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WEB 2.0 AND COLLABORATIVE KNOWLEDGE IN THE UNIVERSITY CONTEXT

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RESUMÉ AND ABSTRACT

The novelty of Web 2.0 lies in its ability to address the possibilities and demands of sharing information and knowledge practices across dispersed groups and communities with diverse social prerequisites. In the university context the Web 2.0 perspective is mainly used to discuss new educational possibilities and the collaboration between researchers and scholars is not highlighted. In this paper we will highlight Web 2.0 in connection to the knowledge creation processes among university staff and researchers and we argue that Web 2.0 could encourage a new way of scholarly communication and collaboration. In other words, we envision a change in the way university researchers view and enact knowledge sharing as a collaborative activity both offline and online. This is a view which is in line with the ideals of Web 2.0, Learning 2.0 as well as the practice-based perspective on knowledge management, focusing on knowledge creation as human collaborative actions in specific social contexts. This is an aspect of Web 2.0 and collaborative knowledge which we feel has been neglected in research so far. The need for empirical studies is obvious and in the near future we aim at conducting empirical studies into the use of Web 2.0 as a collaborative tool among university staff.

KEY WORDS

Collaboration, Knowledge sharing, Knowledge creation, University context, Web 2.0

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INTRODUCTION

Collaboration has always been important in creating new knowledge and developing organisations and their activities. This has received a new impetus through the interactive web where the development of virtual tools and interactive techniques has led to new collaborative possibilities facilitating knowledge sharing in social networks. These kinds of interactive tools are united under the concept Web 2.0, a term introduced by Tim O'Reilly (2005). The Web 2.0 tools and techniques are seen as including the power of the Web to use collective intelligence through visible structures and the collaborative creation of information and contents.

The novelty of Web 2.0 lies in its ability to address the possibilities and demands of sharing information and knowledge practices across dispersed groups and communities with diverse social prerequisites. Until now, writings on the Web 2.0 framework have been focusing on describing the tools and techniques and their potential benefit as well as being skeptical of their value (Ojala 2005; Avram 2006; Dvorak 2006; Tredinnick 2006b). In the university context, the Web 2.0 perspective is mainly used when discussing new educational opportunities and the collaboration between researchers and scholars is not highlighted. In this paper we will stress Web 2.0 in connection to the knowledge creation processes among university staff and researchers. It would be of interest to explore, examine and theorize on questions such as: How are the Web 2.0 techniques used in university context? How are they affecting knowledge processes and supporting collaboration in the university context?

WEB 2.0 TECHNIQUES

There are many well known examples of Web 2.0 techniques or resources, such as social networking sites, blogs, wikis, and virtual communities (Brown and Adler 2008). All together, the new social and interactive technologies within the concept of Web 2.0 enable new collaborative possibilities and demands in terms of knowledge sharing in organizations. These technologies are defined as a network of collaborative applications where users consume, create and recreate information from several sources resulting in new contents and structure. The entire informational value is constructed by user action and user interaction. It is a social dynamic including how the information is used, understood, and re-invented all the time (Miller 2006; Tredinnick 2006a).

The attitudes towards Web 2.0 tools have changed rapidly and there has been a growing interest in using these interactive tools in various contexts. For example, blogs were first seen as individual diaries with a description of an individual's political interests, but are now experienced as a more collective tool where several persons can participate and generate a wider knowledge base on a specific matter. With these features the blogs do not only reflect a personal viewpoint, they allow readers to respond and comment (Ojala

2005), creating a dynamic context (Klamma, Cao and Spaniol 2007). A clear benefit of social software is the fact that it is technically not challenging. Sharing for example, experiences and information on work procedures in a blog is rewarding when the person knows their colleagues and peers will read about how the procedure works and contribute their own knowledge on the topic. The exchange of views leads to a more productive knowledge sharing environment (Brady 2005; Ojala 2005).

The accessibility and the public nature of Web 2.0 techniques are seen as motivating people to write and contribute and enabling them to create ideas, accumulate knowledge, create networks, share and manage (Brady 2005; Hasan and Pfaff 2006). For example linking between blog posts enables visible and public feedback, and the shaping of communities (Brady 2005). The benefits of the interactive tools lie also in the fact that they help employees to collaborate electronically by merging fragmented knowledge in the organization into more usable entities and easily accessible data (Hasan and Pfaff 2006).

Another ease of use, to take the example of blogs again, is the fact that they are informal and allow lapses in language, grammar and typographical errors (Ojala 2005). At the same time this forms a critical view of blogging, making anyone an expert, flattening the expertise, and undermining the basis of quality assurance (Brabazon 2006). The dynamic feature may also cause problems, being too dynamic and making the knowledge content unstable (Klamma, Cao and Spaniol 2007). There are also some important concerns against the use of wikis. There is a risk that the wiki will be edited in a destructive manner to include irrelevant or even misleading information. Here one encounters the same problems of quality assurance and reliability as mentioned above (Hasan and Pfaff 2006) and people tend to become more suspicious of the information found on the web (Schiltz, Truyen and Coppens 2007).

WEB 2.0 IN THE UNVERSITY CONTEXT

This article is focusing on Web 2.0 in university contexts. Universities can be described as highly knowledge intensive organizations, where it can be regarded crucial to innovatively collaborate across multiple knowledge communities. When it comes to Web 2.0 and its potentials in knowledge sharing and collaboration, little research has been conducted in the university context. As in other organizational settings, Web 2.0 techniques could offer several collaborative potentials for universities and the academic staff (Brown and Adler 2008; Widén-Wulff and Tötterman 2009). In the university setting, the potentials of web 2.0 have so far mostly been acknowledged in learning and education, in university libraries and as communication tools for university students (Charnigo and Barnett-Ellis 2007; Hartman, Dziuban and Brophy-Ellison 2007; Brown and Adler 2008; Eijkman 2008; Quan-Haase 2008).

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University students: the net generation

The contemporary university students have been described as the Net Generation, which is very adept in the us of Web 2.0 tools both for academic and recreational purposes (Hartman, Dziuban and Brophy-Ellison 2007; Quan-Haase 2008). University students have for a long time been regarded as early developers and adopters of different kinds of new communication technologies (Castells 2001; Quan-Haase 2008). One such example is the use of Instant Messaging, an interactive and instant form of online communication, among university students. In a literature review on university students' use of IM, it was noted that students generally tend to use IM as a catalyst for forming and maintaining their social networks (Quan-Haase 2008). It has also been highlighted that students expect universities to provide teaching and learning environments in line with the Web 2.0 philosophy (Hartman, Dziuban and Brophy-Ellison 2007).

Hall and Davidson (2007) have studied blogs as a tool to encourage interaction between students and found that blogs increased the reflective engagement with the teaching material and that there was also a higher level of shared peer support between class members. However, it is important to remember that simply importing informal Web 2.0 applications does not automatically lead to positive effects (Selwyn 2007).

Academic libraries and Library 2.0

In the university context, Web 2.0 techniques have also been recognized by academic libraries and librarians. In the library discourse, the subcategory Library 2.0 is mainly used. Library 2.0 is a term introduced by librarian Michael Casey in 2005 and it comprises user-centred change. It highlights a library environment which encourages constant change and user participation in the creation of physical and virtual library services (Casey and Savastinuk 2006; Widén-Wulff, Huvila and Holmberg 2008). It has been noted that libraries have already adopted several of the Web 2.0 tools to extend their missions of service, stewardship and access to information. Blogs are used to market new materials and resources, events and to share information. Instant Messaging is used as a mean of providing virtual reference services. Librarians use social networking sites, such as Facebook, to interact with students, answer questions and provide information about library services. Libraries are also offering Rich Site Summary (RSS) services, which offer users the ability to "subscribe" to catalogue additions and news from the library (Stephens and Collins 2007). All these features of Web 2.0 in libraries could be signs of a shift in academic libraries towards an open framework for library communication or hyperlinked library in line with a Library 2.0 philosophy of open and participatory library services (Stephens and Collins 2007).

Although Library 2.0 has been acknowledged by both librarians and researchers in library and information science (LIS), few actual studies have addressed Web 2.0 resources and their use in the university library context (Charnigo and Barnett-Ellis 2007). One exception is a study on university librarians' attitudes towards

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Facebook.com, an online social network site originally created for students in higher education. The survey studied 126 academic librarians in the United States and their perspective on Facebook. The study reveals that academic librarians are aware of Facebook. The most positive librarians thought that these kinds of social network sites form a virtual extension of the campus, fostering collegiate bonds and a social identity. Furthermore, it is quite clear that Facebook has blurred the line between academic and recreational activities in academic libraries (Charnigo and Barnett-Ellis 2007).

University teaching and learning 2.0: an epistemological shift

The accelerating awareness and use of Web 2.0 tools among university students and academic libraries has also been acknowledged in the writings on university teaching methods (Hartman, Dziuban and Brophy-Ellison 2007; Stephens and Collins 2007). For example, the self-directed and free Learning 2.0 program (http://plcmcl2-about.blogspot.com/), which can be used by university teaching staff in their teaching, was born out of the Library 2.0 and Web 2.0 discussions (Stephens and Collins 2007). Moreover, it has been suggested that Instant Messaging could become one important communication and tutoring tool between academic teachers and their students (Quan-Haase, 2008).

The implications web 2.0 could have on university teaching and learning (Learning 2.0) have been discussed in different kinds of settings (Alexander 2006; Craig 2007; Hartman, Dziuban and Brophy-Ellison 2007; Brown and Adler 2008; Eijkman 2008). Most of the discussions are about the change of focus in university teaching methods and attitudes towards learning, from a teaching-centered individualistic to a learning-centered participatory paradigm (Learning 2.0) (Buckley 2002; Hartman, Dziuban and Brophy-Ellison 2007; Brown and Adler 2008). In line with the Web 2.0 architecture of participation it has been stressed that Web 2.0 tools should be combined with a shift in epistemological attitude towards knowledge construction and learning among the university faculty (Brown and Adler 2008; Eijkman 2008). Many academic teachers and researchers are still involved in a traditional and foundational view of knowledge and learning or the so called Cartesian view of learning, which considers knowledge to be an objective entity which can mechanically be transferred from university researchers to other researchers or to students (Brown and Adler 2008; Eijkman 2008). According to Henk Eijkman (2008), this is a perspective which is suitable in the Web 1.0 discourse of information transfer but not in the Web 2.0 philosophy. Eijkman underlines the need for a non-foundational learning paradigm which assumes knowledge to be socially constructed and learning to be practice-focused rather than focused on transfer of second order knowledge. Web 2.0 offers new ways of connecting university researchers and students online in life-like collaborative knowledge construction as long as the participants' attitudes towards knowledge and learning are in line with the Web 2.0 architecture of participation (Eijkman 2008).

This way of addressing the potentials of Web 2.0 combined with a non-foundational view on knowledge construction could have implications not only for teaching attitudes

among university staff, but also in terms of the way research collaboration is conducted across various communities, groups, discourses and regimes in the academic context. However, so far little has empirically been said about the promises and challenges of Web 2.0 from the academic researcher's perspective (Hartman, Dziuban and Brophy-Ellison 2007). The following is an elaboration on the potentials and challenges of Web 2.0 in the university context from an organizational point of view and in terms of collaboration among university faculty.

DISCUSSION: HOW COULD WEB 2.0 BE UTILIZED TO A GREATER EXTENT IN UNIVERSITY CONTEXT?

Collaboration among university staff is very much about so called knowledge work; knowledge sharing and creating new knowledge. Knowledge work may be defined as using one's intellectual and social capital to create new knowledge (Cohen and Prusak 2001). One of the problems of knowledge work and knowledge management is the difficulty in encouraging people to share their tacit knowledge. This is where the social and interactive tools of Web 2.0 could bring some positive effects and support the sharing of expertise (Angeles 2003; Stover 2004). It is shown that the features of blogs and wikis, creating ideas, sharing knowledge, shaping communities and networks are found to be suitable support for many knowledge processes (Klamma, Cao and Spaniol 2007). The tools generate rich data that become richer as more people use them. Harnessing collective intelligence is reached through the user centered perspective, creating the so called long tail through customer self-service and developing user-friendly interfaces (O'Reilly 2005). The motives for using social software as knowledge sharing tools are the possibility of increasing one's own knowledge base, exploring one's thoughts, supporting and disproving one's own ideas. A new culture of voluntary, contributive, and collaborative participation is emerging (Brady 2005).

So, it can be concluded that there are many features in Web 2.0 supporting knowledge work which is an important part of the researcher's work. At the same time there is a need for a critical view and to resist adopting them to automatically solve collaborative issues. The fact that the expertise is flattened may undermine the basis of quality assurance as the knowledge content is constantly unstable. However, having said that Web 2.0 brings opportunities and that there is a need for a critical view, it is clear that it will have great effects on and implications for how we share and gather knowledge and also how we look at the scientific system. Earlier this was the remit of scientific institutions while we today believe increasingly the world is of our own making (Schiltz, Truyen and Coppens 2007). Through wikis and other open source techniques a new way of writing practice is emerging (Jones 2008).

A wikipedia article is a good example of the shift of scholarly communication. Jones (2008) underlines the fact that because a wikipedia article is constantly editable the text has no clear final stage or state. These articles exist in a state where they are

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continuously changing. The revision process also makes the development of a wiki text very difficult to follow. An article can be downloaded and revised offline, meaning there is no access to revision practices. This has also an implication as to how the quality is established. The level of experience of the editors is unknown, as well as the revision process. Still, open source collaboration seems to generate a good level of quality of knowledge. Wiki writing is often highlighted as a great example of collective intelligence. Wikis are not without writing rules and structures and it is important to learn more about these processes. It is of value for researchers to learn more about quality writing in different writing environments (Jones 2008).

How we write science will also change through the open access movement. Web 2.0 will encourage revision of traditional conceptions of what constitutes scientific information. Open access and open content means gaining access to knowledge when needed. Knowledge is constructed on demand (downloadable beliefs). Scholarly communication is no longer a linear and hierarchical process with the notion of cumulating knowledge but about circularity and evolution. Social software affects social knowledge while Web 2.0 tools enable group interaction, being simple to use and enabling groups to self organize (Schiltz, Truyen and Coppens 2007).

The most important features of Web 2.0 in connection to collaboration in the university context is the fact that Web 2.0 tools bring a high load of interactivity, participation, and user production into the research process. With open access added, this leads to a new way of maintaining scholarly communication, bringing the process to a wider discussion. From this perspective, there is an obvious benefit for collaboration in the universitycontext.

CONCLUSIONS

Web 2.0 in fact highlights one of the ideals in a learning organization: the free and open generation of information and knowledge in social interactions; a crossing point of users, social contexts and information systems. Web 2.0 is constructed out of a real use and need, based on the user's learning processes both offline and online. In contrast, earlier information systems initiatives in organizations, such as the managed intranets, were characterized by the organization's preferred and idealized view of itself, harming the free and democratic generation and capitalization of the organizational member's knowledge (Tredinnick 2006b). Additionally, the economic costs of implementing Web 2.0 tools are marginal since they are easy to use, and the scholarly communication process is flattened. This means the new information technologies will have far-reaching implications.

In this paper we have theorized on how Web 2.0 is used in universities and how Web 2.0 could be more utilized in the university context. We have noted that the potentials of Web 2.0 in universities have so far mostly been acknowledged in learning and education, in university libraries and as communication tools for university students. Overall, we argue that Web 2.0 could initiate a new way of scholarly communication and collaboration. In other words, we envision a change in the way university researchers view and enact knowledge sharing as a collaborative activity both offline and online. A view which is in line with the ideals of Web 2.0, Learning 2.0 as well as the practice-based perspective on knowledge management, focusing on knowledge creation as human collaborative actions in specific social contexts. This is an aspect of Web 2.0 and collaborative knowledge which we feel has been neglected in the research so far. The need for empirical studies is obvious and in the near future we aim at conducting empirical studies on the use of Web 2.0 as a collaborative tool among university staff.

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