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Moving towards a Personal Learning Environment

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Abstract

Learning technologists have started thinking 'outside the box' of traditional learning environments in their research of Personal Learning Environments. Web2.0 technologies have proven to create a mesh of interlinked nodes and connections on online networks. The question is if a powerful pedagogical platform can be created by connecting intelligent recommender systems to these media.

Introduction

> 'Learning and teaching might be based on unconscious, but at the same time "deep-seated" patterns of behaviour, not only of students but also of the teachers. Their ritualisation lends solidity and permanence to the actions taking place in the teaching space' (Peters, p.10).

It is only recently that attempts have been made to leave the traditional class room and teaching methods behind, initially in the 70s through the radical perspectives of Freire and Illich, and just in the past decade, under the influence of developing technologies. Learning technologists, teachers and learners have started to question the effectiveness of dominant teaching strategies developed over generations (Facer, 2009; Illich, 1971). Peters highlighted that the space in which we teach and learn defines our approaches to the teaching and learning process. He explained that particular characteristics are pertinent to particular places and argued that traditional teaching spaces are not value neutral: 'Each place in the experienced space has its meaning for the person. The space does not exist without the person experiencing it.' 'The people in the space are at different distances to one another' and this has an effect on the quality of the interactions. 'The learning environment interacts with the learners and tutor'. (Peters, 1999, p.9).

This research paper will discuss the relatively new concept of the Personal Learning Environment (PLE), in which the learner is in control and that might foster meaningful learning experiences in an open informal learning space. It will highlight the pedagogy that could underpin such an environment and the educational challenges in developing it, including ones related to learner autonomy and 'critical literacies'.

'Pedagogy of abundance' or 'pedagogy of human beings'?

The past decades have seen major changes in society under influence of technology. Several commentators (Wellman et al, 2003; Shearman, 2000) have indicated that the proliferation of Information and Communications Technologies has blurred the boundaries between home, work, leisure, learning and play, and has reshaped our life-styles and social interaction. According to Facer (2009) the socio-technological developments and changes in society will pose three major challenges to educators and educational systems if they want to support learners in the coming years in an environment in which they will thrive:

> 'They require us to redesign educational practices to meet the needs of networked individuals; they require us to develop systematic strategies to support learners to navigate a much more complex learning landscape; They require us to re-examine our educational goals in the context of economic uncertainties'.
>
> (Facer, 2009, p.7)

Educational theorists have started thinking about the changes technology and the complex world in which we now live might impose on pedagogy. Weller (2009), for instance, envisioned a move towards a 'pedagogy of abundance'. He argued that it has now become easy to organize information and to ensure that people can use a variety of tools for learning on the Web as content is free and varied and can be shared easily through social interaction while using Web2.0 tools. Learning can take place on informal networks rather than within formal institutional structures (Weller, 2009). Others feel, however, that in the current complex times adult educators also have a duty to be critical of the technologies and should

teach adults what the implications of the technologies are for their lives. The views as expressed by Wheelahan (2007, p. 145) promote a 'pedagogy for human beings', where 'pedagogy itself must be characterized by uncertainty, with knowledge loosely framed, provisional, and open-ended', similar to the ideas of the 'Risk Society' expressed by Beck in the 1990s. She sees a variety of different forms of knowledge as being required to be able to live and learn successfully in uncertain and complex times. The move away from 'adult education' to become 'lifelong learning' has for instance been identified as one of the contributing factors in a change from the prominent position of propositional knowledge fostered by institutional education towards a situation where knowledge is related to real life situations 'as an educational tool in practice' (Wheelahan, 2007).

Current views of learning propose that knowledge is no longer traditional knowledge transmitted from tutor to student, but created by themselves, out of experiences in their lives, together with earlier acquired knowledge in constructivist views (Cobb, 1999), and while engaging in a social interaction in social constructivism. Lave and Wenger emphasise socio-cultural perspectives, where knowledge is seen to be situated in its context, and the learner controls his own learning, making connections with his own experiences and knowledge in cooperative activities with fellow learners. Knowledge is no longer transferred, but created and constructed. Active participation in collaborative learning activities rather than passively receiving knowledge from the teacher is key in these theories (Lave and Wenger, 2002). The Internet has added to the debate on knowledge and learning as learning technologists can see a different form of knowledge emerging through the connective nature of new Internet tools. Downes speaks of 'connected knowledge', and Siemens of knowledge in 'continual flux' (2008, p5.) . They argue that 'knowledge …is distributive, that is, not located in any given place . . . but rather consists of the network of connections formed from experience and interactions with a knowing community' (Downes, 2006, p. 1).

Informal learning

These theories form the basis for an argument in favour of creating an environment that supports learners in their learning in their own setting, interacting with information and people of their choice, for instance through a Personal Learning Environment, rather than educational institution. With the introduction of new technologies a number of educationalists have initiated a debate on informal and non-formal learning (Downes, 2006; Sharples et al, 2005). Sharples et al see learning as 'lifelong' and 'lifewide':

> 'We learn across space as we take ideas and learning resources gained in one location and apply or develop them in another. We learn across time, by revisiting knowledge that was gained in an earlier, in a different context, and more broadly, through ideas and strategies gained in earlier years providing a framework for a lifetime of learning. We move from topic to topic, managing a range of personal learning projects, rather than following a single curriculum'.
>
> (Sharples et al, 2005, p. 2)

It has been argued that most learning takes place informally outside educational institutions (Downes, 2009, Wenger, 1998, Illich, 1971) and that people should be supported in doing so. Some have argued that the time might be right to bring into practice Illich's vision of the 70s, in which he advocated the deschooling of society, and the provision of opportunities to individuals to learn from the teacher of their choice, to make available to individuals the resources required to learn successfully, and to give people the opportunity to teach others if they feel they can contribute to others learning (Illich, 1971). The control over the learning activity, the choice of tools used and the choice of people with whom to communicate would lie with the learner, rather than with an institution-based instructor.

One might question if all learners would be capable of doing so, and over the past four decades the intricacies of learning outside the educational institutional context have been researched extensively (Candy, 1991; Long, 1993; Bouchard, 2009). Several factors have been identified that might be important to the development of a learning environment that is positioned outside educational institutions. Bouchard (2009) clustered these factors in four groups, the first one related to motivation, initiative and confidence; the second one, to the sequencing of the learning activity and the third one, related to issues of language and communication used in the learning processes. The importance of aspects of 'economy' in learner autonomy was recognized as a fourth category; the choice to learn for personal gain such as for

future employment, a qualification, and the possible cost of other study options in relation to the value of the knowledge developed. When developing and designing a PLE that facilitates autonomous learning, these factors will have to be considered to ensure that people will be able to access and use the environment in a meaningful way. The second group of factors for instance, related to sequencing and organising of activities would in a formal class room be the instructor's responsibility, but are in an autonomous learning system linked to tasks that the learner will have to carry out independently, which could be problematic. The motivational factors would in a traditional adult education class be very important in learners either participating in learning or not. If confidence levels are low, it is not likely that a person would take up learning by using a PLE. On the other hand, as the learner can make choices about what to learn and how to learn, in addition to the availability of particular semiotic features, such as multimedia, the learner might be motivated to start a learning project. Moreover, the language and multimedia used will play an important role in who will be engaged by a PLE and who will not.

Critical Literacies

To learn independently using a PLE people not only need to become autonomous learners, but also need particular skills and competencies. There is no 'overarching tutor' to guide learners and to challenge their ideas and beliefs or to help them in gathering information and understanding the media and the way they represent information. Instead, the onus is on learners themselves to make these judgments and to validate information and knowledge, and to find knowledgeable others who can help them with this. Downes (2009) discussed the concept of 'critical literacies' in relation to successful learning on informal networks, while Bouchard and Kop emphasised the need for individuals to be able to 'network' effectively, which requires considerable levels of meta-cognition and collaboration skills that, they argue, not all learners possess (Kop and Bouchard, 2010, in press).

Moreover, the new learning environment requires learners to be active in their learning by editing and producing information themselves in a variety of formats and by communicating and collaborating with others in new ways. People need to have a certain level of creativity and innovative thinking, in addition to feeling competent, confident and comfortable at using ICT applications to be able to do so. Learners need to be flexible, able to adapt to new situations and able to solve problems that they come across during their learning journey. Anecdotal evidence suggests that people learn some of these informally from each other, but other critical literacies, i.e. information literacy, develop at a very early age and will be hard to acquire at a later date. Critical thinking skills and media literacy seem to be best learned in a formal environment as the presence of an expert to challenge beliefs and show opposing points of view to the learner seems required for a critical awareness to develop (British Library, 2008; Walters and Kop, 2009). Some argue however that these skills will develop while engaging in online communication with others, or via challenging feedback or recommendations through the PLE system itself (Downes, 2009).

A model for learning in a Personal Learning Environment

How then would people learn by using a PLE? Most learning experiences are based on six components: gathering of information, social interaction, activity, reflection, conceptualization and 'repurposing' of information, although researchers disagree on the emphasis put on the different components (Downes 2006, Mason 2006, Mayes, 2002). These elements can all be incorporated in a technologically driven learning environment, but the challenge would be their interplay, as this relationship will be one of the determining factors in the quality and depth of the learning that takes place. Figure 1 shows a model of learning while using a PLE. It is based on Kolb's learning cycle, but components have been added to provide a better representation of how people might learn while using a PLE.

A number of technical components are seen to be vital to support this model of learning. A personal profiler that stores personal information about the user and supports the learner with finding information by suggesting and rating particular information, tools and applications based on the profile. Information will be accumulated by the learner and fed into the learning cycle at several stages. This could be at the planning stage, the 'repurposing' or conceptualizing stage, or it could be while sharing and collaborating or while receiving feedback from others, depending on the learner's requirements.

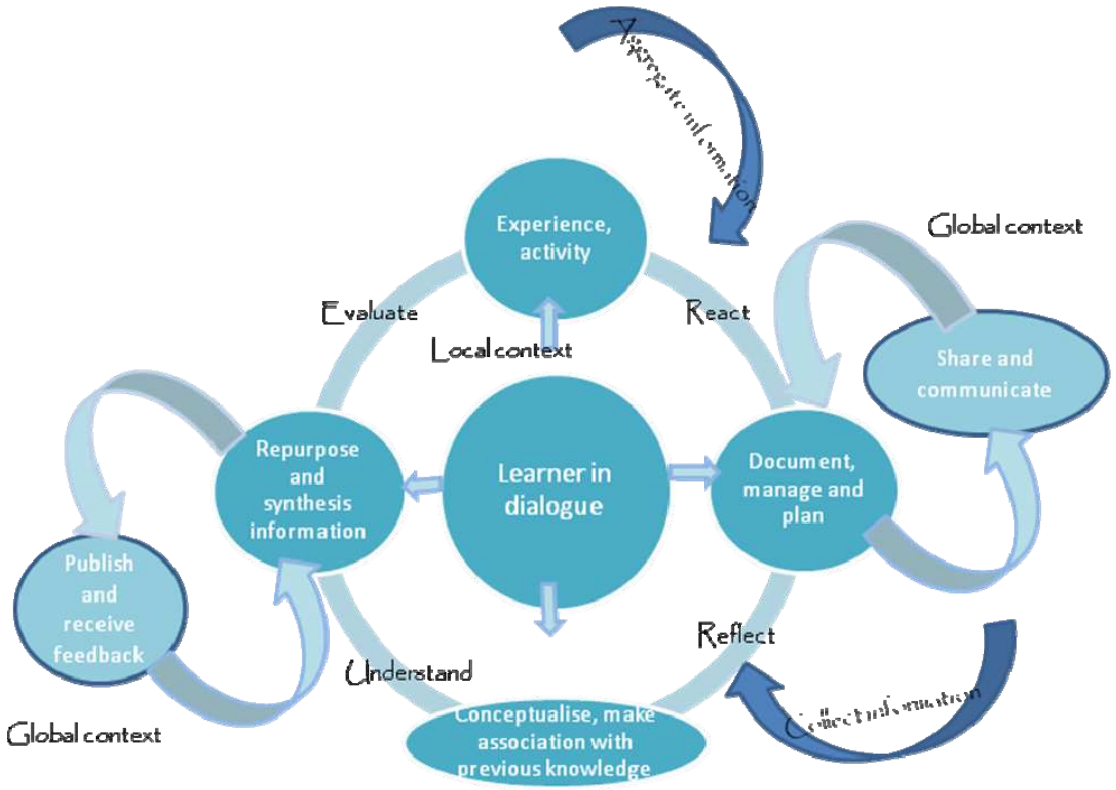

Figure 1 Model of Personal Learning Environment based learning

People will need to be able to edit and produce resources to be able to 'repurpose' information, which could be a blog or a posted video and will help the user to create new content and support distribution to other sources. An editor would support several areas in the learning model, including the recording, activity, conceptualizing and repurposing stages.

A Personal Development Planning tool, an ePortfolio-like application, would also be required for focused aggregation of digital items – ideas, evidence, reflections, feedback etc. which learners can select to share with others. It would offer learners the opportunity to reflect on their personal development, their (lifelong) learning and their employability, skills, career and work-development. It is meant to support meta-cognition and the organizing, planning and recording stages of the learning model. A learner advisor service could have the role of challenging the learner through feedback by others on his or her learning activities, a 'peer-assessment tool'. Feedback from others on the learning project will stimulate reflection and thinking about the learning process. This in addition to a recommender system that would recommend information based on earlier learning projects.

The aim of the PLE would be different from other information gathering tools as it provides learners with tailor made information in a type of application that is centred on the student and would include the student's personal educational record, portfolio, business and educational contacts, communications and creativity tools and related services. In short, it would combine all tools and applications a learner needs to start a learning journey with recommendations of information based on earlier searches and personal profile, in addition to feedback from others on their learning, which would allow for a form of vicarious learning (Mayes, 2002). Web2.0 technologies have proven to be well suited to creating a mesh of interlinked nodes on online networks and research is currently being carried out to establish if a powerful pedagogical platform to enhance people's informal learning will be created when intelligent recommender systems are connected to these tools,. By the time the conference is being held we will be able to report on this research to date.

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Biography:

Rita Kop works as a researcher for the National Research Council Canada on their PLE project. Before that she was Assistant Professor in Adult Continuing Education at Swansea University in the UK. Her research interests are personalized learning, distance education and learning through online networks