From proprietary to personalized higher education - how OER takes universities outside the comfort zone

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Present trends in the mainstream adoption of educational technology coupled to the increased acceptance and adoption of openness in terms of sharing resources and open access force higher education into a radical rethink of its structures and educational strategies. This article examines the current shift in focus from the simple production and sharing of open educational resources (OER) towards wider concepts such as open educational practices (OEP) and cultures (OEC). OER involves mostly educators whereas OEP and OEC demand the commitment of management, administrators and politicians.

This openness is already spawning alternative types of peer-based collaborative learning both inside and outside the formal education system.

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In particular the increased awareness of the importance of informal learning has raised a clear need for some kind of certification model and the current open badges initiative lead by Mozilla and several US authorities is examined and discussed. In 2011 the OER university partnership announced an innovative approach to combining formal and informal learning by planning to offer credible credentials for students who have acquired the necessary skills through their own learning paths. The road to future higher education may not be entirely behind the campus walls.

1 Introduction

This article focuses on the consequences of increased openness in education and the mainstream adoption of educational technology. Openness is not simply restricted to the open publication of academic resources; it impacts the whole educational infrastructure: curriculum, instruction, learning, policy, technology, research, and finance. The overwhelming global demand for higher education means that universities must consider new ways of supporting lifelong learning for all and not simply for those privileged to be enrolled on a campus degree program. Demands and expectations from next generation learners (NGL) are forcing educational institutions to rethink their models for teaching and administering education. Learning is no longer tied to physical location and collaborative net-based learning as outlined in the connectivity perspective of Siemens (2005) and collaborative learning perspective of Downes (2010). When information and learning resources are available at a click, the focus for learning and education has to change from content to context (Batson, 2010) and learners will need to be able to orchestrate their own learning.

In recent years many types of open learning models have been tested; various MOOCs[1] (Massive Open Online Courses) run by established universities, Peer 2 Peer University[2], and the OER University (OERu) initiative[3]. These and many other new models may well lead to a de-institutionalization of education (Bates, 2008, 2011/10/25) whereby students are able to build up e-portfolios of work from various institutions and informal learning and then apply for certification at the university of choice.

The future of certification could lie in a collaborative assessment between the learner, peers, the labor market and stakeholders. However we are not there yet. Although learning has become ubiquitous it is still extremely difficult to get recognition for skills and achievements that are gained outside the classrooms of formal education. This article will discuss some of the issues around changing educational and learning perspectives in higher education.

[1] http://en.wikipedia.org/wiki/Massive_open_online_course

[2] http://p2pu.org/en/

[3] http://wikieducator.org/OER_university

2 Lifelong learning for the 21st century

Learning perspectives will focus more on competences and networking rather than knowledge for the 21st century. Learning will be more open, personalized, interactive and active, based on networks collaboration, sharing and user generated content (Concede, 2011a). The traditional educational hierarchy will be flattened as all are involved in an ecosystem of teaching and learning. This means a radical reinvention of the teacher's role towards that of mentor/facilitator.

Although technology is often in focus the real key to change in education are the attitudes and actions of stakeholders in how to exploit the opportunities the technology opens up. Global demands for access to education and issues of sustainable development of resources (including educational ones) will put increasing pressure on institutions to consider sharing and reuse of educational resources. ICTs are creating and impacting changes in learning and that technology should not simply be used to replicate traditional modes. More knowledge and research on implementation and impact is however needed. Organizational changes are required to allow and encourage innovation in education and most importantly teachers must be directly part of the implementation processes (Ossiannilsson, 2012).

The net is already a prerequisite for education that enables us to think in terms of ubiquitous active learning on a global scale. The educator's role is being reinvented and strengthened rather than threatened and the move towards cloud computing shifts the focus from technical issues to practical application of services and tools (NMC, 2011, p. 4-5).

Furthermore we see how the rise of open access, OER and social media offer completely new models for academic interaction and an increasing mismatch between traditional and new models (NMC, 2011, pp. 4-5). Social media offer more flexible routines for peer review and publication (crowd sourced reviewing, open journals, blogging etc.) but these are still not accepted by the academic mainstream. Openness is seriously challenging the dominance of prestige academic publications whose business models are threatened and as more alternative models emerge the conflict will undoubtedly grow. The question is whether academic publishers can embrace the openness of the net and find a new innovative business model. Clear educational policy statements from California to South Korea (both of whom aim to digitize all course literature by 2015) throw down the gauntlet to publishers to move online or perish.

3 Open Educational Resources (OER) towards Open Educational Practice (OEP)

Over the past few years a significant number of initiatives and projects have emerged to support the development and sharing of OER. The term describes digital materials offered freely and openly for use and re-use in teaching, learning and research usually under explicit terms of reuse, such as Creative Commons[4]. The term OER was first used in 2002 during a UNESCO forum on the potential of open courseware for higher education in developing countries. OER was developed to allow learning for all related to UNESCOs millennium goal and to support learning for everyone, not just those privileged to be enrolled on a programme in an educational institution and in addition to provide free qualified professional courseware for all. Most definitions agree that OER include content, software tools, licenses and best practices (Hylen, 2005; UNESCO, 2011). The initial idea of OER was to widen access to education, provide freedom for learners and take advantages of global experience and knowledge through networking. The model of OER can be articulated as to sponsor high quality open content, remove barriers, and understand and stimulate use for equal access for citizens globally as illustrated in Figure 1.

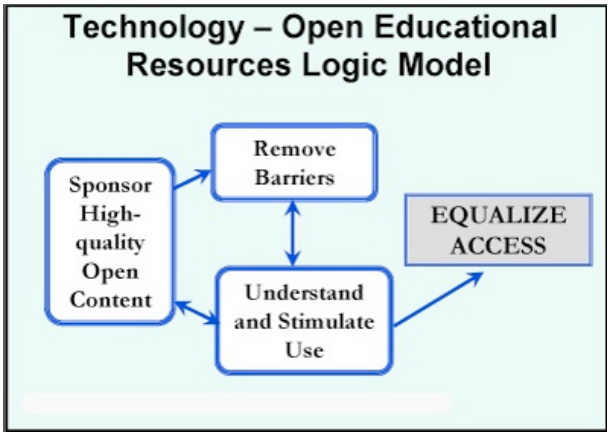

Fig. 1 - Technology –open educational resources logic model, (Geser, 2007)

OER provides freedom that can address barriers for individuals who otherwise may be excluded from meaningful educational opportunities (Lane, 2011). The drivers for the development are mainly UNESCO, Commonwealth of lear-

[4] http://creativecommons.org

ning and the OER university initiative launched in 2011[5,6]. As the development of OER and research around it has grown, the definition has been widened (Geser, 2007; OPAL[7]). Kanwar, Balasubramanian and Umar (2010) emphasize the practice and cultural aspects of OER such as empowerment processes that the OER movement demands various types of stakeholders and moreover that OER includes both material and pedagogical issues. Their definition is as follows:

"The phenomenon of OER is an empowerment process, facilitated by technology in which various types of stakeholders are able to interact, collaborate, create and use materials and pedagogic practices, that are freely available, for enhancing access, reducing costs and improving the quality of education and learning at all levels."

Figure 2 shows how the inner core of OER has been expanded into new wider concepts; open educational practice (OEP) and open educational culture (OEC), according to the OERu. As defined above this openness includes processes, various types of stakeholders and pedagogic practice. Thus it is not simply OER, but the context where they are used which is crucial, as elaborated by Ossiannilsson and Creelman (2012).

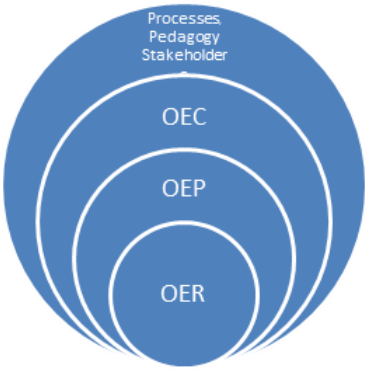

Fig. 2 - The understanding of OER, OEP and OEC where the processes, pedagogy and various stakeholders are involved (Creelman & Ossiannilsson, 2011)

Flexibility, accessibility, interactivity and personalization are well known as quality indicators in open learning, in relation to management, content and

[5] http://oeruniversity.com/OER_university

[6] http://wikieducator.org/images/c/c2/Report_OERU-Final-version.pdf

[7] http://132.252.53.70/

support to students and staff (Ossiannilsson, 2012). Quality issues in learning design for learning spaces including the use and reuse of OER are described by Conole (2012) as: comfort (a sense of well-being), aesthetic (recognition of symmetry, harmony, simplicity and fitness for purpose), flow (the state of mind felt by a learner when totally involved in the learning experience), equity (consideration of cultural and physical differences), blending (a mixture of technological and face-to-face pedagogical resources), affordances (action possibilities) and repurposing (potentials for multiple uses). Thus, there are several challenges in learning design and especially in the four traditional pillars of curriculum, assessment, accreditation and student support as seen in fig. 3. Bates (2008) claims that nothing will change without institutional strategy and major changes in the organization/design of teaching.

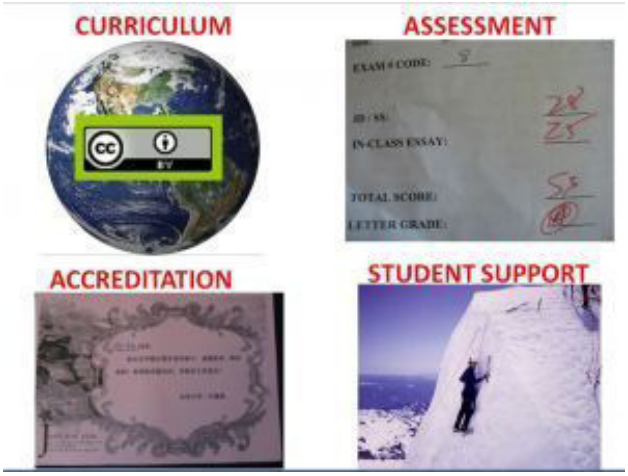

Fig. 3 - Challenges for implementation and sustainable practice of OER.

Various stakeholders have interests and responsibilities in the development, implementation and quality assurance of open educational practices and culture. According to UNESCO-COL (2011, p. 13) there are at least five groups of stakeholders to be considered: governments, quality assurance/accreditation bodies and academic recognition bodies, higher educational providers, teaching staff and student bodies. Students might be the sixth group as is seen below in Figure 4. For each of them urgent guidelines are proposed aligned with embedded quality issues (Ossiannilsson & Creelman, 2011).

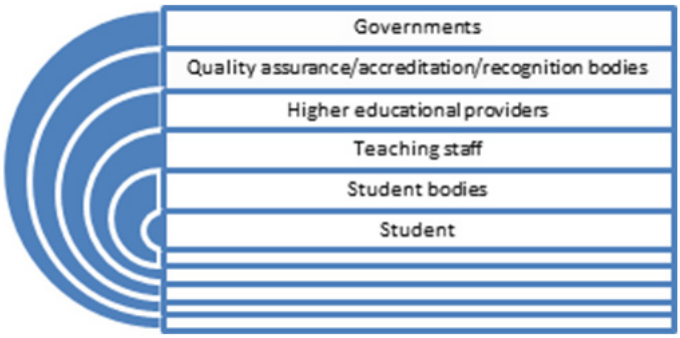

Fig. 4 - Stakeholders within the movement of OEP (Ossiannilsson & Creelman, 2012).

4 User generated content

The explosion in user generated content (UGC) over the last ten years offers both challenges and opportunities for higher education. UGC generally takes the form of blogs, wikis, podcasts, discussions and video material that students have produced as part of their studies but is freely available outside the walls of the university LMS/VLE. This type of material is sometimes classified as produsage (CONCEDE)[8] where the producer of the resource is also the user and the traditional boundaries between these roles have disappeared.

"In such models, the production of ideas takes place in a collaborative, participatory environment which breaks down the boundaries between producers and consumers and instead enables all participants to be users as well as producers of information and knowledge – frequently in an inherently and inextricably hybrid role where usage is necessarily also productive: participants are Produsers." (Bruns, 2007, p. 3)[9]

Here is a vast wealth of resources that are largely untapped by the formal education environment due to the lack of quality assurance. A recent European project, CONCEDE (2011), has proposed a quality framework for UGC based on a mix of self-evaluation, self-reflection, peer review and teacher-student peer review. The following fig. 5 shows a pyramid quality framework structure with institutional adoption at the tip. The framework is a bottom-up approach

[8] http://www.concede.cc/wp-content/uploads/2011/12/CONCEDE-QA-framework_Publication_20111206.pdf, p12.

[9] http://snurb.info/files/Produsage%20(Creativity%20and%20Cognition%202007).pdf

starting with learners collaborating and evaluating each other's work.

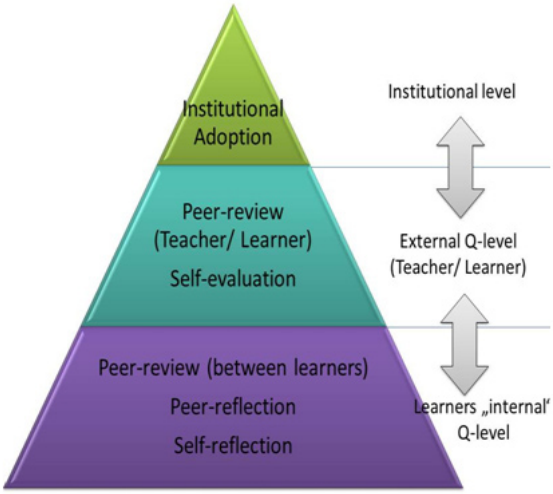

Fig.5 - Quality framework for UGC. CONCEDE (2011, p. 39)

One question that arises from the use of UGC is the fact that in many cases the process is more valuable than the product itself. Once the student blog or wiki has been produced it may not be of great value for other students since the creative process was the most valuable result. Future students studying the same subject would probably benefit more from starting a new creative process than simply reading the work of previous students.

5 The badge movement and quality

Considerable attention is today being focused on how to recognize 21st century skills acquired through informal learning. Hart (2012) describes the relation between formal and informal learning in terms of an iceberg where only 20% of all workplace learning is due to formal training initiatives. Formal learning normally takes place away from the normal work setting – in a classroom or at a conference. The remaining 80% takes place as a natural part of the work process; through interaction with colleagues, self-study, testing, collaboration etc. This learning goes largely unrecognized. The Open Badges initiative[10] was started by Mozilla Corporation to find ways of rewarding skills and achievements that have been gained informally and outside the bounds of formal education. Badges are certificates of achievement awarded by organi-

[10] https://wiki.mozilla.org/Badges

zations or peers, though outside the formal education system. Mozilla's open badge model has already been trialed on several courses run by Peer 2 Peer University[11]. In September 2011 the Mozilla Corporation launched the Badges for lifelong learning competition[12], with support from HASTAC and the MacArthur Foundation. The aim is to find credible and robust models for using badges to recognize skills that have been acquired informally. The involvement of such high profile supporters and the added involvement of the Department of Labor demonstrate the importance of informal learning for tomorrow's labour market.

Rewarding achievement through badges is already used in open source programming and gaming, generally awarded by peer recognition. Amongst programmers and gamers some of these badges have a higher credibility level than formal university qualifications. Badges are also common motivators in social networking services like Gowalla and FourSquare but are only valid in the context/service they are awarded in and the achievements recognized are generally of a trivial nature rather than a reward for measurable skills. Professional social networks like LinkedIn provide opportunities for peer evaluation where colleagues can write recommendations highlighting your skills and achievements. Badges could therefore be displayed on LinkedIn, Facebook and suchlike thus highlighting skills and competences not visible in the candidates' formal credentials.

The gaming element of badges is seen as highly motivating and game-based learning is one of the key education technology trends identified in NMC (2011). Visible rewards for achievement, so essential in gaming, create a sense of exclusivity and motivate the student to higher levels, as has been well demonstrated by Khan Academy[13].

The main obstacle to the success of Mozilla's Open Badges initiative however is credibility. Even if the badges are awarded by reputable organizations as a measure of real achievement it may take years before employers recognize them as credible alternatives to formal diplomas. It is essential that the badges can be linked to the awarding party and that they can be verified as genuine. The opportunities for fraud are clear and therefore transparency is essential in order to distinguish between genuine badges of achievement validated by an awarding body or credible peer group and self awarded badges or badges issued by degree mills or other bogus parties. Quality is the common denominator in all the areas discussed in this article: OER, user-generated resources, and open badges. A number of quality assurance initiatives are already investigating possible models that can clearly demonstrate the credibility of a resource of

[11] https://wiki.mozilla.org/Badges/Pilot_programs

[12] http://www.dmlcompetition.net/competition/4/badges-competition-cfp.php

[13] http://www.khanacademy.org/

award (CONCEDE[14], Epprobate[15], Sevaq+[16] etc.).

Universities have been experimenting with open online courses, MOOCs, for several years but have so far been unwilling to put the university's name on the certificate of completion. Stanford University's headline-grabbing Artificial Intelligence course in autumn 2011 attracted over 50,000 students worldwide but the certificates awarded were only signed by the course leaders and the Stanford logo was not used. In December 2011 however, MIT announced the launch of a potentially revolutionary initiative: MITx[17]. This is an extension of MIT Open CourseWare whereby all MIT courses are freely available online and can be followed by students anywhere in the world. Up till now such informal learners could not get any recognition for their efforts but MITx will award informal learners certificates if they successfully complete the course. The credentials will not be full MIT certificates, but the mere presence of the university's name will provide credibility and may in some cases be more valid internationally than credentials from local institutions in some countries.

The OER university partnership[18] goes even further by planning to examine and award full degree qualifications to informal learners who can meet their examination requirements. In this solution the informal learners will not receive an alternative certificate such as MITx but a full recognized degree.

"The OER university aims to provide free learning to all students worldwide using OER learning materials with pathways to gain credible qualifications from recognized education institutions ... Through the community service mission of participating institutions we will open pathways for OER learners to earn formal academic credit and pay reduced fees for assessment and credit."

The message for the future is that if you can meet our examination requirements and can provide an e-portfolio for assessment, we will award you a degree – whether or not you have studied with us.

Although it is impossible to foresee whether open badges and suchlike will become accepted by employers as credible credentials we can be sure that the future will see the further development of alternative learning paths and a greater diversity in accreditation and examination. The universities' monopoly in this field will end and new models will offer a much greater flexibility

[14] http://www.concede.cc/

[15] http://epprobate.com/

[16] http://www.sevaq.eu/

[17] http://web.mit.edu/newsoffice/2011/mitx-education-initiative-1219.html

[18] http://wikieducator.org/OER_university/Home

for students. The traditional campus university model is unlikely to disappear and may well retain its high status but those who are unable to participate in that model will have a wealth of alternative (and cheaper) options to choose between.

6 From proprietary to personalized higher education for the individual

Universities' implementation of OER and adoption of the paradigms of OEP and OEC may be considered along lines suggested by Murray[19]. Universities have to dare to go from proprietary to personalized higher education. OER are change agents for this movement to take universities outside their traditional comfort zone. Universities should no longer simply focus on their own curriculum, students, faculty life cycles and credentials. It is not any longer an our perspective. Instead universities may welcome the any perspective. Any students may come from any OERu, curriculum and faculty lifecycles to ask for credentials. Consequently the role of universities might be to offer OER to the OERu and to be the body of context providers and for credentials. Credentials might also be the responsibilities of other bodies as discussed above. The shifting roles for universities from *ours* to *any* according to Murray as above are illustrated in Figure 6.

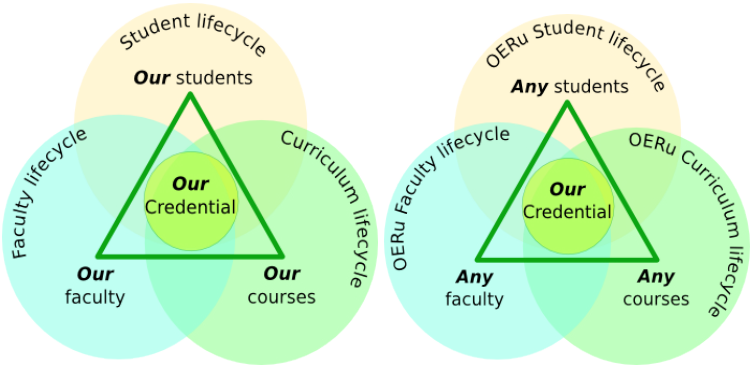

Fig. 6 - The traditional open learning model vs. The open education 2.0" model (Murray, personal communication UNESCO forum 14 November, 2011).

Conclusion

Society, and so even universities, are developing from resource and industrially based economies towards a knowledge-based economy. Demands for

[19] personal communication, UNESCO forum 2011/11/14

global and sustainable approaches in a lifelong learning perspective are in addition stronger than ever (Bates, 2008). Today's students with radically new attitudes to education, reputation, experiences skills and expectations present a major challenge to a system that is still heavily rooted in the traditions of the 19th and 20th centuries. Technology use is one of the key drivers for innovation and creativity and a change agent for transformation in society. Research indicates that ICT/e-learning can help meet these needs, but only if there is a parallel shift in the design and delivery of teaching. Above, all universities must develop overall strategies for full integration of e-learning fully involving academic departments/faculties and adapting administrative routines accordingly. Initiatives based on pioneers and early adopters is not enough anymore - full management commitment and government level support are essential (Bates, 2008, 2012; NMC, 2011; Ossiannilsson & Creelman, 2012).

The adoption of OER into mainstream university curriculum challenges many fundamental academic principles. Moving towards the adoption of OEP involves another leap of faith. The challenge for universities to embrace new principles of openness and see the benefits of offering alternative learning paths even for non-paying students is enormous. Innovative universities (MIT, Open University, OERu etc.) are realizing that openness does not mean cannibalizing the traditional core business and that free sharing of materials can rather strengthen reputation and influence. The tendency is a move from proprietary education where students are kept within the institution's walled garden to an open and personalized learning ecosystem where different models and institutions interact and complement each other. It is maybe significant that institutions that are most secure in their traditional academic excellence who are most prepared to go outside their comfort zone and move towards innovative alternative models. The one does not preclude the other.

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