



## LEARNING AND INNOVATION IN NEW ICT-FACILITATED COMMUNITIES

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### Summary

*Lifelong learning should be considered a necessity rather than a luxury for living and working in the European information society. However, wide participation in it has not become a reality despite the political endorsement and the needs of industry to have people with new skills for the new jobs. It is forecasted that the qualification structure of jobs in Europe will change significantly by 2020 and there will be high demand for qualified employees. This requires training of the working population, as the young generation entering the labour market cannot fulfil all the labour market skills needs in the next decade. Therefore, the need for lifelong learning is concrete and crucial, and also asks for making visible the learning that is taking place outside traditionally recognised formal educational systems. This paper presents results from a review analysis of learning in new ICT-enabled learning communities. It argues that the learning that is taking place outside traditionally recognized educational and training is becoming a necessity for the skills and jobs of the future. Education and Training policies as well as companies should take these bottom-up ICT-enabled learning communities much more into account.*

### Introduction

Lifelong learning plays a crucial role in the contemporary society with changing jobs and skills needs (European Commission, 2008a; 2008b; 2009b). Cedefop (2008) forecast suggests that the qualification structure of jobs in Europe changes significantly by 2020, emphasizing needs for qualified employees. Training of the working population is required, as the young generation entering the labour market cannot fulfil all the labour market skills needs in the next decade. This calls for developing Education and Training systems to adapt to lifelong learning needs, companies to have dedicated strategies for dealing with lifelong learning, and also for empowering the learners to take the responsibility and have opportunities to develop their competences. The need for lifelong learning is concrete and crucial, and also asks for making visible the learning that is taking place outside traditionally recognised formal educational systems.

IPTS (Institute for Prospective Technological Studies, one of the 7 research institutes of the European Commission Joint Research Center) has been following the developments and impacts of social computing with several studies (see, Ala-Mutka, 2008; Cachia, 2008; Osimo, 2008; Pascu, 2008; Punie, 2008; Redecker, 2009). Online collaboration and networking is a significant phenomenon, enabling new ways of being a part of a community to emerge. People from all age groups are participating in social media with different types of online collaborations, which can support work, learning, and citizenship. Recent measurements suggest that majority of internet users are already engaging in social computing tools, which are already being used more than personal email (Nielsen Online, 2009). Furthermore, Nielsen measurements suggest that the largest growth on social networking applications is now coming from the working age internet users. As in local offline communities, it is presumable that people are learning from each other in their interactions and sharing their creations also online. However, scarce research exists on if and what learning is taking place in these communities and whether it could be harnessed for lifelong learning systems to benefit individuals and the society.

This paper presents results from a review analysis on these new online activities for lifelong learning. This review (Ala-Mutka, forthcoming) was developed as a part of a larger project launched by Institute for Prospective Technological Studies (IPTS) with DG Education and Culture. The overall project aims to study what contributes to the emergence and success of learning in ICT-enabled communities, and how they could promote quality and innovation in lifelong learning and education systems in Europe. The project aims to contribute with research and policy suggestions to the four strategic objectives of European education and training (European Commission, 2008c): 1) Making lifelong learning and learner mobility a reality; 2) Improving the quality and efficiency of provision and outcomes; 3) Promoting equity and active citizenship; 4) Enhancing innovation and creativity. The report explores the scope of the research and gives first suggestions regarding the potential of online communities for responding to the needs for learning new skills for new jobs.

### **Emerging online communities**

The review of online communities shows a great number of different communities emerging with social computing and other internet-based applications. Communities can be clustered according to their members' major drivers for participation, suggested to be: joint environment (organization), joint objective (task, product), common interest/situation (topic, profession), and social connection. As a specific interest for the study, it was found that examples of these different types of communities also exist for learning practitioners, with potential to support their personal and professional development. Often users show and communities accommodate hybrid motivations for participation. Most commonly mentioned motivations for online community participation, present in all community types, were perceived usefulness, connecting with others, and contributing to the common good. Especially social networking and social media sharing communities show high intrinsic motivations and enjoyment, relating to self-expression and sharing one's own experiences.

Learning is not often mentioned as an explicit goal for participation in online collaborative activities. However, studies show examples of innovative aspects of the online communities that have potential to enhance lifelong learning. ICT-enabled communities are enabling

- different ways for learning (narratives, discovery, experimentation, observing, reflection),
- social support for learning (peer support, apprenticeship and situated learning, social acknowledgement of learning, social knowledge management), and

- new ways to access and organize learning (applying community models for courses, organizations, linking communities to learning and education in new ways).

Some of these approaches have also been experimented in formal and non-formal education, but in online settings they emerge more naturally (e.g. learning through developing and discussing narratives in blogosphere). ICT is crucial for online communities, already simply for their existence. However, technologies provide many specific affordances for learning in communities, by giving new ways to launch reflection, experimentation, creativity, supporting social experience differently from face-to-face settings, and providing tools for personalising learning paths and knowledge management. Furthermore, ICT provides ways to gather and follow tacit knowledge of online activities in new ways.

### **Learning in online communities**

Lifelong learning in informal online community settings can be approached from several theoretical viewpoints. Learning of the individual is taking place through inquiry, experience and reflection, filtered and understood through existing knowledge, and resulting into personal meaning making processes, which are guided by social interaction and mediating artefacts. The social context is important for learning, providing the emotional, behavioural and knowledge context to develop as a person with others and as a part of the context. As no individual can hold all the information him/herself, learning to collaborate with others and be a part of a community is an important skill in itself for lifelong learning. Technologies afford connections to information and experts, which emphasises the need to shift from learning facts and figures to learning strategies and culture. In the lifelong learning context, the development of interests, self-efficacy and self-regulation strategies are important for supporting individual learning in the communities.

Online communities can facilitate learning related to all the key competences for lifelong learning: Communication in the mother tongue; Communication in the foreign languages; Mathematical competence and basic competences in science and technology; Digital competence; Learning to learn; Social and civic competences, Sense of initiative and entrepreneurship; Cultural awareness and expression; and Learning to learn (European Parliament and the Council, 2006). In addition to topic-specific and transversal competences, community participation can support explicit and implicit learning of concepts, practices and attitudes for developing one's professional and private identity and life. The learning enabled by the community depends on the topic, tasks and culture of the community. Many, although not all, collaborative communities are learning also on a collective level, revising their tools, resources, processes and goals according to the collective understanding of the participants, reflecting the features of Communities of Practice (Wenger, 1998). Learning and development on the community level is important, as it keeps the community updated with the societal context and responding to the needs of the participants. Empowering the participants to affect the development of the community can improve its relevance and value in reflecting up-to-date collective knowledge of, for example, a profession, task or interest-based group in the society.

It is suggested that success factors for individual learning in communities include: 1) Perceived relevance and opportunity for participation 2) Psychological commitment to the community goals and culture 3) Socially supporting environment for interaction 4) Norms, rules and (diverse) roles that facilitate community learning 5) Self-perception and personal skills for learning. All of these are interrelated, and suitable tools and examples technologies are playing an important role can have a positive effect on all aspects.

## Challenges

Learning communities, online or offline, are not easily compatible with the instructionist approaches developed for the industrial society. Currently, few links between organizations (educational institutions, workplaces) and learning in open communities can be found in the literature surveyed. Learning in online communities needs to be found and learned by oneself or through friends and colleagues. A major challenge to learning in communities is the initial barrier for having knowledge, tools and skills to start participating in ICT-based social approaches. Furthermore, not all people are equipped with ability or motivation for self-regulated learning in online communities. Community tools and models are important in allowing inclusive engagement, and effective learning processes often require scaffolding and supportive assessment. It is necessary to develop validation systems for non-formal and informal learning, identifying and making visible different relevant learning outcomes (cf. European Qualifications Framework for Lifelong Learning, European Parliament and Council, 2008) These could guide individuals in their efforts, if they want to intentionally strive towards learning in these informal settings.

Overall, there is a lack of awareness (of organizations and people) of the potential of learning in online communities. These communities are providing bottom-up created environments for knowledge sharing and meaning making, with direct connections with the contemporary skills needs and relevant questions among the practitioners and society. Educational institutions could benefit from linking their approaches with online expert communities. Furthermore, participation in online communities could improve the learners' skills and interest for lifelong learning. However, this would require new ways to think about objectives, management, funding and limits of organizations and educational institutions. Overall, scarce literature exists on learning in informal online community settings and on combining it with formally certified learning objectives. Research is needed to gather evidence and suggest value propositions for institutions and different actors and stakeholders, to work as incentives and examples in changing existing practices.

## Conclusion

This paper reports intermediate results of the project which are being further developed via a case study of 12 online communities and an expert validation workshop to be held end of March 2009. However, the review already shows many examples demonstrating that ICT affords communities important pedagogical, social and organizational aspects, which can promote new ways of learning. It is suggested that

- 1) Online communities are becoming an important element of many people lives and have potential to be used as a key tool for the desired *lifelong learning continuum* in the educational systems;
- 2) Online communities can provide social but specific environments for different types of learning outcomes, where learning with practitioners can provide *effectively relevant knowledge, skills and competences* of the field;
- 3) After initial barriers for access, skills and attitudes for participating in lifelong learning in online settings have been overcome, the diversity of opportunities and ICT affordances for personalization in online communities can support *equity* in new ways;

- 4) Personalised approach for learning in social environment and versatile tools for productive activities can nurture personal *creativity* and *skills for innovation*, and community approaches could enhance *innovative capabilities* of the educational institutions in new ways.

Overall, there is reason to believe that online communities can provide a means to learn new skills for new jobs in new ways, if educational systems learn to take up the opportunity.

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