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USING SOCIAL BOOKMARKING TO ENHANCE COOPERATION/COLLABORATION IN A TEACHER EDUCATION PROGRAM

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Abstract: This study focuses on the usage of a web-based social bookmarking application in a post graduate teacher education program at the Minho University, Braga, Portugal. The overarching purpose of this project was to develop a way for post graduate teachers to collectively contribute and share resources and information that are available on the Internet important for the development of a research project. The social bookmarking application Del.icio.us was used for one semester and the learning activity was evaluated thru interview techniques. 24 in service teachers participated in the study. Teachers created group accounts on Del.icio.us and, along the semester, developed an electronic database for the final collaborative project in RME. The aim of the study was to verify if the unique combination of social interaction with a focus on collaboration and the sharing of information based on common interest made possible thru social bookmarking was important: a) for the development of a research project; b) to enhance cooperation/collaboration among peers that facilitated the accomplishment of an end product or goal.

1. Introduction.

Thinking about the future of training in the knowledge-based society needs to be holistic as learning will become a lifelong activity that cuts across different learning generations and life spheres such as private, public and work. The focus should therefore be not only on traditional formal learning institutions such as schools and universities but it should also embrace other forms of adult education and many forms of informal learning. Learners need to be prepared not only to operate the technology but also for higher-order skills such as knowing and understanding what it means to live in a digitalized and networked society and specially what it means to work in online collaborative teams where information is shared and knowledge collaboratively constructed (Punie & Cabrera, 2006).

The first generation of the Internet had as main characteristic the amount of available information. However, the user's role in this scenario was only of viewer of what was happening in that particular web page, as he didn't have authorization to change or edit the content. This stage can be called Web 1.0. Web 1.0 was very expensive to users, because most services were paid and controlled through licences; the systems were only available to those who could afford online transactions and buy software to create and maintain sites (Anderson, 2006). Along with the changes of paradigm to Web 2.0, it exists a huge and varied online applications for several aims, the use of these resources grows as the users produce information, sharing their knowledge through the Internet, in an easy, fast way. Within this new generation of the Internet called Web 2.0, concepts like Blog, Wikipedia, Podcast, Orkut, Del.icio.us, Skype, Messenger, LinkedIn are a few examples of tools of systems available on the global network (Fryer, 2005; Richardson, 2006).

According to Yuen & Yuen (2008), the Web 2.0 applications hold profound potentials in education because of their open nature, ease of use and support for effective collaboration and communication. They change the traditional view of human knowledge and open up more opportunities in teaching and learning. Teachers can use Web 2.0 tools and particularly social bookmarking tools to attract students' attention and enhance collaborative learning experiences (Abbitt & Odell, 2007; Coutinho, 2007; Coutinho & Bottentuit Junior, 2007).

The study we present in this paper aims to explore how a particular family of Web 2.0 tools - social bookmarking - can be used for teaching and learning. A group of 24 teachers explored Del.icio.us during a post graduation training program in Education. We believed that these services were perfect for groups to use for collective projects as the one they had to develop for approval in the curricular subject Research Methods in Education (RME). Central to this project was the idea that there is a great benefit in

collaboration among a group of peers and that this collaboration could produce a final written essay that reflects the interests and understanding of the group as a whole. By studying the usage and attitudes of users toward this collaborative activity, it would be possible to determine the next steps in the effective use of this new generation of web services in teaching and learning. On the other hand, as instructors in an education program we believed that the use of this new web tool could help to prepare teachers who are equipped with technology resources and skills and who can effectively teach the necessary subject matter content while incorporating technology concepts and skills.

2. Cooperation/Collaboration in web based environments

In the knowledge-based and global society we live in, cooperative team skills and social learning are essential for individual success, employment and social inclusion. According to Slavin (1990) school systems must recognise the importance of learning objectives such as social competence, critical thinking, knowledge sharing and cooperation techniques.

In the late 80's Chickering & Gamson (1987) already defended that learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions improves thinking and deepens understanding. This recognition backwards as a consequence of the growth of the interest of research related to educational processes and training in distance learning environments. Harasim (2000, p.43) detaches the importance of collaborative processes for learning in the web: "The principle of collaborative learning may be the simple most important concept for online networked learning, since this principle address the strong socio-affective and cognitive of learning in the web".

Collaboration in virtual environments is seen today as a pedagogical "must" and is in central to educational research that explores innovative models for teaching and learning (Jobring, 1999). In fact, as Harasim argues, "The convergence of the computer' network revolution with profound social and economic changes has lead to a transformation of education at all levels. The new paradigm of collaborative networked learning is evident in the new modes of course delivery being offered, in the educational principles that flame the educational offerings, the new attributes that shape both the pedagogies and the environments that support them and that yield new educational processes and outcomes" (Harasim, 2000, p.42).

In teacher education and training programs these principles are outlined in the literature. Gilroy (2001) argues that the key to successful online learning is the "social space" or "community of practice" - an environment where teachers generate ideas and build knowledge and expertise through collaboration. Online communities go beyond superficial exchanges to create a space where teachers share and benefit from each other's expertise, jointly committed to developing better practices. According to several authors (Downes et al, 2001; King, 2002; Mayo, Kajs, & Tanguna, 2005; Piano, 2007; Varandas et al, 1999) the establishment of a culture of collaboration among teachers is, a key to educational technology professional development and for the success of any curricular reform (Woodbridge, 2004).

2. Social bookmarking

Social Bookmarking is a Web-based service for saving and referencing Internet website favorites. Bookmarks have been available for many years, but "social bookmarks that conform to the RSS information sharing standard have emerged very recently (Fryer, 2005). One free example is Del.icio.us (<http://del.icio.us>), a website that allows users to quickly (through the use of "bookmarklets") save desired website addresses and categorize them with one or multiple "tags" that are user defined. As a social bookmarks service, the del.icio.us website indicates how many other users have linked to a particular website address, and allows users to link to the social bookmarks of those other users. Social bookmarks can be an invaluable aid in student research projects, teacher technology workshops, and for personal use in keeping track of and sharing valuable Internet resources. According to Fryer (2005), since the del.icio.us site "speaks" RSS, any "tag" (topic) in a person's social bookmarks can be syndicated / subscribed to using an aggregator like Bloglines. Sharing of website favorites/bookmarks has never been so easy, powerful, cheap and fast.

According to Lomas (2005), social bookmarking opens the door to new ways of organizing information and categorizing resources. The creator of a bookmark assigns tags to each resource, resulting in a user-directed, "amateur" method of classifying information. Because social bookmarking services indicate who created each bookmark and provide access to that person's other bookmarked resources, users can easily make social connections with other individuals interested in just about any topic. Users can also see how many people have used a tag and search for all resources that have been assigned that tag. In this way, the community of users over time will develop a unique structure of

keywords to define resources something that has come to be known as a “folksonomy” (Hayman, 2007; Vander Wal, 2004).

And the author pursues arguing that it may become less important to know and remember where information was found and more important to know how to retrieve it using a framework created by and shared with peers and colleagues. Social bookmarking simplifies the distribution of reference lists, bibliographies, papers, and other resources among peers or students and those were the features of the software we explored with our group of high school teachers (Lomas, 2005).

In synthesis we consider social bookmarking tools to be useful for: a) those who use multiple computers in various location, b) to discover items similar to one's selections, c) for collecting search strategies and information for bibliographies, d) for course-integrated instruction, e) to share information with peers, managers, students e) for Web site development.

3. Design

The study we present in this paper was developed in the first semester of 2007/08 and enrolled 24 post graduate teachers who attended a master program on Research Methods in Education. RME is a 3 hours/week lecturer class course that aims to provide students with competences in a broad range of social scientific methods necessary for developing a mandatory research project (an original dissertation) in order to obtain licensure. All participants were in service teachers that attended classes in a post labour schedule. RME topics are usually assessed by individual final exams or term essays of on a program topic accorded with the instructor. Our previous experience of teaching RME to postgraduate teachers who had difficulties to attend regular classes, claimed for the implementation of new teaching methods that take advantage of the internet services and resources and doing so we were preparing the learning opportunities that facilitate in service teachers' use of technology to learn, and communicate. A different methodology was then tested: teachers organized into small groups to develop a research project on a chosen topic related to RME lectures and bibliography. All groups had a different topic to develop and an original essay should be developed and presented at the end of the semester for assessment. Groups used web 2.0 tool Del.icio.us to create a group account for bookmarking internet resources. The aim of the study was to verify if the unique combination of social interaction with a focus on collaboration and the sharing of information based on common interest made possible thru social bookmarking tools was important: a) to develop collaboration among peers, b) to develop a research project and c) to enhance autonomy and habits to search and use the information on the web.

At the end of the semester the learning activity with Del.icio.us was assessed teachers through focus group techniques.

Focus groups are a form of group interview that capitalises on communication between research participants in order to generate data. Although group interviews are often used simply as a quick and convenient way to collect data from several people simultaneously, focus groups explicitly use group interaction as part of the method. This means that instead of the researcher asking each person to respond to a question in turn, people are encouraged to talk to one another: asking questions, exchanging anecdotes and commenting on each others' experiences and points of view (Alreck & Settle, 1995). The method is particularly useful for exploring people's knowledge and experiences and can be used to examine not only what people think but how they think and why they think that way (Grenbaum, 1998). The focus group sessions, with a duration of 45 minutes/per group enrolled of 5-6 teachers per session and were audio recorded for posterior analysis. The interviews were transcribed and analysed according to content analysis techniques (Bardin, 1970).

4. Methods for data collection

24 in service teachers participated in the study and fulfilled and initial questionnaire that was administrated during the first session. 62,5% of participants were female and 37,5% were male. As to age the average was 33,9 years old. 3 were elementary school teachers, 15 from medium grade school and 3 taught high school level students (K10-12).

As to previous acknowledgment of social bookmarking concepts and tools, we verified 79% of the participants were unfamiliar with the concept of “social bookmarking”; the term “Tags” was familiar to 60% of the respondents, but the terms “RSS” and “folksonomy” were unfamiliar to 62% of the participants.

For final assessment of the social bookmarking learning activity 21 teachers participated in the focus group sessions. We purposely created an informal scenario for group interviews in order for participants to feel at ease to answer and interact. Teachers were informed that the interview session would be audio taped but also that the results would be used only for research purposes.

During the group interview participants were asked the following questions:

1. Was it easy (or difficult) to use the social bookmarking tool Del.icio.us?
2. What were the more positive (and more negative) features of the tool?
3. Is Del.icio.us important (and why) for the development of a collaborative research project?
4. What were the benefits of using the tool for group work and knowledge management?

4. Results

Most participants said they had no difficulties in using Del.icio.us. Only 4 teachers reported some initial difficulties in getting familiarised with the tool and one said difficulties had to do with English language version of the software. Most reported as positive aspects of the tool the easiness to use, being always available and mobility as it was always possible to accede to the information as long as you have a computer with internet access.

Positive and downsides of the tool were also highlighted during the interview sessions. As to positive aspects participants mentioned as positive features of Del.icio.us:

- availability anytime and anywhere
- easy to use and manage
- very useful to organize the information by topics with tags
- permits to share preferred sites with colleagues
- to accede to lists of websites others searched before
- to create and categorize a list of favourites for one own
- to register web searches and let them available to the scientific community

As to the negative features of the Web 2.0 tool participants mentioned:

- the interface that is neither intuitive nor pleasant;
- the low level of organization allowed thru tagging
- it is difficult to categorise the information if you have a long list of websites
- the existence of lots of garbage on the web that people can add to del.icio.us.

All teachers agreed that a social bookmarking tool like Del.icio.us had great potentialities for the development of a research project as the one they developed for RME subject. Here we have some of the answers given:

“It allows the group to organize the web pages that have been consulted while searching the internet”

“Extremely important for knowledge sharing”

“Del.icio.us enables to relate different research areas”

“It is excellent to categorize internet resources and have them always available online”

“Del.icio.us is a good example of a tool that helps the researcher to find new and never thought resources at a simple click of the mouse”

“It allows the researcher to collect and organize a bibliography and this is crucial for the development of a research project.

“The possibility to accede to what other researchers are searching at a specific moment is crucial for good research and that is the great added value social bookmarking has to give.”

“It allows a better information organization and to carry out research in a faster way.”

“It allows sharing with colleagues bookmarks found about a specific subject”.

“It allows saving the sites’ links, articles and blogs regarding the topic being analysed, in an organised and accessible way, from any location”

The potential of the tool to enhance collaboration among peers during the development of a research project was mentioned by most of the participants during the focus group sessions. Here are some of the opinions and arguments presented during the interviews:

To have a Del.icio.us account constituted an added value for the whole group. It allowed the organisation of all the information while our research activity was in course.

At the research level there is a great advantage since when researching a certain tag, the attained results are already the result of a collaborative activity of the whole group

It allows sharing with the group the researched sites regarding the assignment's theme, making the research more collaborative and allowing more diversity at the information gathering level.

It allows to see the research made and to compile them in an organised fashion, in such a way that all can benefit from the information

It allows each member to contribute with its own research and information to the group work.

We can share research with other members of the group.

I always know how the research of the other group's elements is developing. It allows us to be in line with each other

The group's elements can share the same list of favourites, each one contributing with its own research in a way that it facilitates the group's work, even if working at a distance.

It betters the group's work and allows working at a distance (which is the case of the group that I belong to)

We instantly share a web resource that is important for all the group to read.

We can share information and consequently have access to other sites that the other colleagues had consulted and that could be unknown to us.

Yes, because it allows each element, whilst the research takes place, to add resources to the account. It is a way of, collaboratively, collect and organise information.

5. Final Remarks

In the knowledge-based and global society we live in, cooperative/collaborative team skills and social learning are essential for individual success, employment and social inclusion. As said above, school systems need to recognise the importance of learning objectives such as social competence, critical thinking, knowledge sharing and cooperation techniques. The 2008 Unesco report entitled *ICT Competency Standards for Teachers* recognises that, "To live, learn, and work successfully in an increasingly complex, information-rich and knowledge based society, students and teachers must utilize technology effectively". In order to attain such goals, classroom teachers need to prepare educational settings that enable students to become:

“..."

- Capable information technology users
- Information seekers, analyzers, and evaluators
- Problem solvers and decision makers
- Creative and effective users of productivity tools
- Communicators, collaborators, publishers, and producers
- Informed, responsible, and contributing citizens” (Unesco, 2008, p. 1).

As educators in teacher education programs we have the responsibility to prepare technology skilled teachers that use information technologies in the classroom as cognitive tools (Jonassen, 2000). As stated above, learners need to be prepared not only to operate the technology but also for higher-order skills such as knowing and understanding what it means to live in a digitalized and networked society and specially what it means to work in online collaborative teams where information is shared and knowledge collaboratively constructed (Punie & Cabrera, 2006).

The learning strategy that enrolled the in service teachers who attended a post graduation in Education at the Minho University is an example of a learning activity that engages participation and collaboration among a group of peers that used internet resources for the development of a research project. The feedback given by participants confirmed by direct observation of classroom routines as well as the quality of the final products presented to the instructor for assessment were the answers to the initial questions that motivated the development of the study we present in this paper:

- a) Del.icio.us is a Web 2.0 tool that is suitable for group activities that demand capabilities in seeking, analysing, evaluating, organising, communicating and sharing internet resources;
- b) Through the ongoing and effective use of this Web 2.0 technology teachers developed collaborative skills essential for the success of the RME assignment.

Of course that this type of activity has limitations and downsides that teachers commented during the group interviews: the activity is not suitable for certain age levels (as primary and elementary students), curricular areas (like Arts and Music), as it demands for an assignment where students have to do research, solve problems and make decisions together.

But aren't those the ultimate competences we want our 21st students to accomplish? European politicians emphasise the importance of the "New Growth" economic models that demand for new knowledge, innovation, and the development of human capacity as the sources of sustainable economic growth. According to the 2008 Unesco report "It is through education and human capacity development that individuals not only add value to the economy but contribute to the cultural legacy, participate in social discourse, improve the health of the family and community, conserve the natural environment, and increase their own agency and ability to continue to develop and contribute, creating a virtuous cycle of personal development and contribution." (Unesco, 2008, p. 7). We hope the learning activity we developed and presented in this paper provided in-service teachers with the necessary skills for teaching students who have to face challenges posed by a rapidly changing world.

6. References

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