

The pedagogy of personalised learning: exemplars, MOOCS and related learning theories

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Abstract: In contrast to teacher directed curricula, personal learning environments (PLE's) are learner-centric, providing relevant and timely learning opportunities by enabling individuals to select, integrate and construct knowledge using various software, services and options based on their needs and circumstance. This approach ideally leads to a model where learner needs drive the learning process. In PLE's, teacher pedagogy undergoes a radical shift to allow learners to make decisions that best suit their goals and needs for acquisition of skills, knowledge creation, social interaction and collaboration. The pedagogy of personalised learning is multidimensional and can be supported by Web 2.0 tools and social media. Examples of MOOCs and learning theories that exemplify these features are discussed.

Introduction

Defining personalised learning (PL) can be problematic, as there are many dimensions and perspectives on what it actually means. Downes (2005) describes a learning environment as an approach, not an application, one that protects and celebrates identity, supports multiple levels of socializing, and encourages the development of communities of inquiry. Others argue a case for *Personal Learning Environments* (PLEs), which affirm the role of the individual in organising, customising and shaping his/her own learning environment (McLoughlin & Lee, 2008).

The PLE approach means that learning content is created and distributed in a very different manner to traditional didactic pedagogy. Rather than being composed and pre-packaged packaged by an instructor, content is often negotiated with the learners, and requires the active direction of the student. Digital tools allow the content to be re-mixed and re- with the student's own individual needs in mind, and the learning resources may combine learner-generated content and peer contributions. The emergence and adoption of open educational resources (OERs) that can be customized by and for learners, is one example, and that consequently access to learning is no longer a scarce commodity restricted to only those who have the time or willingness to attend a land-based campus. The principle underpinning a PLE is that learners exercise greater ownership and control over their learning experiences, rather than being constrained by centralised, instructor-controlled learning based on delivery of pre-fabricated curriculum According to Becta (2008), the following key words and phrases describe essential characteristics of personalising learning: *personal goal-setting inclusion; choice and preference; engagement and participation; responsiveness; flexibility; tailored and adaptable; and, enabling independence*. Personalising learning involves seven key elements, with primacy being given to learner agency and the pedagogy of personalised learning:

1. *The learning and teaching dynamic (pedagogy)*
2. *Assessment*
3. *Flexible curriculum*
4. *Learning environment*
5. *Support networks*
6. *Personalised content*
7. *Responsive infrastructure*

As a concept, personalised learning has many definitions and dimensions. Atwell (2007) characterises personalisation in terms of learner participation, as the principles behind it imply that personalised learning offers a real opportunity for learners to participate fully and become co-producers and co-creators of knowledge.

Drivers of personalised learning

The increased interest and growth of personalised learning environments is seen in documents produced by the OECD (2008).

- **Life-long learning** implies that learners will follow diverse and individual learning pathways, building up their skills and knowledge base to meet their own personal goals (work and leisure related) and may be one of the main drivers for PLEs.
- **Personal choice, or learner centred education** is a popular mantra at the moment. At a basic level, personalising learning entails more responsive teaching to meet learner needs, although this might not be made explicit to the learners it seeks to benefit. At the most profound level, personalising learning concerns '*self-organisation by individuals working with the support and advisory systems provided by professionals*' (Leadbeater, 2009);
- **Self-regulated learning** and learner autonomy are seen to be of growing importance, with recognition that each learner is coming from a different understanding and has different learning goals. In a PL environment, not only the process, content and assessment are negotiable with learners, but the actual aims and purposes of the education in which learners are engaged. An example of learner-centred environments is CMOOCS. While XMOOCs reflect traditional structures of online courses, biased, toward "sage-on-the-stage" teaching and toward more teacher-centered than student-centered structures. ON the other hand, CMOOCs are learner-centred and peer drive, enabling community building, user created content and informal, learner driven learning pathways. In addition CMOOCS allow learners to build a personal network of people, who can offer feedback and support.

How PLE's challenge traditional pedagogy

Currently, educational experiences delivered by higher institutions emphasise individual learning, where individuals have some freedom but are limited by learning management systems and lack the opportunity to personalize their learning process. Productive and learner centred pedagogies require collaborative learning and participation by learners in a learning community, and a large element of self-managed learning (Chang, Kennedy, Petrovic, 2008). Thus, one of the challenges in e-learning in higher education is to focus on the opportunities for promoting personalisation and individuality within the learning experience. One approach is to augment landscapes by embracing elements from the personal learning needs and interests of students with selected and pedagogically sound institutional landscapes that use Web 2.0 tools and applications (Lee & McLoughlin 2010). In this way, personalising' learning means focusing in a more structured way on each student's learning in order to enhance progress, achievement and participation. It also recognises that young people have the right to receive support and challenge, tailored to their needs, interests and abilities.

The PLE model challenges university and college teachers to harness the many resources that exist outside the formal spaces of the institution, to create opportunities for authentic learning that is personally meaningful and relevant to learners, and to capitalise on the interests and digital competencies that learners already possess. In this way, PLEs (such as C MOOCS) allow learners to make decisions about how to configure the learning environment to best suit their goals and needs for information acquisition, knowledge construction, social interaction and collaboration.

Does technology support personalised learning?

Technology can have a role to play in the development of learner centred pedagogy, when teachers respond to learner interests and enthusiasm about aspects of their learning (such as more complex

thinking), and this starts to shape their subsequent planning and teaching. The development usually remains implicit, however, and is shaped and controlled by the teacher. It is uncommon to find the influence of technology being explicitly shaped by learners' demands, other than in the choice of particular activities within the curriculum framework or the way that these are learned (the particular approaches to specific tasks and activities). Many researchers advocate a more learner-centred pedagogy as part of their underpinning educational values for personalised learning (Minocha, 2009; McLoughlin & Lee, 2008). By harnessing the affordances of the new wave of digital technologies and social software tools, three key areas pivotal to the development of personalisation through teaching are summarised by Green, Facer, Rudd, Dillon and Humphreys (2005). According to them, pedagogy must:

- ensure that learners are capable of making informed educational decisions;
- diversify and recognise different forms of skills and knowledge;
- include learner-focused forms of feedback and assessment.

Clearly, for PL to be realised, pedagogy entails a process whereby teacher and students play an interactive role, in which teaching and learning activities are negotiated, learner-centred multifaceted and socially mediated, as in CMOOCs.

Theoretical frameworks underpinning personalised learning

The proliferation of personalisation definitions from the OECD, EDUCAUSE and researchers with a focus on learner creativity and personalisation, show that learning is viewed a key ingredient of productivity in the 21st century. Educational systems are in flux, and as technologies continue to evolve, the expectations of learners, teachers and community policy makers focus on personalisation where the learner is directly involved in both the design and creation of the learning experience and outcome. We are already witnessing reforms in higher education which are making personalised learning a reality for learner, for example, through the adoption of e-portfolios to document and record learning achievements. The emphasis on diversity(for example in the Australian higher education system emphasizes greater access, curriculum differentiation and a prominent role for student choice, reflects the reality of 21st century needs of a diverse student body, with the expectations that learning institutions and universities will be responsive to their needs. In this context, we review a number of salient pedagogical models that we believe support the principles of personalised learning ie connectivism, pedagogy 2.0, and online collaborative learning pedagogy (Harasim, 2012).

Connectivist learning

Connectivist pedagogy emerged recently based on the thinking and research of Siemens (Siemens, 2005, 2007) and Downes (2007). Both have defined connectivist approaches to teaching and learning, arguing that learning is the process of building networks of information, contacts, and resources that are applied to real problems. Connectivism has emerged as a key concept in the information/networked age and assumes that learners have ubiquitous access to networked technologies. This pedagogical approach focusses on building and maintaining networked connections that are relevant, current and flexible enough to supports student-centred learning. Connectivism also assumes that the learner's role is not to memorize or even understand everything, but to have the capacity to find and apply knowledge when and where it is needed. It is noteworthy that connectivist pedagogies rely on the ubiquity of networked connections between people, digital artefacts, and content, which would have been inconceivable if the World Wide Web were not available to mediate the process., thereby showing that technology has played a major role in determining the potential pedagogies that may be employed.

Online collaborative learning pedagogy (OCLP)

With the emergence and growth of online learning and concomitant emphasis on knowledge creation and collaboration, the metaphor of the *knowledge age* has become a reality (Harasim 2012). Online collaborative learning theory (OCL) focuses of how to supports learners as knowledge builders and active learners, and learning is defined as conceptual change within a community of discourse as explained by Scardamalia & Bereiter (2006). The learning processes of progress, common understanding, creativity, collaborative problem solving. Promoting knowledge building dialogue

among learners is widely recognised as a challenging and complex issue as it requires attention the learning environment and teacher pedagogy. Technology facilitates dialogue and exchange, and contribute to the occurrence of knowledge building discourse, with teacher as co-learner.

Pedagogy 2.0

Pedagogy 2.0 that seeks to capitalise on the affordances of participatory technologies, and is a framework that attempts to overcome the limitations of existing models of teaching and learning (Hughes, 2009; McLoughlin & Lee, 2011), by emphasizing the connectivity enabled by social software tools. In a networked society, learners require access to ideas, resources and communities driven by personal needs and choice (personalisation), and engage primarily in the social processes of knowledge creation rather than consumption (productivity), linking and communicating with communities and global distributed networks (participation) in the process of idea sharing, knowledge construction and understanding. The interdependence between ideas, individuals, communities and information networks, supported by technology, underpin the principles of this pedagogy.

Progressive Inquiry/Triialogocal pedagogy T

The starting point of a progressive inquiry process is the creation of the context for inquiry by presenting a multidisciplinary approach to theoretical or real-life phenomena. Students then form their own questions about the phenomena and create their intuitive working theories as explanations to answer the questions, which are shared. The learning community acquires new information by exploiting various information sources after having together evaluated the ideas and explanations that have been coproduced and shared. For the advancement of a progressive inquiry process, it is essential that all knowledge objects and the inquiry process are shared within the learning community, and generated by the learners. The pedagogy envisages a mediating and mentoring role for teachers and uses web 2.0 tools to discuss, organize and make visible the strategies and activities in the inquiry process.

Conclusion

The widespread adoption of Web 2.0 tools and the uptake of social media have shifted the emphasis from passive didactic learning to active, inquiry based-collaborative inquiry. The major drivers for pedagogical transformation have resulted from this movement towards networked collaborative knowledge building, and the open educational movement. The three pedagogies mentioned above ie *Pedagogy 2.0*, *Online collaborative learning pedagogy (OCLP)* and *Connectivism* all share elements in common, including knowledge building and personalisation learning, yet all have distinct attributes that differentiate them. They draw upon a range of theoretical frameworks that have constructivist learning and an emphasis on personalisation of the learning experiences at their core.

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