



GLOBAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY
NETWORK, WEB & SECURITY

Volume 13 Issue 6 Version 1.0 Year 2013

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 0975-4172 & Print ISSN: 0975-4350

Social Media Tools on the Eve of E-Learning 3.0

By Prof. Anna Nedyalkova, Dr. Sc., Prof. Teodora Bakardjieva, Dr.
& Prof. Krassimir Nedyalkov, Dr.

Varna Free University, Bulgaria

Abstract - In the present paper, we'll explore how social media tools provide an opportunity for new developments of the e- Learning in the context of managing personal knowledge. There will be a discussion how social media tools provide a possibility for helping knowledge workers and students to gather, organize and manage their personal information as a part of the e-learning process. At the centre of this social software driven approach to e-learning environments are the challenges of personalization and collaboration. We'll share concepts of how organizations are using social media for e- Learning and believe that integration of these tools into traditional e-Learning is probably not a choice, but inevitability. Students' Survey of use of web technologies and social networking tools is presented. Newly developed framework for semantic blogging capable of organizing results relevant to user requirements is implemented at Varna Free University (VFU) to provide more effective navigation and search.

Keywords : *semantic blogging, social media tools, e-learning, web 2.0, web 3.0 .*

GJCST-E Classification : *C.2.m*



SOCIAL MEDIA TOOLS ON THE EVE OF E-LEARNING 3.0

Strictly as per the compliance and regulations of:



RESEARCH | DIVERSITY | ETHICS

Social Media Tools on the Eve of E-Learning 3.0

Prof. Anna Nedyalkova, Dr. Sc.^α, Prof. Teodora Bakardjieva, Dr.^σ & Prof. Krassimir Nedyalkov, Dr.^ρ

Abstract - In the present paper, we'll explore how social media tools provide an opportunity for new developments of the e-Learning in the context of managing personal knowledge. There will be a discussion how social media tools provide a possibility for helping knowledge workers and students to gather, organize and manage their personal information as a part of the e-learning process. At the centre of this social software driven approach to e-learning environments are the challenges of personalization and collaboration. We'll share concepts of how organizations are using social media for e-Learning and believe that integration of these tools into traditional e-Learning is probably not a choice, but inevitability. Students' Survey of use of web technologies and social networking tools is presented. Newly developed framework for semantic blogging capable of organizing results relevant to user requirements is implemented at Varna Free University (VFU) to provide more effective navigation and search.

Keywords : semantic blogging, social media tools, e-learning, web 2.0, web 3.0 .

I. INTRODUCTION

Social software supports active social networking processes and a community model to foster knowledge sharing and collaboration. Social media tools represent new repositories of information and knowledge for personal and organizational purposes. High quality contributions are assured not only by guidelines, but also by reputation and rating the contributions (Mott, 2010).

Web 2.0 (O'Reilly, 2005) or the Social Web has introduced new concepts and tools that are able to operationalise a more social-centric vision. This trend has appeared so relevant and so promising that many specialists consider this approach to be the future of knowledge management, hoping that these tools will contribute to realizing the challenge of managing knowledge (Kakizawa, 2007; McAfee, 2006). This perspective raises a number of questions related to the application of a vision that was born from the need to incorporate more of the social dimension (Nabeth et al., 2002) and to better fit the individual needs of knowledge workers (Razmerita, 2005). PKM on Web 2.0 is achieved by a set of tools that allow people to create, codify, organize and share knowledge, but also to socialize, extend personal networks, collaborate on organizing knowledge and create new knowledge (Jarcho & Downes, 2009). In this highly interconnected, dynamic world, new ways of cultivating and exploiting knowledge sharing with customers, suppliers and partners are forcing companies to expand their knowledge

management concepts and agendas (Mentzas et al., 2007).

Chatti et al. (2006, 2007) discuss the use of social software in learning environments. Open blogs and cloud platforms such as Facebook have great educational potential (Meyer, 2010).

Semantic blogging has recently been associated with a decentralised form of knowledge management (Cayzer, 2004, Breslin & Decker 2007) and is a technology that builds upon blogging and enriches blog items with metadata. Newly developed framework for semantic blogging capable of organizing results relevant to user requirement (Shakya, 2006) is implemented at Varna Free University (VFU) to provide more effective navigation and search.

II. BACKGROUND

Nowadays setting up an e-learning system is very easy. Almost anyone can now establish an online learning community using open source learning tools that comprise Web 2.0 features (Rogers, 2011). That's why it is possible for any organization to afford personalized online courses with a learning management system having advanced features to support mutual communication and collaboration. Production and delivery of e-learning programs are far easier with the arrival of Web 2.0.

Students get more tools and more encouragement to use these tools for learning, there is a possibility of creating 'personal learning environments', software interfaces that the learner can add to or edit, to facilitate their learning. These might include a portal to their courses that would include access to an LMS, but would also include links to their blog, e-portfolio, and social networks (Paul & Schofield, 2010). Online learning is increasingly appearing as strategic initiatives within institutional plans (Bates, 2013).

Open source LMS, such as Moodle, have an advantage here in that designers in universities with access to open source developers can build and integrate open source web 2.0 tools into the LMS quite easily.

The platform, developed and prototypical in use at Varna Free University, is based on concepts like social tagging and networking and therefore offers its users a new perspective of Web 2.0 driven learning (Nedyalkova and Bakardjieva, 2011).

There are numerous ways that faculties can use the Web 2.0 tools to enhance student's interaction in online learning. Incorporation of Web 2.0 tools such as

Author α σ ρ : Varna Free University, Bulgaria.

blogs and wikis into online and hybrid courses has the potential for improving student engagement in learning. As shown through examples from our teaching and from the literature, these tools can facilitate rich interaction among students, the faculties, and the online interaction, the cornerstone of effective online learning.

III. OBSERVATIONS AND DISCUSSIONS

Web 2.0 changes fundamentally the e-Learning experience. At a minimum, they encourage a level of sociability, sharing, and connection among learners we've not experienced before. Instead of inviting learners to be passive consumers of information, with interactions limited to those specified by the "learning professionals," social media tools empower learners to be much more actively involved in constructing their own

learning. Social media tools also provide learners with avenues for connecting with a much broader network of people as part of their learning experience.

Varna Free University (VFU) understands the power of social media and Eschool is our networking platform with more than 41,000 users. Like any other organization we use social media in our daily work processes. Whether blogs, wikis, and social networks are set up behind the firewall, or brought in through the internet cloud, these applications are finding their way into organization everywhere (Nedyalkova and Bakardjieva, 2011).

An inquiry was made among 257 MBA students at Varna Free University and as a result they had mainly positive reactions to the Web 2.0 technologies.

Response	Ease of Use	Enhanced Learning	Useful for Exam Prep	Fair Assessment of Students' Efforts
1 – Strongly Agree	18	18	25	22
2 – Agree	68	54	47	49
3 – Neutral	10	29	20	21
4 – Disagree	4	2	8	8
5 – Strongly Disagree	0	0	0	0

Table 1 : Students' Survey of use of Web 2.0 Technologies (MBA 325 - 65% Response Rate)

	Notebook or Netbook Computers	Smartphones	Ipads or Tablets	Social Networking Tools
Use	78%	62%	35 %	79%

Table 2 : Students' Survey of use of techniques and social networking tools

	Social Networks	Wikis, Blogs And Forums	Podcasts Or Video Podcasts	Shared Video Media (Youtube)
Use	85%	61%	42%	79%

Table 3 : Students' Survey of use of Web 2.0 technologies

These social media tools are used most often to find new information, connect with colleagues, and keep track of interesting people or topics. Seventy percent of survey respondents believe that their investment in Web 2.0 technologies is valuable.

	Web 1.0	Web 2.0*	Web 3.0**
Use	89%	82%	29%

Table 4 : Student Survey of use of Web technologies

* 82% say that they increased collaboration through Web 2.0 implementation. In terms of specific technologies being used, simulations, multi-player games, mobile learning and personalized learning portals were most popular. Most of the students believe that they can find what they are looking for on the first search, but personalized learning content is still not as prevalent as many would like it to be. Learning from multiple resources and having a learning history, publishing user content to university training sites, and focusing learning or IT resources on Web 3.0 still have a long way to go, with only about 30% of departments doing well.

** 72% of those surveyed see Web 3.0 as "the intelligent Web," which includes "the semantic Web" and natural language search. Location awareness and recommendation engines are also popularly believed to be part of Web 3.0. 61% feel that the biggest benefit from Web 3.0 is the ability to filter and personalize search results. The ability to interact with more types of Web content and search using natural language were seen as the second- and third biggest benefits. Web 3.0 adoption is dependent on the increasing use of video, on the importance of collaboration and cloud topologies. E-Learning 3.0 will happen when learners are better engaged for setting up their own blogs, wikis, and podcasts and for creating their own networks. Among the reasons given for this improvement are: wider use by employees, better collaboration, more personalized and flexible technology, the ability of learning to be embedded in work processes, and better support for mobile learning, as well as lowering costs.

	Web 3.0 is having a high impact on learning	Web 3.0 as real after 2015	Web 3.0-barriers: adoption of learning and workspace technologies	Web 3.0-barriers: security concerns	Web 3.0 - use of a virtual assistant
Students' claim	25%	90%	64%	36%	38%

Table 5 : Students' Survey of Web 3.0 technologies

A lot of students commented that Wiki was a useful tool and a good way to put a summary of the lecture content together in a way that all students could benefit. Others mentioned that it allowed them to carry on dialogue with varying view-points that offered a more holistic learning experience. There was dissatisfaction about the fact that it is hard to grade participation because often people post the same things. Pointing out the pedagogical benefits from the project we have to stress on the assessment. As seen in the survey results above, this is one area in which students were the least satisfied. Students were assessed on their participation in the Wiki. Any user can see who has made a contribution, the date and time of each contribution.

Another difficulty in integrating Wikis successfully comes from the switch to a student-centered approach. Using student-created Wikis as a major content source shifts the creation and ownership of knowledge base from the teacher to the student. The role of student in this Wiki project is that of primary content producer. The teacher's role changes to one of facilitating and correcting errors. As mentioned above, Wikis are quite straightforward, and Moodle has Wiki interface that resembles common word processing programs, so students may find it easy to use.

Other useful tools for publishing information such as research publications are semantic blogs where there is need of some structure and semantic blogging provides this. Items may be classified using ontologies. Semantic links may exist between items (Cayzer, 2004b). Semantic blogging uses desirable features of both blogging and the semantic web to deal with the challenges of traditional blogging. The semantic web is well suited for incrementally publishing structured and semantically rich information. On the other hand, the easy publishing nature of blogging can boost the semantic web by publishing enough data and resources (Cayzer 2004a; Cayzer, 2004b).

Semantic blogging can help users discover items of interest in blogs. Navigation through the blogosphere can be more flexible and meaningful due to interconnections among various items and topics. Aggregation of useful materials across multiple blogs and the semantic web is possible. Semantic blogging can extend blogging from simple diary browsing to informal knowledge management (Cayzer, 2004b). Publication is easy in semantic blogs too because only some additional metadata data have to be added

compared to traditional blogs. The users do not need to put any effort to enjoy the additional features provided. Hence, there is not much effort added in using a semantic blog instead of a conventional one. The rich metadata and semantic structure work behind to give the user the added value experience of semantic blogging. However, the semantic capabilities currently implemented for semantic blogging are still limited. It is difficult to obtain blog entries relevant to a topic in an aggregated and organized form.

Attempts for implementation of a framework for semantic blogging capable of organizing results relevant to user requirements are made at Varna Free University (VFU) to provide more effective search by exploring semantic relations in blogs.

The system is built upon a blogging infrastructure backed up by an RDF metadata store. The metadata schema enriches the blog entries input. The metadata schema also helps the query processor to search by metadata. Users input queries to the system according to their information requirement. The query processor searches for matching blog entries and instances in the ontology of the domain of application. Integrated with the ontology is the inference engine, which can deduce implicit relations from the ontology. All the blog entries related to the relevant ontology instances are obtained from the blogontology mapping. The total relevant blog entries obtained are finally organized into an aggregated and navigable collection by the organizer. The system also produces output in RSS format which computers can understand and aggregate.

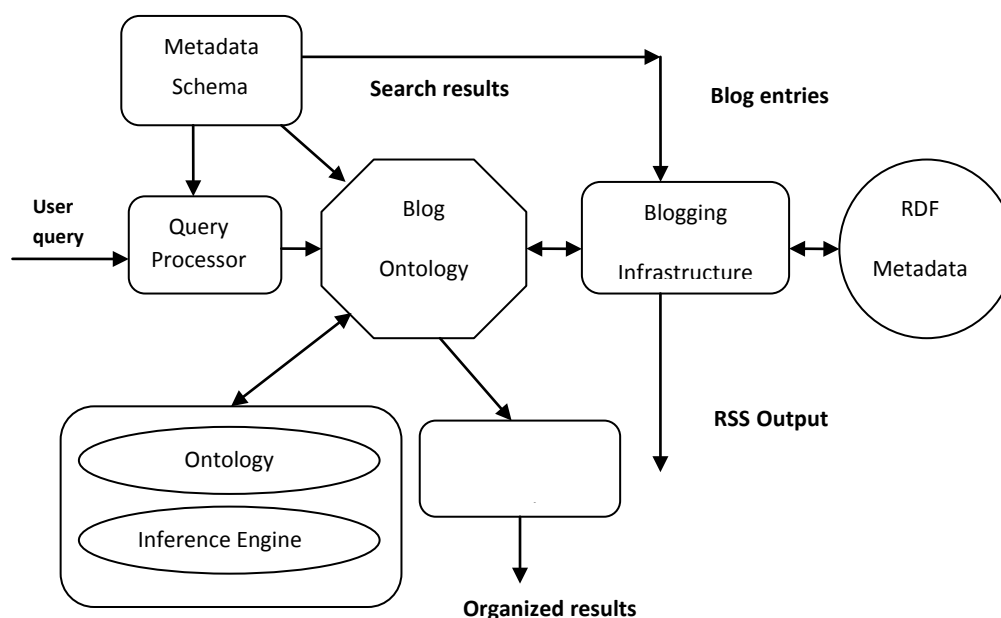


Figure 6 : System architecture of the semantic blogging framework

IV. CONCLUSIONS

Newly developed framework for semantic blogging capable of organizing results relevant to user requirements is implemented at Varna Free University (VFU) to provide more effective navigation and search by exploring semantic relations in blogs.

Ontology has been introduced to utilize semantic relations, enhanced by inference. Blog entries are mapped to the ontology using language processing. Search results are organized by introducing semantic aggregation. Blog entries are enriched by metadata and an annotation mechanism has also been developed. The framework has been tested and evaluated by implementing a system for the Institute of Technology domain ontology at VFU. Experiments have shown quite good results. Single sample ontology is created for demonstration.

The social software driven approach reflects the nature of learning and knowledge as being social, personal, distributed, flexible and dynamic. It represents a shift towards a more personalized, open and knowledge-pull model for learning. The platform, developed and prototypical in use at Varna Free University, is based on concepts like social tagging and networking and therefore offers its users a new perspective of Web 2.0 driven learning.

This paper suggests that social media tools provide an opportunity for new developments of the e-learning concept and discusses these new approaches developed with the objective of operationalising this social perspective in the context of managing personal knowledge. Web 2.0 enables a new model of e-learning that contributes to collective intelligence through formal

and informal communication, collaboration and social media tools. This new model facilitates virtual interaction, social processes, collaboration and knowledge exchanges on the web. A characteristic of such systems is the fact that they are open and designed to invite collaboration and to facilitate social interaction.

In blogs and wikis externalisation of personal knowledge is self-initiated. Furthermore, despite using social networking tools it is still difficult to find the right piece of information. Better search functionalities and sorted entries are an issue that needs to be addressed in further development. Semantic Web 3.0 technologies enhance Web 2.0 tools and their associated data with semantic annotations and semantic-enhanced knowledge representations, thus enabling a better automatic processing of data which in turn will lead to enhanced search mechanisms.

REFERENCES RÉFÉRENCES REFERENCIAS

1. Bates, T., 2013, Outlook for online learning in 2013: online learning comes of age <http://www.tonybates.ca/2013/01/06/outlook-for-online-learning-in-2013/> (Last visited March 2013).
2. Breslin, J.G, S. Decker (2007), "The Future of Social Networks on the Internet: The Need for Semantics", IEEE Internet Computing, vol. 11, no. 6, pp. 86-90 pp.
3. Cayzer, S. (2004a). Semantic blogging and decentralized knowledge management. Communications of the ACM, 47(12): 47-52. <http://portal.acm.org/citation.cfm?id=1035164&coll=GUIDE&dl=ACM&CFID=9229987&CFTOKEN=13649580&ret=1#Fulltext> (Last visited December 2012).

4. Cayzer, S. (2004b). Semantic Blogging: Spreading the Semantic Web Meme. <http://citeseer.ist.psu.edu/698724.html> (Last visited December 2012).
5. Chatti, M.A., Jarke, M. and Frosch-Wilke, D., (2007). The Future of e-Learning: a Shift to Knowledge Networking and Social Software, International Journal of Knowledge and Learning, IJKL, 3 (4), p. 404-420.
6. Chatti, M.A., Srirama, S., Kensche, D. & Cao, Y. (2006). Mobile web services for collaborative learning, Proceedings of the 4th International Workshop on Wireless, Mobile and Ubiquitous Technologies in Education (WMUTE 2006), 16–17 November, Athens, Greece.
7. Jarke H. and St. Downes (2009) Personal in Personal Knowledge Management <http://elearningtech.blogspot.com/2009/07/personal-in-personal-knowledge.html> (Last visited December 2012).
8. Kakizawa, Y. (2007), "In-house use of Web 2.0: Enterprise 2.0", NEC Technical Journal, Vol. 2 No. 2, pp. 46-49.
9. McAfee, A.P. (2006), "Enterprise 2.0: the dawn of emergent collaboration", MIT Sloan Management Review, Vol. 47 No. 3, pp. 1-28.
10. Mentzas, G., Kafentzis, K. and Georgolios, P. (2007), "Knowledge services on the Semantic Web", Communications of the ACM, Vol. 50 No. 10, pp. 53-8.
11. Meyer, M. (2010) Creating an Open Web 2.0 Cloud E-Learning Experience, 2010 Educause Annual Conference <http://www.educause.edu/E2010/program/SESS124> (Last visited November 2012).
12. Mott, J. (2010) Envisioning the post-LMS era: the Open Learning Network Educause Quarterly, Vol. 33, No. 1.
13. Nabeth, T., Angehrn, A. and Roda, C. (2002), "Towards personalized, socially aware and active knowledge management systems", in Stanford-Smith, B., Chiozza, E. and Edin, M. (Eds), Proceedings of E-business and E-work – Challenges and Achievements in E-business and E-work, Vol. 2, IOS Press, Amsterdam, pp. 884-91.
14. Nedyalkova, A. and Bakardjieva T. (2011) Web 2.0 Vision and Students' Learning Space, IADIS International Conference on International Higher Education IHE 2011, 8-10 December, Shanghai, China, Proceedings, edited by Heling Huai, Ji-ping Zhang, Piet Kommers and Pedro Isaias, pp. 89-94.
15. O'Reilly, T.: What Is Web 2.0. In Internet: http://www.oreillynet.com/pub/a_oreilly/tim/news/2005/09/30/what-is-web20.html (Last visited November 2012).
16. Paul, C. and Schofield, A. (2010) *e-Portfolios for teacher candidates* Vancouver BC: UBC Faculty of Education <http://ctl.ubc.ca/2009/09/22/e-portfolios-for-teacher-candidates/> (Last visited December 2012).
17. Razmerita, L. (2005), "Exploiting semantics and user modeling for enhanced use support", electronic version, Proceedings of HCI International 2005 Rogers, E. (2011) How Web 2.0 Is Influencing E-Learning <http://ezinearticles.com/?How-Web-2.0-Is-Influencing-E-Learning&id=5968742> (Last visited January 2013).
18. Shakya A.(2006), A Semantic Blogging Framework for better Utilization of Information, Thesis submitted in partial fulfillment of the requirements for the degree of Master of Engineering <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.115.7250&rep=rep1&type=pdf> (Last visited January 2013).





This page is intentionally left blank