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Università Politecnica delle Marche

Extended summary

Web-based Grassroots Initiatives for Learning and Knowledge Enhancement: Authentic Engagement through Social Media

Curriculum: e-Learning

Author
Laura Carletti

Tutor

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Abstract The recent emergence of social software has blurred the line between producers and consumers of content and has shifted attention from the access to information toward access to people. Social applications have amplified the possibilities to meet individuals with common interest, ideas, values, practices. The rapid and pervasive uptake of social software happened very much under the radar, surprising the majority, especially in learning and education research. Initiatives were promoted to channel the energy of social software into education, but the results varied and suggested the need for a better understanding both of learning and of the social Web. The Web is providing countless possibilities for informal learning, which are successfully engaging a vast public, and niche communities are proliferating within the 'Long Tail' effect. Why are those spontaneous initiatives succeeding in employing social software for learning and knowledge enhancement? To address this question, this research investigates web-based grassroots initiatives, which are benefiting from social software for learning and knowledge development.

Keywords. Informal Learning, Online Communities, Social Software, Technology Enhanced Learning.

1 Problem statement and objectives

The increasing pervasiveness of technology in the past twenty years and the rapid development of social tools in the past ten years have been leading, on one side, to heavy investments in technology by the education institutions and, on the other side, to the overall rethinking of the contexts for teaching and learning. Nonetheless the intersection between formal education and technology still appears as a 'love-hate relationship', indeed "information technologies pose direct challenges to how schooling operationalises learning. These challenges illustrate deep incompatibilities between school and the new technologies" (Collins & Halverson, 2010, p. 19).

The rationale behind this phenomenon possibly accrues from the projection and application of the traditional educational approach on the use of new technologies. In the management and development of e-education, a shift is needed from the Cartesian view of knowledge as a kind of substance transferable from the teacher to the students to a social learning perspective (Seely Brown & Adler, 2008). The 'promise' of the education opportunities expansion, displayed by the web (especially by the social Web), could potentially lead to a failure, if the education system delays to recognise the role and the assets of technologies. Conole (2010) argues that the gap between the potential and the actual use of technologies to support learning may be caused by a lack of understanding of the properties of the new technologies.

Many initiatives were launched in the attempt to channel the energy of social software into education, but the results varied and suggested the need for a better understanding both of learning and of the social Web (Ravencroft, 2009).

Whilst this gap is reported in education studies, spontaneous online communities and groupings show to be at ease in the electronic space. Self-directed informal partnerships, enhancing learning and knowledge sharing, are exponentially increasing in the web.

Hence, this research aims to investigate web-based grassroots initiatives (bottom-up and non-organisation-driven), which benefit from a set of social software to enhance learning and knowledge. In order to understand what makes those settings work, this study addresses the following research questions:

- What are the factors determining active engagement in web-based spontaneous configurations?
- What is the function of social media for self-organised learning and knowledge enhancement?

- What can we learn from grassroots initiatives in order to design better ways to facilitate active engagement?

2 Research planning and activities

To address those questions, a case-studies research was carried out. Ethnography is understanding social phenomena in their natural occurring environments, so it was the method deemed appropriate to explore online social configurations.

Case-studies were selected on the basis of the following criteria: The initiatives had to originate in the web; The social configuration process had to be spontaneous and developed outside organisation boundaries; The groupings had to exist primarily or solely online; The participants had not to belong to a same organisation; The social formations had to be based in several web environments; The Social software had to be the web environment of those groupings.

Two initiatives were selected: WEBM.org community and Ghostsigns project.

WEBM.org is an online community comprising over twenty paediatricians from several Italian areas. It was launched in 2005 with the aim to assure the professional development of the participants through a regular exchange of practice. The Ghostsigns project is an initiative aiming to photograph research and archive the remaining examples of hand painted wall advertising in the United Kingdom and Ireland.

Three dimensions were identified to guide the investigation: Digital Engagement; Knowledge Construction; Socio-Technological Ecosystem.

Digital Engagement

Motivations to create and to take part in web-based grassroots initiatives are still an under-explored territory. Most of the works on motivational factors highlight the distinction between intrinsic and extrinsic motivations. Intrinsically motivated activities are defined as those that individuals find interesting and would do in the absence of operationally separable consequences. Intrinsic motivation concerns active engagement with tasks that people find interesting and that, in turn, promote growth. When extrinsically motivated, people behave in a manner that attains a desired consequence such as tangible rewards or to avoid a threatened punishment (Ryan & Deci, 2000). Thus, motivational factors were explored through this lens.

Knowledge Construction

Any discussion about knowledge construction has to begin with the explanation of what is intended for knowledge in this context. A main distinction has to be done between propositional and procedural knowledge. Propositional knowledge is knowledge of facts (know that), as opposed to procedural knowledge as knowledge of how (know how). Eraut (2000) provides two parallel definition: codified knowledge (corresponding to propositional knowledge), and personal knowledge, which is the "cognitive resource which a person brings to a situation that enables them to think and perform" (p. 114). Personal knowledge includes: Codified knowledge in its personalised form; Know-how in the form of skills and practices; Personal understandings of people and situations; Accumulated memories of cases and episodic events; Other aspects of personal expertise, practical wisdom and tacit knowledge; Self-knowledge, attitudes, values and emotions (Eraut, 2010). Learning is the process whereby knowledge is acquired or existing knowledge is reconfigured in new combinations or contexts. In this work, the 'knowledge construction' dimension incorporates both learning process (construction) and the knowledge acquired.

Socio-Technological Ecosystem.

The relation between social and technological aspects is central in this research. Communities and aggregations, which originate in the web, are the object of the study. Hence, this dimension is investigated to elicit the potential interdependencies between the human and the material. A dichotomy emerges in literature: technology as a mean, a facility, a tool to interact in and with the social world; technology as a constituent element of the social world. The former perspective tends to emphasise the neutrality of the technology; whereas the latter recognises the influence of technology. Information and Communication Technologies seem to pose new questions and to challenge especially the 'neutrality' perspective. The investigation was carried out on 'socio-technological ecosystem', as environment consisting of interacting living (society) and nonliving (technology) elements.

The research was firstly carried out through observation of the interactions in the public electronic spaces (e.g. Facebook, Blog). Beyond observation, other online methods were adopted for data collection: focus group; semi-structured interviews; surveys.

3 Analysis and discussion of main results

Data collected were analysed under the three dimensions. Findings show that engagement seems to be mainly determined by intrinsic motivations, as similar research postulates (Holley, 2010; Oomen & Aroyo, 2011).

The question of social formations in the web is: why do individuals not knowing each other meet and shape informal groupings? McMillan and Chavis (1986, p. 19) observe that "layering of communities [and aggregations] is very much part of modern life, in which multiple affiliation are based both on territoriality and tradition (neighbourhood, city, state, nation) and on what Durkheim called 'organic solidarity' (e.g. interest, profession, religion)".

'Organic solidarity' represents the positive interdependence among individuals in the industrial society which, in Durkheim's view, develops communities around interests and skills more than around locality (McMillan & Chavis, 1986).

Interest is a personal factor, which can motivate individuals to meet likeminded individuals. Affinity is a collective factor, which can occur only in presence of two or more people. It represents the encounter of commonalities between two or more people (e.g. interests, ideas, values).

The findings of this study advocate that the search of kinship is the spur for initial involvement and the 'conjunction' with kinships is the driver for durable engagement.

Convergence of domains of interest, practices, endeavours, values, produces the meeting of individuals who do not know each other and the formation of either digital communities (small/medium-scale groups; with boundaries, rules of participation) or digital aggregations (medium/large-scale groups; without boundaries, rules of participation).

The encounter of affinities (in its broad meaning) can ensure durable engagement, but it is not sufficient to guarantee the functioning of the community or aggregation. In order to shape a community or an aggregation, the participants have to commit in a common action for a common purpose. In other words, their affinities have to be channelled into an undertaking (in its double meaning of commitment and work/piece of work) with a clear objective.

Both WEBM.org community and Ghostsigns project declare overtly the purpose of the initiative and the related undertaking, which is compulsory in WEBM.org community (all the members are demanded to participate and contribute actively) and is discretionary in Ghostsigns aggregation (people are invited to contribute). That is where authenticity arises.

In learning research, the use of the term 'authentic' is quite open to interpretation: activities based on real situations; models that focus on applying conceptual knowledge or skills (e.g. critical thinking or problem solving); inventive and realistic tasks that provides opportunities for complex collaborative activities (Herrington et al., 2003 and 2010).

Connoting a sort of simulated authenticity, however, those interpretations may appear an oxymoron. The tasks, that WEBM.org members and Ghostsigns project contributors are called to undertake, have 'real-life' significance: a better professional performance or the digital preservation of ephemeral artefacts. The objectives are authentic, as well as the activities needed to achieve them. Authenticity is the quality of being real or true, and it cannot be simulated. Authentic engagement is, therefore, engagement enacted by a real purpose and a real commitment, having a real impact.

Furthermore, both WEBM.org and Ghostsigns project use social software authentically. It means that the tools are employed to perform the activities needed to attain the purpose. It may be obvious although, in learning design, technology is often adopted for its own sake (Kirshner et al., 2004) in an effort to replicate external practices (e.g. working practices), rather than to cultivate inner practice of the education systems and focus on them.

This authentic relation with the Web may be more natural for Digital Natives (those who were born into the digital world), than for Digital Immigrants (those who were born before the 'digital revolution'; Prensky, 2001). Nonetheless, it can be acquired and metabolised, as it seems to arise from this study, at the extent that a distinction between Digital Native Communities/Aggregations and Digital Immigrant Communities/Aggregations was proposed (Table 1). This aspect though needs to be further investigated.

Table 11. Characteristics of the Digital Native and Immigrant Communities

DIGITAL NATIVE COMMUNITY	DIGITAL IMMIGRANT COMMUNITY
Originates in the Web	Originates in 'real' settings
Exists primarily/solely online	Exists primarily offline
Can be organisation or independently driven	Is usually (or solely) organisation driven
Shows technological curiosity, confidence, and familiarity	Shows a complex relation with technologies
The Human and the Technological are intertwined since the origin	The Technological is additional and subsequent to the Human

Both WEBM.org and Ghostsigns project originate as process to seek needed knowledge, but they go further in co-constructing needed knowledge which could not be found. WEBM.org is the context to co-create the knowledge that the members need for their professional improvement and to face critical situations. Ghostsigns project is the context to co-create knowledge on fading artefacts.

Eraut (1985) argues that knowledge use and knowledge creation cannot be easily separated. New knowledge can be invented and developed by professionals in practice in solving 'real-

life' problems. Procedural knowledge is often too particularistic and practitioners are not used to endeavour in knowledge generalisation. "Moreover, communication between practitioners is such that only a small proportion of newly created knowledge gets diffused or disseminated. Thus there is no cumulative development of knowledge over time", Eraut observes in 1985 (p. 130).

Nevertheless, new technologies and social media are significantly contributing to the emergence of procedural knowledge. Procedural knowledge is more visible, since professional exchanges of information occur not exclusively in face-to-face meeting or in front of the coffee machine, but also through emails, forums, social networks. Possibly, the effort of translating information into a written text does positively affect also reflections.

'Unofficial' knowledge creation always existed, but is now amplified by the affordances of current technologies. "Universities will remain, and rightly so, as powerful nodes for the generation, accumulation and evaluation of knowledge. But to look just to them is to miss the full intellectual capital of which they are only part – the immense world of active players beyond the walls not just in industry, commerce, government or think tanks, but in homes, in charities, in associations large and small, in informal groupings, and networks, and through the whole spectrum of amateur and independent researchers" (Finnegan, 2005, p. 16).

4 Conclusions

As scholars suggest (Eraut, 1985; Finnegan, 2005; Seely Brown & Adler, 2008) and findings of this research advocate, bridges have to be built to overcome the dichotomy between formal and informal learning, as well as to synergistically connect propositional and procedural knowledge in a lifewide learning perspective.

Lifewide learning is learning in different places simultaneously (≠ from lifelong learning which is learning across lifetime). If Bauman's liquid age has arrived, perhaps liquid learning, in terms of multiple and simultaneous spaces, is also arrived. "Today, individuals inhabit simultaneously as part of their lives multiple learning spaces: work, non-work, family, leisure, social networks, occupational networks, social engagement and manifold channels of news, information and communication, not to mention physical and global mobility (actual and virtual), burst open the possibilities for learning" (Jackson, 2011, p.23).

Besides the abundant opportunities for learning, the intertwining of the social and the technological seems to enact unpredictable futures. In 2006, the Massachusetts Institute of Technology launched the Centre for Collective Intelligence to address the following research ques-

tion: 'how can people and computers be connected so that collectively they act more intelligently than any individuals, groups, or computers have ever done before?'

In order to answer that question, the Centre for Collective Intelligence is committed with three types of research: case studies, new examples, and systematic experiments. "The first is just collecting examples or case studies. I think there are going to be a lot of natural experiments going on in the next few years, people trying lots of interesting things - with or without us. But I think that we can help the world learn from its experience with all these natural experiments by systematically describing and collecting examples of interesting cases of collective intelligence" (Malone, 2006)

This work focused on web-based grassroots initiatives as 'natural experiments' of collective intelligence. WEBM.org community and Ghostsigns project are definitely micro-scale examples, however, it seems that a lot can be understood and capitalised from those initiative to enhance learning and knowledge.

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