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Introduction to Section 2: Producing, reusing and recreating OERs

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Open participatory learning ecosystems: Producing, reusing and recreating OERs

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If you are passionate about the potential of Open Educational Resources to transform learning you will have been inspired by the following claims: "The most profound impact of the Internet… is its ability to support and expand the various aspects of social learning". "Attention has moved from access to information towards access to other people". "Web2.0 blurs the boundaries between the producers and consumers of content".

These claims were made some years ago by John Seely Brown in his review of the potential impact of Technology on learning, Minds on Fire (2008). In his critique Brown claimed that the 'Open Educational Resources (OER) movement' – the network of people who support the development and embedding of a culture of open sourcing, open resources, open knowledge, free sharing and peer collaboration in society – have assembled building blocks that allow the emergence of 'open participatory learning ecosystems'. Why then has the production, reuse and recreation of Open Educational Resources not resulted in the sorts of dynamic ecosystems that Seely Brown predicted?

Transformational change towards a culture of open sharing requires everyone involved in the processes of learning and teaching to 'unlearn' their current beliefs, values and assumptions (Dede, 2007). Is the idea of 'unlearning' and moving away from known practices and values too challenging? Are teachers unwilling to change their professional practice? Do learners find it difficult to change how they learn? Or are the problems associated with organisational or technical challenges?

The six chapters in this section on 'Producing, Reusing and Recreating OERs' show signs of the emergence of open participatory learning ecosystems. But are the conditions right for learning? To understand the ecology, we have to consider the following questions. How might the use of OERs support learning? What are the binding forces within a knowledge ecosystem? What factors drive the formation and growth of a learning system?

What are the binding forces within a knowledge ecosystem?

To understand the binding forces around OERs within an open participatory learning ecosystem, we have to have an idea about what brings the different elements of the system together, One idea from socio-cultural theory is that people connect via so-called 'social objects' (Knorr-Cetina, 2001). For example, health professionals working on a common case will bring knowledge together from different disciplinary domains into a single case report (Edwards, 2010). The case report is the 'social object' that connects health professionals who are working together.

Some research suggests that a 'learning goal' could be a social object that binds people (Littlejohn, Margaryan, Milligan, 2009). However, OERs could also serve as social objects, binding learners and teachers as they work on a common problem

around an OER (or collection of OERs). In several chapters OERs have already been used to draw people together from diverse domains and to connect learners who have different starting points and different learning approaches.

If we try to visualise where knowledge resources are located within a network, the resources (including OERs) are the nodes of the network while the process of learning occurs between these nodes, sometimes binding them together (Falconer, 2008). Viewing resources as potential nodes in a network and learning as the dynamic interactions (of learners and teachers) that link these resources gives a clearer perspective on how we think about OERs and the role they play in learning. This idea is reflected in Chapter 6, where Okada and Leslie argue that learning is through "engagement around the content, and increasingly not just in engagement with a specific piece of content but an engagement with a network."

One of the factors that distinguishes an expert from a novice (who has a much simpler concept map of the collective knowledge space than a novice) is the ability to navigate knowledge as a holistic network with multiple links (Bradley, Paul and Seeman, 2006). Becoming competent could be viewed as the ability to perceive the links between loosely related knowledge fragments (Falconer, 2008).

Learners co-operating across different subject domains produce diverse sorts of knowledge resources, as by-products of their learning knowledge moves out of conventional domains into new contexts. While diverse knowledge can be useful in sparking creative ideas, it can also lead to a number of problems related to learning and using and creating knowledge across boundaries.

The fragmentation of knowledge across subject domains inhibits connections of learners and their use of OERs. In Chapter 6 Okada and Leslie report problems in using OERs to connect and share knowledge across boundaries. The authors sketch out how OERs can be remixed, reused and recreated. In their view OERs act as a boundary object that help knowledge flow across geographical, temporal and subject domains. They outline how OERs used in different domains have diverse meanings to different people.

Wolfenden and Buckler propose (in Chapter 8) that for learning to be meaningful, the content of the OER has to be authentic for each learner. Yet content might be interpreted differently by learners working together across knowledge domains. Marenzi and Nejdl (in Chapter 7) explored how OERs can 'help learners reach similar goals in different ways' and also identified the fragmentation of resources across portals as a problem. Videos tend to be in YouTube, while images dealing with the same subject tend to be in photo sharing sites such as Flickr. This issue is particularly problematic in social and collective learning, when learners (sometimes located in different places) try to connect.

Problems associated with filtering knowledge by groups of people working in different knowledge domains were also identified in Chapter 7. Diversification of knowledge can inhibit learning where learners do not have the knowledge practices to deal with it. Previous research has evidenced that, as different types of learning resources come on-stream, learners are unsure as to how they can use these resources for learning (Littlejohn and Margaryan 2010; Littlejohn and Margaryan 2006).

What factors drive the growth of a learning ecosystem?

A 'culture of reuse' is essential for the growth of a knowledge-rich learning ecosystem. This theme is repeated across the section. Okada and Leslie (Chapter 6)

illustrate two case studies of encouraging culture change so that teachers (and learners) embed open knowledge sharing practices in their day-to-day practice. While evidencing success, the case studies highlight the difficulty in changing practice and triggering culture change. Similarly in Chapter 10, while reporting some successes, Bujokas, Rothberg and Prata-Linhares illustrate a steep barrier to change in their media literacy work with teachers in Brazil.

Surprisingly little emphasis was put into identifying appropriate drivers for change. A range of benefits models have be identified through evaluation of the UK JISC Open Educational Resources Programme (Littlejohn et al, 2011). These benefits models have been shown to drive change at individual and institutional level and to improve open sharing and release of OERs. Benefits include individual showcasing (for reputation enhancement or personal and professional reward); institutional showcasing (to showcase to potential learners and open new markets); capacity building (to improve staff competencies or for sustainable development); to share and exchange resources through tightly-knit communities; or for public interest (to open knowledge to the public). Even though culture change was identified as an essential factor in successful open sharing of OERs, few of these benefits models can be found in the case studies in this section. Drivers for change were either at institutional level (eg economic benefits, reputational benefits etc) or individual level (eg fun, time saving etc).

Okada and Leslie (Chapter 6) illustrate how users can become 'active participants and creative coauthors' of OERs. They argue that social environments offer a 'collective space for authoring' 'new ways for users sharing not only their production, but also new ways of producing it'. The authors illustrate a sensemaking process (OER flow) which potentially fits learners' knowledge-mapping and knowledge creation practices. Through this sensemaking process learners not only (re)use but adapt, create and contribute OERs to the collective. While this process helps to encourage the reuse, creation/release and mixing of different types of OERs, the process is limited in offering users a means of navigating the collective knowledge, particularly areas of knowledge beyond the boundaries of their subject domain. The case studies used 'OER maps' as a means of helping learners navigate the knowledge domain, with some success.

Pro-sumption can be naturally introduced into learning through storytelling. In Chapter 9, Smeda, Dakich and Sharda illustrate how digital storytelling can be used to trigger collaborative learning, integrating OERs through a shared narrative. However, the ideas presented fall short of providing a way in which learners navigate and find relevant knowledge within the pool of the collective knowledge. Wolfenden and Buckler (Chapter 8) also found the culture of both consuming and at the same time producing is not common in teaching practice. They examined ways in which teachers adapt OERs for reuse and conclude that the 'limited familiarity of… users with being pro-sumers rather than consumers of educational materials' was a major barrier.

In Chapter 11, Rojas et al successfully demonstrate culture change within a community of teachers' who connect, collaborate and openly share OERs for assessment. Culture change through collections of resources have achieved, encouraging reuse in niche areas (eg assessment resources, subject-centred resources etc). However sharing resources for specific purposes may not help integrate the diverse types of OERs required within an open participatory learning ecosystem.

Reflections on building a knowledge ecosystem

Reflecting upon the key messages abstracted from section B, some key messages can be abstracted:

Firstly, *OERs act as nodes in a network and learning takes place around these nodes.* Learning can be viewed as the interactions (of learners and teachers) between these resources. This perspective provides a clearer picture of the role OERs play in learning.

Secondly, *OERs connect learners, however the connection processes are unclear.* The chapters in section B surface a number of ways OERs can bring together learners and teachers – including those from diverse domains - the connection processes and triggers are still unclear.

Thirdly, *understanding the relationship between the individual and the collective and the implications for learning is fundamental to appreciating how OERs can impact social learning.* Yet we know relatively little about how OERs can connect the individual with the collective knowledge.

Fourthly, a *culture of open sharing is important in driving the formation and growth of open participatory learning ecosystems.* Yet culture change requires 'unlearning' ideas, values and attitudes, which can be challenging for learners and teachers.

Research is already raising questions around what constitutes 'literacies' and how these might support social learning processes (Beetham, McGill & Littlejohn, 2008; Beetham, Littlejohn & Milligan, 2011). However, *we need to understand how learners can best 'chart' the collective knowledge to achieve their learning goals*.

Finally, *the ability to consume and, at the same time, produce knowledge and release it to the collective is important to sustain a dynamic open participatory learning ecosystem.* To learn through using and creating knowledge, learners – and teachers- have to have the knowledge practices to become knowledge creators.

It seems we're only scratching the surface of our understanding of how open participatory learning ecosystems can be implemented and sustained. But the natural rhythms of evolution will take some ideas forward and leave others behind. Read this section for insight and inspiration.

References

Beetham, H, McGill, L. and Littlejohn, A (2008) Thiving in the 21st Centuary: Learning literacies for a Digital Age (LLiDA), JISC Final Report
http://www.jisc.ac.uk/media/documents/projects/llidareportjune2009.pdf

Beetham, H, Littlejohn, A and Milligan, C. (2011) Digital literacies for the research institution, Handbook of Digital Dissertations and Theses, Sage: London

Bradley, J.H., Paul, R. and Seeman, E. (2006) Analyzing the structure of expert knowledge. Information and Management, 43, 77 – 91.
Brown, J.S. (2008) Minds on Fire: Open Education, the Long Tail, and Learning 2.0
http://www.educause.edu/EDUCAUSE+Review/EDUCAUSEReviewMagazineVolume43/MindsonFireOpenEducationtheLon/162420

Dede, C. (2007) Transforming Education for the 21st Century: New Pedagogies that Help All Students Attain Sophisticated Learning Outcomes, NCSU Friday Institute (February 2007) http://thenetwork.typepad.com/files/dede_21stc-skills_semi-final.pdf

Dron, J. (2003) The blog and the borg: a collective approach to e-learning In: E-learn 2003: world conference on e-learning in corporate, government, healthcare and higher education, Nov. 2003 Phoenix. Association for the Advancement of Computing in Education, Norfolk, Va, pp. 440-443. ISBN 1880094509

Dron, J. (2004) A loophole in Moore's law of transactional distance In: Proceedings of the 4th IEEE International Conference on Advanced Learning Technologies, Joensuu, Finland, 30 August - 1 September 2004. IEEE Computer Society, Los Alamitos, Ca, pp. 41-45. ISBN 0769521819

Dron, J., & Anderson, T. (2009). How the Crowd Can Teach. Handbook of Research on Social Software and Developing Ontologies London IGI Global(Vol. Handbook o, pp. 1-17). IGI Global. Retrieved from http://www.igi-global.com/viewtitlesample.aspx?id=48657

Edwards, A. (2010), Learning how to know who: Professional learning for expansive practice between organizations Learning across sites, New Perspectives on Learning and Instruction (Eds S. Ludvigsen, A. Lund, I. Rasmussen and R. Saljo)

Keen, A. (2007) The Cult of the Amateur: How Today's Internet Is Killing Our Culture Assaulting Our Economy, Random House, New York

Knorr-Cetina, K (2001) Objectual Practice. In Schatzki, T. R., Knorr-Cetina, K., & Savigny, E. V. (Eds). The practice turn in contemporary theory. p175-188 Routledge. Retrieved from Retreived from: http://kops.ub.uni-konstanz.de/bitstream/handle/urn:nbn:de:bsz:352-opus-81918/kcobjectualpractice.pdf?sequence=1

Margaryan, A., & Littlejohn A. (2008). Repositories and communities at cross-purposes: Issues in sharing and reuse of digital learning resources. Journal of Computer Assisted Learning (JCAL), 24(4), 333-347

Littlejohn, A., Beetham, H., McGill, L. and Falconer, I. (2011) Factors affecting the release of Open Educational Resources, TD-Technologie Didattiche, Volume 51, No 1 ISSN 1970-061X (August 2011)

Littlejohn, A., Margaryan, A. and Milligan, C (2009) Charting Collective Knowledge: Supporting Self-regulated Learning in the Workplace, Proceedings of the 9th IEEE International Conference on Advanced Learning Technologies (ICALT 2009) July 15-17, 2009, Riga, Latvia

Schmidt, H. G., Norman, G. R. and Boshuizen, H. P. A. (1990). A Cognitive Perspective on Expertise: Theory and implications, Academic Medicine, 65 (10), 611–621

Paavola, S., & Hakkarainen, K. (2005). The knowledge creation metaphor: An emergent epistemological approach to learning. Science and Education, 14(6), 535-557

Paavola, S., Lipponen, L., & Hakkarainen, K. (2004). Models of Innovative Knowledge Communities and Three Metaphors of Learning. Review of Educational Research, 74(4), 557-576. AERA. Retrieved from http://rer.sagepub.com/cgi/doi/10.3102/00346543074004557

Siemens, G. (2005) Connectivism: Learning as Network-Creation http://www.elearnspace.org/Articles/networks.htm

Surowiecki, J (2004) The Wisdom of the Crowds, Random House, New York