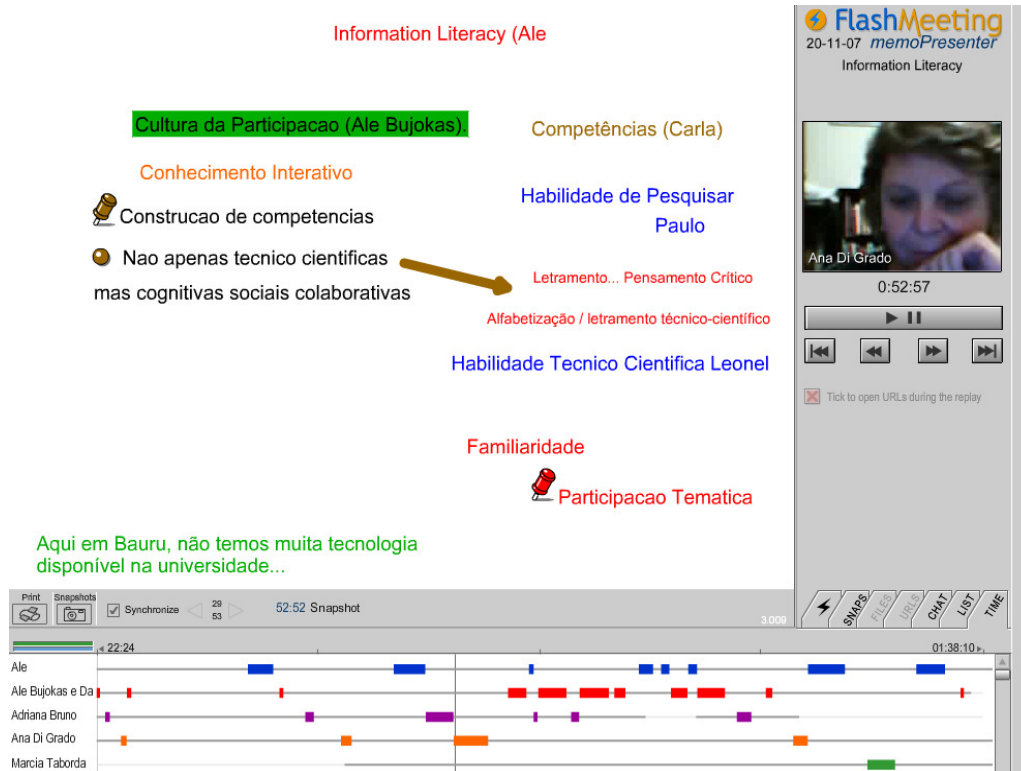


Figure2 FlashMeeting about Information Literacy

#### 4.3 Developing systematic reflections

Figure 3 shows a Concept Map created in Compendium whose image (jpg file) was shared in the FlashMeeting. This concept map presents fifteen keywords about e-democracy to discuss and engage participants in systematic reflections. 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.

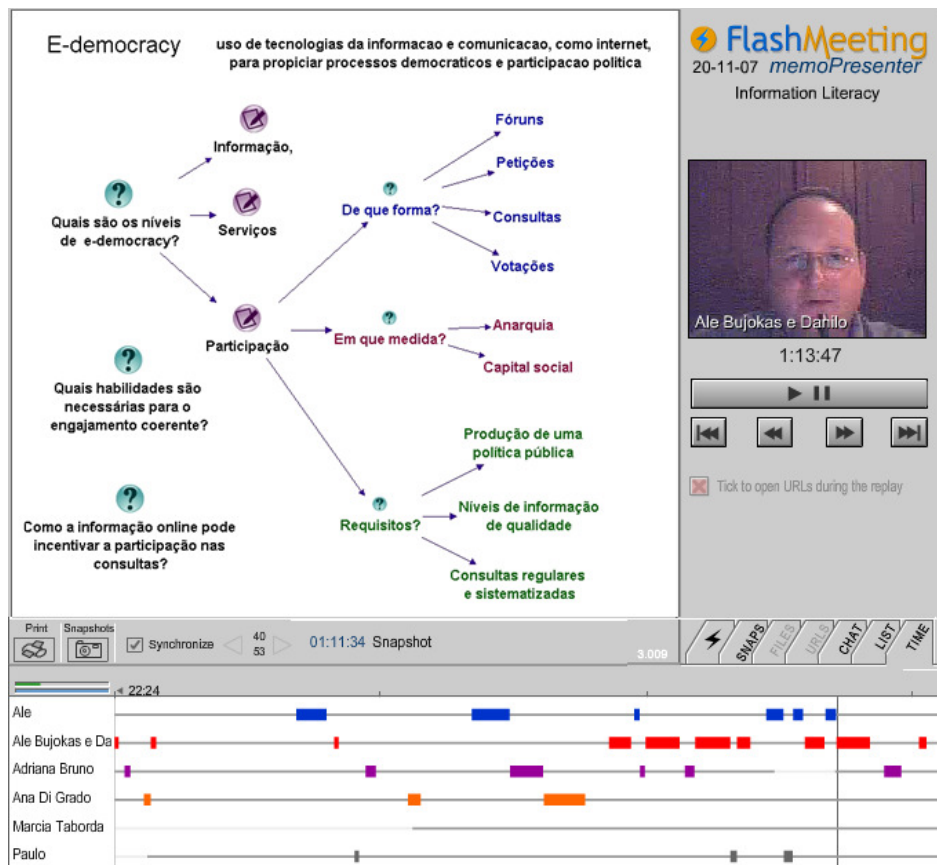


Figure3 FlashMeeting about Information Literacy map created in Compendium

## 5- Conclusions and Future Research

Knowledge Maps and Web videoconference mark a profound shift in our relationship to develop new strategies for learning, constructing and sharing knowledge. We move from simply following information, instructions and pre-defined tasks to discussing them, making sense of them, reconstructing and sharing meanings collectively. Compendium and FlashMeeting indicates new ways to foster informal Learning by:

- offering a multimedia environment where participants can exchange any kind of information: text, image, sound and video;
- allowing learners map concepts, their own ideas and topics discussed from the web videoconference;
- allowing learners access conferences and maps – everything is recorded and can be reviewed;
- engaging people in critical discussions and reflections;
- promoting collaborative brainstorming synchronous through FlashMeeting or asynchronous through Compendium;
- helping learners build their communities and share their interests.

Through these free tools learners and educators can develop an environment for active learning and self-organising communities. Our future research focuses on how students and educators can use these tools to foster social learning networks and contribute to the open learning resources movement by developing their own learning materials and new pedagogical strategies.

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