

## Digital learning hubs: theoretical and practical ideas for innovating MOOCs

## *Introduction*

Massive open online courses (MOOCs) are online courses aimed at global unlimited participation, originally conceptualised to carry no fee and offer no formal accreditation to the students (McAuley, Stewart, Siemens & Cormier, 2010). In their early stages, MOOCs were heralded as a disruptive innovation in the higher education system (Hyman, 2012) and a transformative educational force in education overall (Cheng, 2013). More recently, however, initial enthusiasm of MOOC providers has begun to wane (Winkler, 2012), with the retention rates on most courses below 10% (Gütl, Rizzardini, Chang, & Morales, 2014) and the criticism that the current MOOC model is unlikely 'to have a long and enduring impact' (Gonick, 2013, online) and reach students from disadvantaged backgrounds or developing countries (Kalman, 2014).

Although their pedagogies vary, the most popular MOOC providers (e.g., Coursera, FutureLearn and EdX) are turning towards what Rodriguez (2012) described as Stanford-AI-like model, which is 'essentially a digital facelift of traditional education' (p.6, cited in Mudzamba & de la Rey, 2013). According to Rodriguez (2012), learners on these courses are assimilating knowledge provided by the institution, with the option to obtain an honorary certificate of participation, which is graded and carries a fee. As an antidote to the Stanford-AI model, the connectivist model of MOOCs positions learners as co-creators and co-consumers of contents which are available anywhere and anytime (Kop & Hill, 2008; Rodriguez, 2012). However, whilst this model is more aligned with the notion of a transformative paradigm, it is the one that is currently characterised by low retention rates and is often described as unsustainable (Clow, 2013).

In this Viewpoint, we argue that a more refined distinction than the one proposed by the connectivist model is necessary to address the issue of student engagement and realise transformative educational visions. Over the past two years, we have participated in several courses as learners as well as MOOC educators. We have also been involved in the scoping of a community-oriented digital learning Hub (DLH). The development of this Hub concept involved a desk-based analysis of effective digital learning communities online and a review of studies concerned with collaborative and distributed learning and socio-cultural approaches to learning (e.g., Fjuk, A., & Sorensen, 1997; Fjuk, A., & Holmfeld, 1997; Gouseti, 2010; Littleton & Mercer, 2013). This work led us to conjecture that there are some important differences between MOOCs and community-organised digital learning hubs, the understanding of which could potentially alleviate some of the limitations currently faced by major MOOCs providers. While previous frameworks (e.g., Crook, 2013) have provided useful and informative steps in characterising technology and education, recent technological innovations such as MOOCs suggest the need for a framework which would offer a more refined theoretical treatment of the connectivist model (cf Alario-Hoyos, Pérez-Sanagustín, Cormier & Kloos, 2014) and to identify key possibilities for intersection between MOOCs and DLHs. This is why we use the framework of learning approaches developed by Elmore (2007, 2014).

#### *Four kinds of learning spaces*

Elmore's body of work on leadership and school reform (2000, 2005, 2007) led him to a framework which distinguishes four learning modes, each of which represents one dominant theory of learning, organized around two axes: the horizontal axis

represents hierarchical to distributed learning spaces, and the vertical axis stands for individual to collective learning (see Figure1).

*Figure1 to be inserted about here*

While in the individual quadrants the primary focus is on the single person (individual) and his/her learning activity, in the collective quadrants, learning is conceptualised as a social activity. Correspondingly, learning environments designed according to the hierarchical individual mode are typically teacher-centred while those in the distributed collective quadrant are characterised by open-plan learning spaces with no lecture-type outline. There is no intended hierarchy in the framework; the quadrants complement each other in that a specific teaching approach depends on the context and content of a learning activity.

In some respects, the two distributed learning quadrants in the right column align with the connectivist description offered by Rodriguez (2012). However, there are some important differences between the two: the distributed *collective* quadrant is based on: 'mutual dependency and reciprocity' (p.24, Elmore, 2005) where learners regularly meet to share and feed of each other's knowledge and understanding. Expertise and resources are thus accumulated and developed collectively; there is no pre-set didactic pedagogy which would guide the learning. The community consists of members with diverse learning profiles and backgrounds. On the other hand, the distributed *individual* quadrant positions the individual as the primary unit of learning; learning occurs as an individual activity, with multiple networked learning opportunities. There is an implicit assumption that individuals are motivated to learn (Goodyear & Jones, 2003) and a

leading educator is there to strike a judicious balance between guiding the learners and not over-structure their learning.

These two quadrants give rise to different types of learning communities which are theoretically related, but they differ from each other in practice: MOOCs are situated within the distributed individual learning while informal learning communities (often based around a mutual interest) in the distributed collective quadrant. We outline the key differences of these two communities as these may bring forward experiences that fulfil the promise of MOOCs to innovate education and retain students.

### *Process versus product of learning*

A fundamental difference between the individual and collective distributed learning approaches is the emphasis given to the products rather than processes of learning. In DLHs, the processes of production are revealed in several ways. For example, in the knitting online community Ravelry ([www.ravelry.com](http://www.ravelry.com)), members share their designs and how-to guides before or after they had posted up a product. There is also a lot of sharing of work-in-progress. Similarly, in the Instructables community (<http://www.instructables.com/>), where members can use and share any materials or design "the instructable", there are do-it-yourself videos, images and downloadable pdf files. Through contests and continuously growing community, these lead to more sophisticated products as members can follow the instructions and upload their modifications of products on an iterative basis. In Instructables, videos are used for giving instructions and exemplify processes, allowing members to experiment and produce novel solutions. They are imaginative rather than imitative places where users can cross-fertilise ideas. For example, in regular competitions promoted on the

Instructable site, the winning product is chosen by the Instructables members who can vote for an entry during the contest. There is thus no one single pre-determined outcome; the winning product can be any piece of work that is collaboratively agreed to be the best by the community. This open-endedness endows the contests with an intrinsic appeal and sense of possible achievement to the participants. The transparency of the process also eliminates the risk of members to drop out because the pre-established stakes would be too high.

This is different from MOOCs where emphasis is placed on the final product which is a pre-defined outcome outlined by the group leader. The Course Team are not on equal footing with the community- they do not share their work and make it available for peer feedback-they are positioned as masters who typically explain content through multiple “piece-to-camera” shots or written resources. Although some MOOCs have begun using fast-moving animations which are more captivating and process-orientated multimedia, their purpose has remained the same: they are used to illustrate an established interpretation of the learning content, but rarely to share a process which learners can emulate, build upon and share themselves. Also, while in digital learning hubs policies of assessment, feedback and best practice do not emerge from the community, in MOOCs they are offered as pre-established rules of play. There is some community participation in the MOOCs, for example through peer feedback on individual assignments, but this is not formally linked to passing the course. Also, although MOOC forums are often moderated by volunteer forum moderators (chosen from the online community), this serves a rather pragmatic purpose of moderating large-scale discussions.

*Personalisation possibilities*

While digital learning hubs contain several possibilities for personalising their learners' profiles, this is less possible with the MOOCs platforms. In addition, while the use of affective digital stamps is a strong feature of the digital learning hubs, this is almost absent in the MOOCs. For instance, on both Ravlery and Instructuables, affection can be expressed through various social metrics, such as for example tags signalling nature of engagement, marking favourites, commenting on, or sharing a specific post or product. Some MOOCs embed community-oriented digital elements, such as for example dedicated Twitter hashtags, or the opportunity to be part of Google Hangout live sessions for the students. However, while hashtags enable users to organise the content and highlight specific topics within a message (Lösch & Müller, 2011), the personalisation options on DLHs allow users to set up a profile picture which includes several identification markers, including information about other users they follow and their likes and dislikes.

### *Discussion*

It is not the case that the MOOC model should replace the DLH model- there is space for both to co-exist. However, we can identify instances of effective alignments that could build on the strengths of DLHs to tackle the high attrition rate in MOOCs and retain learners by engaging them with a more 21<sup>st</sup> century approach to learning. In particular, we recommend that educators create opportunities for experts to emerge within the community, by, for example, issuing calls for showcasing members' work or letting the community assess their merits. Similarly, more work could be done to support symbiotic relationships among the learners and teachers and create a sense of 'felt engagement' in the online community (cf Mahn & John-Steiner, 2002). This can be achieved by making subtle changes to the ways the course is structured, with for

example according someone a star or other arbitrary marker showing a more personal appreciation. While we recognise that MOOCs have limited technological levels of personalisation, educators can still include more individualised feedback on students' work and run smaller, perhaps interest-based Google Hangout sessions to engage students in their learning.

In conclusion, DLHs are a practical exemplification of innovative pedagogies and of a learning approach that is a reciprocal collaborative process, conceptualised as a broader distribution of expertise and collective experiences (Bransford, Brown and Cocking 2000). DLHs harness web 2.0 technologies for transformative educational purposes and their popularity, self-sustainability and steady growth indicate that a close emulation of their model can support critical points in the future design stages of MOOCs. If MOOCs become a more deliberately collective act of knowledge building, with a web of practices which 'stretch into a complex system beginning and ending outside the school' (Nespor, 1997, p.xiii), then we can expect learners' joint learning experiences to foster a vibrant, democratic learning community.



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Figure1: Elmore's four modes of learning

