Lifelong learning: what role for e-learning 2.0?

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Abstract

In the few last years, attention has increasingly been focused on lifelong learning, also in relation to the great expansion of the Internet, in which the so-called "Web 2.0 has recently begun its evolution.
In this paper, we wonder about the role that the so called "e-learning 2.0" might have in supporting lifelong learning.
In the first part, we present a summary of the main features of the "2.0 world". In the second, we propose some limits or e-learning 2.0 against a hypothetical lifelong learning scenario.

1 The web 2.0 world

The term web 2.0 was first proposed in 2004, during the Web 2.0 conference, in San Francisco by O'Reilly and MediaLive International (O'Reilly, 2005). In O'Reilly's vision, Web 2.0 is a sort of Renaissance of the Net, following the initial stage in which the web was very similar to a traditional medium, with the typical asymmetry between users and specialists. In web 2.0 there is a new way to create and share resources on the net. We can briefly identify four main components: (i) the moving of applications and data from the desktop to the web; (ii) growth in the sharing of user-created resources; (iii) new ways to search and classify information and resources; and (iv) the development of social networking systems.

Two technologies that are involved in the last three aspects are tagging and syndication. Tagging is the opportunity to freely add labels to digital resources using one's own terminology; this is the exact opposite of the formal classification methods. Syndication is the use of information distribution services offered by the RSS and Atom technologies: these are systems for content distribution and are able to notify updates from any web site. Once the information sources have been selected, the desired contents will automatically reach the user via his preferred application, without visiting the specific web sites or explicitly searching for updates.

Following from the web and web 2.0, the 2.0 suffix has then been used also for e-learning. The term e-learning 2.0 was coined by Stephen Downes (2004) who basically criticized the traditional vision of e-learning, grounded on the transmission of the knowledge paradigm, LMSs and Learning Objects: learning is now considered as a conversation, storytelling, and sharing; it takes place on the Web global space, without the restrictions imposed by the so-called walled garden and the LMSs, seen as digital versions of the closed learning environment (on e-learning 2.0 see also Je-lks, 2, 2007). Learning in the net also needs specific theoretical grounding; the Connectivism learning theory has recently been proposed (Siemens, 2004, some critical annotations on the communication by Calvani in this issue) to explain how learning could take place in a networked world.

2 Virtual communities

A good starting point for understanding how the web 2.0 began can be found in the need for socialization that people usually feel whenever they connect to each other through the net forming communities.

The aggregation of people in communities or discussion groups focused on specific themes dates back to the pre-Internet BBS. Moreover, online communities have been well studied from a sociological point of view since the nineties (Rheingold, 1994; in this issue Colazzo *et al*., par. 2 e 3).

It is interesting to investigate what is changing in virtual communities since the rise of web 2.0. There are of course technological differences: for example synchronous communication is increasing, thanks to Instant Messaging Systems. In some cases communications are mediated by avatars and take place in 2D and 3D virtual worlds (e.g. SecondLife).

More significant differences are related to the very nature of the communities: Traditional online communities grew usually around discussions on very specific topics; now people meet online to share files and resources. It is the implicit community agreement, the *societas*, that is changed: people relate to each other as authors engaged in the personal construction of knowledge. This knowledge is, at the same time, shared. People start working from a private space allowing others to view their activities, comment and acquire knowledge; relations are negotiated in a complex framework of arguments, aware of being part of a "shared web".

3 Social networking

Social networking is perhaps the most specific trait of the 2.0 world. The term "social network" is referred in general to a network of people connected by one or more relations. It is the technologies that make these relations explicit: in the real life world is not easy (in some case, it is not possible) to perceive the networks of connections and friendships that bind other people we know: this become possible in the net. One of the first social networking services available through the Internet was Classmates, which started in 1995 with the aim of finding ex-classmates. A dramatic increase in the social networking services took place after 2001, when sites such as Friendster, MySpace, LinkedIn e Facebook started to grow.

Even if the social networking phenomenon is nowadays quite complex, we can distinguish two main areas:
• the professional area, with communities of colleagues and thematic communities (somehow grounded in the communities of practice by Wenger (1998);
• the leisure area, i.e., personal relations for friendship or romantic.
• technologies for social networking are usually not very innovative. The main elements on which almost all these services are based are:
• the profile. Each user is encouraged to enter as much self-describing information as possible. Starting with common personal data and e-mail address, and going on to interests, hobbies, passions and preferences in the case of leisure communities, or else with a detailed CV, for professional communities;
• the network of contacts (often called "friends"). Each participant is also represented first and foremost by his/her contacts. The network is built gradually, usually starting from real friends and colleagues, inviting them to recursively invite other people.

4 Lifelong learning: what scenarios?

Here we are trying to reflect on Lifelong learning and a possible role for it in the 2.0 world. This is a complex topic that will probably be revisited in the future. It appears reasonable that each model of Lifelong learning should take into account some main factors, including:

• the complexity and the variety of the types of knowledge involved. While some type of knowledge and some competences are easy to formalize, i.e. to explain in terms of explicit knowledge suitable for linguistic, graphical, mathematical knowledge and ability, most professional expertise is still difficult to make explicit and can only be developed in a real, situated, context. It is necessary to better identify the levels and typologies of competences to be acquired;

• the dimension of self-directed learning. Each model of lifelong learning should take account of motivational, emotional, personal components that are also related to the active and full, conscious involvement of the individual. Any solution that intends to manage the learning process only with entirely formal initiatives is likely to turn out as partial, less sustainable in the long run;

• the dimension of informal learning (in the sense of casual, spontaneous learning). Each model of lifelong learning should take account of different situations: not only finalized formal instruction but also daily life in which, especially when stimulating contexts are possible, become easier to find in various, also unexpected, learning suggestions;

• multiple dimensions of the technological solutions. Lifelong learning will not be based on a unique technological direction: it is reasonable to think of an integration of traditional presence teaching, formal and informal e-learning. The relative weight of the different typologies will depend mostly on the typologies of the learnings involved. An integrated model is represented in figure 1.

The graph shows three levels related to the three main typologies: informal e-learning, formal e-learning and presence teaching and learning. Informal e-learning (that is associated with the web 2.0 world) provides the base fabric; it allows an informal network of contacts to feed, to maintain the sense of belonging to the competence domain, to search for similar and complementary competences, and to enforce the connections with the professional communities. It is integrated with live events, eventual access to Open resources or to specific formal e-learning courses (modules, entire courses, LO). Finally, more occasional presence meetings (conferences, workshop or bar camps) can be organized by institutions that are responsible for continuous learning.
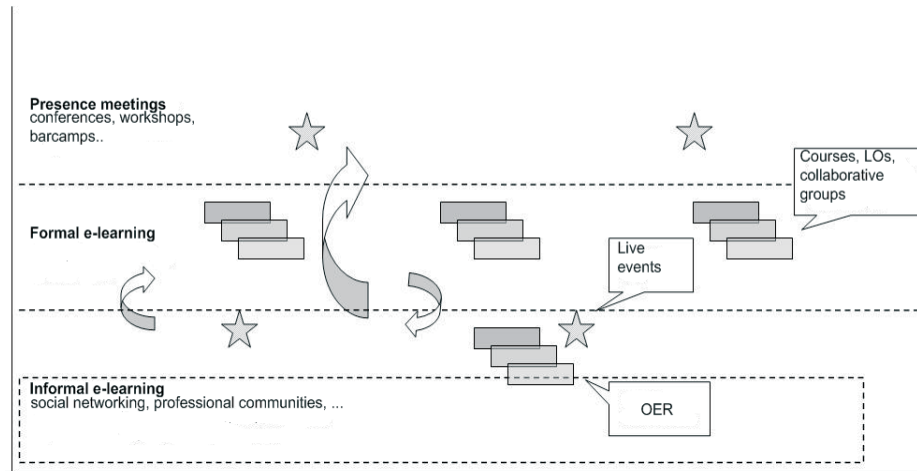
Fig. 1: lifelong learning as an integrated, multi-level process. Stars refer to instantaneous events, rectangles represent more long-lasting actions.

5 E-learning and e-learning 2.0: a critical examination

There are some more distinctions about the possible types of application involved in e-learning and e-learning 2.0 methodologies.

The rise of new technologies often arouses enthusiasm and trends that can easily lead to the overestimation of their capabilities. Currently, it is naive to think that any type of e-learning might represent a *silver bullet* for lifelong learning: it is certainly an important component, although it might not be the only one.

An initial reflection about the capabilities of e-learning, in general, leads us to stress at least two structural points of weakness:

• the digital divide. The diffusion of these technologies raises digital divide issues, i.e., problems that are dividing people who are effectively able to access digital technologies, and those who are not (Rifkin, 2000);

• training and learning based on formal communication. As mentioned above, the only part of learning that can be represented with formal communication (linguistic or multimedial) – i.e., the only one possible on the net - is only the tip of the iceberg of learning for a number of professions; let us think to learning situations that imply complex manual skills or non-linguistic communication (e.g., occupations such as wine expert or psychotherapist).

Considering e-learning 2.0, in general, it is reasonable to think that it could represent one of the main components of the outlined framework; it could con-

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tribute to making a richer *humus* for more specific learning and activities.

One needs to better know the specificities that make e-learning 2.0 effective or less useful. These reflections are based on an experience with a community of expert e-learning.

One of the assumptions for e-learning 2.0 communities is that learning processes can emerge as serendipity from interactions. However, this is likely to produce some redundancy, insignificance, and inconclusiveness. Chances to obtain useful advantages could improve if we were to take account of some other factors and conditions. Our reflections extend to four areas (Users, Domain, Community, Technology), showing for each, both positive conditions and unresolved weaknesses:.

Users

Could the e-learning 2.0 experience fit any user's condition? For the moment, it seems that some limitations exist, as regards:
• technological skills. E-learning 2.0 is still a practice suitable for people with specific technology inclination, also due to the rapid change in these technologies, as well as to the need for rapid self-adaptation to them; in this way usability issues also become important (cfr. Rigutti *et al*. in this issue);
• inclinaton to authoring and a high meta-cognitive level. According to the spirit of web 2.0, it is important for individuals to have high motivation and good self-management skills since most of the learning is self-knowledge;
• expertise level. E-learning 2.0 is mostly based on peer-to-peer learning; as any other environment-based on collaboration, the principle remains valid as regards people that interact: the more expert they are, the better the chances that interactions are mutually profitable.

Domain

Are e-learning 2.0 communities conditioned by constraints related to the domain or professional area?

Grounding on the analyzed experience, we can propose some useful suggestions related to domains. These are:
• easily recognizable but also internally heterogeneous and open. Good performance can happen near the boundaries of the domain and in cross-domain spaces. Competences should be oriented to possible integration and complementariness, and also to the development of new competences;
• oriented to projects and innovation. There is an advantage for domains in which new speculations and projects are more likely to emerge;
• marked by a low level of confidentiality and limitation to the diffusion of

information. The antagonism level should be relatively low; thus, communities and professional sectors that are characterized by high competitiveness or secrecy would remain excluded.

Community and organization
Are e-learning 2.0 communities conditioned by constraints related to the structure and the nature of the community?
We speculate, at this point in time, that there are some open issues:
• presence of an institutional link. This seems useful (even if not indispensable): some type of institutional link to guarantee a good level of trust and to maintain a high-level of attention among participants, with few animators who are consistently involved;
• opportunity for conversion from informal activities to formal. The presence of ways to achieve accreditation for some types of informal activities by formal educational institutions seems highly importance;
• sufficient dimension. The communities must be large enough to enable serendipity processes, useful sharing and significant interactions. This appears to be difficult below a minimum number of participants, around 400-500 people (considering that active users are estimated to be 1/10 or less[1]);
• turning points in professional path. A special role could be related to specific transition phases (leaving an institution, start of career, etc.).

Technology
Are there constraints (criticalities and opportunities) related to technology itself?
The main problem with technology is that, on the one hand, ever more sophisticated tools are required, while, on the other hand, there are ever increasing usability issues.
E-learning 2.0 designers should take more account of the fact that interfaces are still not very user-friendly and that the level of wastefulness, noise, futility, is still too high.
Some enhancements still need to be attained, especially:
• matching systems. The chance to find resources and partners for learning and collaborative activities should be enhanced (e.g., through scaling, availability evaluation systems, open calls, etc.). These aspects should also include the capability of the communities to self-generate projects and collaborative workgroups;
• semantic network. So far, this is primarily represented as a suggestive

[1] According to research by Nielsen (2006), the ratio between readers and authors in Web 2.0, there is a 1-9-90 rule, whereby only a 1% of users are active authors, 9% occasional authors and 90% only read.

nebulas like tag-clouds. It should be translated into synthesis reports of the knowledge-capital produced by the community, conceptual maps or textual and complex hyper-textual formats;
• evaluation systems. They should be enhanced to better understand the weight assigned by the community to specific themes, or to share certain points of view.

6 Conclusion

In this paper, we have questioned the way the 2.0 world should/would contribute to future models of Lifelong learning. Our hypothesis is that the future of lifelong learning should be based on an integration of formal, non-formal and informal e-learning combined with F2F learning. We also believe that a number of institutions should be in charge of the organization of such integration. The quality of the solutions depends on the professional types, and on the nature of the competences to be developed.

Informal e-learning, which is rooted in the Web 2.0 world, can offer a rich *humus* for motivation, relationship and scaffolding, since it is able to self-propel over reasonably long periods, starting with the initial professional experiences and strengthening self identity in various professional fields.

However, there are some constraints that limit this solution. Most opportunities are geared to professional communities that are intrinsically open to technological innovation, exploration, serendipity, knowledge-sharing, and which are able to self-manage their learning paths.

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