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An E-learning Web 2.0 Experience

Michelle Pieri [a] *, Davide Diamantini [b]

[a]*Università degli Studi di Milano-Bicocca. Piazza dell'Ateneo Nuovo, 1, Milano 20126, Italy*
[b]*Università degli Studi di Milano-Bicocca. Piazza dell'Ateneo Nuovo, 1, Milano 20126, Italy*

Abstract

This contribution focuses on an experience of e-learning Web 2.0 realized at the University of Milano-Bicocca in the 2011-2012 Academic year. In this experience we used Thinktag Smart, a new e-learning Web 2.0 platform, to train 137 students of the University of Milano-Bicocca. All participants had done e-learning before and had an Internet connection in their homes. At the end of the experience we evaluated the platform used in the learning experience through an evaluative questionnaire given to the students who took part in the experience. After an introduction to Web 2.0 and e-learning Web 2.0, this paper will deal with this experience and its results.

Keywords: E-learning Web 2.0, Web 2.0, platform, university;

1. From Web 2.0 to E-learning 2.0

The information and communication technologies (ICTs), as several projects have revealed over the last few years at the worldwide level, have become an essential part of the learning experience for people of all ages. Currently possibilities for applications of the Web 2.0 in the learning environment are beginning to be explored.

The term Web 2.0 was created in 2004 by Tim O'Reilly and Dale Dougherty from O'Reilly Media, an American publisher specialized in publications concerning the new technologies and networks. The term Web 2.0 refers to the so-called second generation Internet services such as, for example, blogs, google (not only as a search engine, but also as an instrument for document sharing, googledoc, and to communicate, gmail), skype, facebook, flickr, youtube and wiki. The Web 2.0 is easy to use, such as social networking websites, wiki and communication instruments which emphasize collaboration and sharing among users. In fact, the Web 2.0, not only allows for content sharing, collaboration and communication among users, but also lets users, even those with little experience with ICTs, to produce contents. The use of Web 2.0 in learning environments allows all the actors involved (teachers and students) to actively participate in the learning process, giving them the possibility to generate and propose contents, to stimulate discussions and in general, to create real learning communities.

With the introduction of the ICTs in education, over the years many changes of extreme importance have taken place; before the teacher was the key figure for the student, starting from a rigid hierarchical teacher-student model

* Corresponding Author name. Michelle Pieri Michelle Pieri Tel: +23 434247139
E-mail address: michelle.pieri@unimib.it

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to one now in which the contribution of all participants, teacher and students is valued. This goes from a systematic order which is linear and sequential to a hypermediatic disorder, from the transmission of knowledge according to a behaviorist or cognitive model or the production of knowledge according to a constructivist model. On one hand, the individual has a more active role; on the other hand, the possibilities and the need to choose and personalize learning paths and experiences grow. Every individual with his personal characteristics tends more and more to construct a personal learning environment which interacts with an ever growing number of technologies and social networks. As has happened in the passage from the "traditional" face to face learning to distance learning, today the passage from "traditional" distance learning to that of "2.0" is beginning to take place. The introduction of the last generation of ICTs in education is tied, on one hand, to the characteristics of students today, the Net Gens (Howe and Strauss, 2003; Oblinger & Oblinger, 2005); while on the other hand, to the ever growing need for lifelong learning, which is available "every time and everywhere" for people who have already finished their formal education but who need to continuously update and increase their knowledge, abilities and competences. ICTs in lifelong learning, since their arrival in education, have played a fundamental role.

The term e-learning 2.0 (Karrer 2006a; 2006b) is a neologism for computer-supported collaborative learning (CSCL, Dillenbourg, 1999; Scardamalia & Bereiter, 1994; Stahl & Hesse, 2009) systems that emerged during the emergence of Web 2.0 (Downes, 2005). From an e-learning 2.0 viewpoint, conventional e-learning systems were based on instructional packets, which were delivered to students using assignments. Assignments were evaluated by the teacher. On the contrary, the new e-learning places increased emphasis on social learning and use of social software, such as wikis and virtual worlds (Redecker et al., 2009). E-learning 2.0, in opposition to e-learning systems not based on CSCL, undertakes that knowledge (as meaning and understanding) is socially constructed. Learning takes place through conversations about content and grounded interaction about actions and problems. Supporters of social learning claim that one of the best methods to learn something is to teach it to others. There is also an increased use of virtual classrooms as an online learning platform and classroom for a diverse set of education providers. In addition, as underlined by Dunlap and Lowenthal (2009), social networks have become an important part of e-learning 2.0 to virtual classroom environments. Social networks, now part of the everyday life of our students, have been used to foster online learning communities around subjects as different as test preparation and language education. Social networks have the potential for the communication and dissemination of information; for example all our students have a facebook profile, and most of them are always and everywhere connected to facebook through their mobile devices. Recently, just to take advantage of these capabilities, we have witnessed the spread of social e-learning. Within a social network users can share any type of file, comment, leave comments, create tags of people, objects or words and build large media groups. In education social networks allow teachers and students to build privileged learning environments because they favor the sharing and co-construction of meanings. Social networks are particularly suitable for the exchange of ideas, opinions, experiences, while facilitating informal interactions, connections and contacts between people. Thinktag Smart, the learning platform focus of this paper, was designed to aggregate the power of Web 2.0 with those of the social networks.

2. Our experience

This contribution focuses on an experience of e-learning Web 2.0 realized at the University of Milano-Bicocca. In the 2011-2012 academic year, from March 2012 to June 2012, we used Thinktag Smart (http://www.thinktag.it/?locale=en), a new e-learning Web 2.0 platform, created by the Goaling enterprise, to train 137 students of the University of Milano-Bicocca in two subjects "Tourism" and "Sociology of innovation". After the experience, we gave them a questionnaire to evaluate the learning experience and the learning platform. All participants had done e-learning before and had an Internet connection in their homes.

2.1. The tool

Thinktag Smart is a quick and simple way to archive, organize, link and discuss information such as websites, articles, documents, books, movies and music. This platform mixes the learning opportunities offered by the Web

2.0 with the learning opportunities offered by social networks. This platform is a tool to support users to combine the requirements of knowledge management and the opportunities of social networks to share, build and spread knowledge and information. Thinktag Smart is a place for sharing knowledge, comparing different kinds of knowledge and supporting collaborative work.

The main characteristic of Thinktag Smart is the “hipertinence” (Boccia Artieri, 2007). The hipertinence makes this platform different from social networks and search engines. The main social networks in fact, being directed to /focus on the relationship between people, do not have systems for structuring and organizing contents with one or a few materials, thus they are irrelevant with respect to our needs for managing information. The search engines are able to reconstruct the networks of citations, but they are nothing more than the result of mere algorithmic processing. In fact, the results we get from search engines like Google are the result of an algorithm that can attribute more importance to the more "linked" pages, which in this way acquire a high ranking.

The Thinktag Smart platform is able to aggregate the richness of the network with the social construction of meaning. This is possible because each resource present on the platform must be necessarily accompanied by at least a title and one or more tags. The network environment is in fact “hyper”, meaning that the amount of resources that can be identified through it is beyond our means of fruition/management. At the same time the net is approximate, uncoordinated and often irrelevant and brings to an "information overload". This indicates that the more information you have, the more information you must have in order to manage. To avoid “information overload” and “confusion”, every resource in the platform must have a title and one or more “tags”; the tags are carried by all the users. In Thinktag Smart the construction of meaning and the organization of resources is self-determined and bottom up.

As time goes by, the resource cumulates the tags of all users, this means that the more ideas exchanged on a subject the more tags we will have on that subject. This artifact is used by other social networks, and is named "tag cloud". The tag cloud is used to reconstruct a visual map of the tags used by users or the main tags used. In the tag cloud each tag is a link to the resources that use that word and appears in different sizes depending on the frequency of use, so the tags displayed in large characters are among the ones most used by users.

In addition to the standard tag cloud, Thinktag Smart has developed an innovative feature called “hipertinent tag cloud” that provides users with a graphical output that can display not only the occurrence of the different tags but also the relationships between the different tags. Starting from an initial tag (identified through the search engine or by clicking on a tag of a resource) the user gets a new cloud that shows (with different sizes) all the tags used by the users along with the initial tag. With the hipertinent tag cloud, it is possible to reconstruct the network of relationships emerging between the resources reported by users on a particular subject.

It is important to underline that the tag will not be made by leaders or by experts, but by all users. The construction of meaning and the organization of resources is then from below; it is self-determined and follows the bottom up logic. This is certainly a source of added value, in that it allows to read the same resource from different points of view, in this way knowledge is not flat, but is a prism.

The main elements of Thinktag Smart are:

- RESOURCES: any type of document or material produced by users or derived from the productivity of others, which users decide to share;
- SHELVES: containers can be used as a virtual file. The shelves allow to bring together a range of resources that are considered relevant or related to a unique concept. The shelf is born as individual/personal and only the person who created it can modify it and add content to it, even if everyone can see it.
- COLLECTIONS: follow the same logic of the shelf, but they are not personal but of the group, all members of the group can add and edit content.
- GROUPS: group of people, collaborative community with a common goal to work on. Administrators have the possibility to edit the group settings, manage members and in general to change several aspects of the group, the members however, participate in the "life of the group," but without having the possibility to handle it.

All in all, we can compare Thinktag Smart to a bottom-up process, where the initiatives, the materials, the creation of groups and the sharing of knowledge are derived from the spontaneous initiative of users surfing the web following their own personal interests. The main objective of this approach is to make explicit, and therefore more

accessible, the tacit and implicit knowledge that every user possesses has. The users sharing opinions and knowledge enrich their own personal baggage, automatically helping to enrich and update the knowledge of the network of users connected to them.
Thanks to the tags and the connections between resources, users can organize the knowledge collected, interpreting, refining and assembling it in an appropriate way for re-use. The platform instantly processes a map that graphically depicts the connections created between resources related to the same topic, in order to provide an overall clear and immediate picture of the network. The set of resources, with their labels, in this way become a dynamic and ever-changing system of relationships between objects.
With the use of tags we are witnessing a change in the classification of documents: the "taxonomies" (the so-called "folksonomies"): users can assign semantic labels to documents to facilitate classification and research. To assign labels users must put themselves in the shoes of others, thinking about the words that other people would use to find the resources connected to the specific topic.
Another important aspect of knowledge management is the ability to use the knowledge generated to create new knowledge. The premise of this activity is the internalization of exchanged knowledge, to take possession of new thought patterns that are applicable to daily and professional life. Even wikis support collaborative learning by allowing users to create shared documents so that everyone can intervene by modifying and adding parts quickly and easily. In conclusion, this kind of platform offers tools and opportunities for the kind of activities (school, work and personal) which require a broadening of perspectives in a social perspective. The users, by sharing and comparing, will evolve while enriching themselves (creating new knowledge) and others (sharing).

2.2. The evaluation questionnaire

At the end of the experience we evaluated this platform and the learning experience through an evaluative questionnaire given to the 137 students who took part in the experience. The structure of the questionnaire included:

- six multiple choice questions in which it was possible to assess certain features or functions of the platform, through a scale of ratings (from “not at all” to “really a lot”);
- a multiple choice question that indicated which functions were most commonly used;
- two open questions in which respondents were asked to report three strengths and weaknesses of the platform.

2.3. The results

In table 1 we report the answers given by participants to the first six questions.

Table 1. The evaluation of the platform by the users

	Not at all	**Not much**	**Enough**	**A lot**	**Really a lot**
Is the platform intuitive and organized in a functional way?	6%	26%	52%	16%	0%
Is the platform easy to use?	4%	32%	50%	12%	2%
Is the design immediate and does it clearly explain the features offered?	5%	31%	44%	19%	1%
Are download and upload easy?	4%	12%	50%	31%	2%
Is the interaction with other participants easy?	4%	33%	40%	22%	1%
Has the platform met my expectations?	13%	31%	47%	7%	1%

Concerning the most used functions of the platform, the mainly used ones were : resources, shelves and groups. The resources were reported by almost all students (93%), while 71% and 55% claimed to use groups, respectively, and the shelves. From the data it also appeared, on the contrary , as the other functions (wiki, collections and chat) proved almost unused. In particular, only eight students stated that they made use of the "wiki", which allows collaborative writing among users who access the document.

For what concerned the strengths of Thinktag Smart, the answers given by the respondents identified several strengths, such as:

- the resources, or the ability to exchange and share information with users of Thinktag Smart. Resources (available in several formats: word documents, links, ...) were publishable by anyone and were an effective way of sharing information and generating knowledge.
- support to teaching, the portal was open for sharing notes and materials related to their courses, and the comments were a useful moment for the clarification of uncertainties. In general, it was emphasized that the interaction between students generated collaboration and social learning.
- interactivity, the platform was a good tool for the exchange, sharing and active participation of users.

Among the weaknesses the users reported:

- the slowness in loading pages and the frequent blocks.
- the unclearness, the lack of immediacy and intuitiveness. Many students experienced difficulty in understanding the organization of the platform, or found it too complex and dispersive for what concerned the materials. The materials, as well as the comments, were hard to recover when some time had gone by since their publication.

3. Conclusions

In conclusion, the Thinktag Smart platform was generally appreciated as a tool for the sharing and exchange of information and materials, and for its potential as a tool for supporting teaching. However, its complexity and disorganization, together with technical problems, did not allow for the complete satisfaction of the users. It emerged from the questionnaire that the platform was a tool of great potential, but to be competitive with the other web 2.0 realities would require some improvements.

References

Boccia Artieri, G. (2007). *The tag is the message: una intervista a Derrick de Kerckhove*. Retrieved from http://mediamondo.wordpress.com/2007/05/18/the-tag-is-the-message-una-intervista-a-derrick-de-kerckhove-1/

Dillenbourg, P. (1999) «What do you mean by collaborative learning?», in P. Dillenbourg (ed.), *Collaborative-learning: Cognitive and Computational Approaches*. (pp.1-19). Oxford: Elsevier.

Downes, S. (2005). E-learning 2.0. ACM eLearn Magazine. Retrieve from http://elearnmag.acm.org/featured.cfm?aid=1104968

Dunlap, J. & Lowenthal, P., 2009, "Tweeting the Night Away: Using Twitter to Enhance Social Presence", *Journal of Information Systems Education*, 20(2), Retrieve from http://www.patricklowenthal.com/publications/Using_Twitter_to_Enhance_Social_Presence.pdf.

Karrer, T. (2006a, February 10). *eLearning 2.0*. Retrieved from http://elearningtech.blogspot.com/2006/02/what-is-elearning-20.html

Karrer, T. (2006b, February 14). *eLearning 2.0: Informal learning, communities, bottom-up vs. top-down*. Retrieved from http://elearningtech.blogspot.com/2006/02/elearning-20-informal-learning.html

Howe, N., & Strauss, W. (2003). *Millennials Go to College: Strategies for a New Generation on Campus*. Washington: AACRAO and Life Course Associates.

Oblinger, D. G. & Oblinger, J. L (Ed.) (2005). *Educating the Net Generation*. Washington: EDUCAUSE. Retrieved from: http://www.educause.edu/books/educatingthenetgen/5989.

Redecker, C., Ala-Mutka, K. & Punie, Y. (2008). *Learning 2.0 - The Impact of Social Media on Learning in Europe.* Seville: IPTS. Retrieved from http://groups.etwinning.net/c/document_library/get_file?p_l_id=13808&folderId=32348&name=DLFE-752.pdf

Scardamalia, M., & Bereiter, C. (1994), «Computer support for knowledge building communities», The Journal of the Learning Sciences, 3(3), pp. 265-283.

Stahl, G., & Hesse, F. (2009), «Practice perspectives in CSCL», *International Journal of Computer Supported Collaborative Learning*, 4(2), pp. 109-114.