



Scaling up Open CPD for Teachers in Higher Education: A Snowballing Approach

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ABSTRACT

In this paper, we explore the snowballing approach developed for the openly licensed course Bring Your Own Device for Learning (BYOD4L) and the opportunities this presents to open cross-institutional CPD and open course development more generally.

BYOD4L is a course for teachers and students in higher education which aims to help them gain both a better understanding of and develop their knowledge and skills in using their own smart devices for learning, teaching and professional development. BYOD4L has been developed by the authors and offered three times since 2014 with colleagues and students, participating Higher Education Institutions (HEIs) from the UK and Australia and further collaborators in the US and Germany.

The development of the snowballing approach is shared using an action research methodology. We propose a rethink of current CPD practices. We invite course designers, academic developers and the wider academic community to explore new and emerging models of CPD that capitalise on scalable collaborative open educational practices.

Keywords: open educational practice, BYOD, open CPD, mobile learning, cross-institutional collaboration, scaling up

Context

Career guidance is a small but distinct profession concerned with supporting people to make choices about their future, to navigate the worlds of work and learning, to plan and implement lifestyles they find rewarding. Career guidance practitioners can be found working with young people or adults in state sector career services, notably Skills Development Scotland (SDS), in schools, universities and colleges, in community based settings, or in private practice. The profession has a well-established entry route, with universities offering initial training programmes leading to a postgraduate diploma. In recent years, the context for this initial training has become surprisingly complex. There are a number of factors to take into account at international, UK, and Scottish levels.

Teaching in HE in the UK has been professionalised in recent years (Dearing Report, 1997; DfES, 2003; Browne Report, 2010), and it is recognised that the initial and continuous professional development of teachers in HE and others who support learning has a significant impact on the quality of teaching and the student experience (BIS, 2011). Provision for all staff teaching or supporting learning, including associate lecturers, part-time and full-time academics is available in UK institutions. This includes teaching qualifications and professional recognition as well as workshops, courses, tailor-made provision and one-to-one support offered within HEIs. Other providers such as the Higher Education Academy, JISC, SEDA, ALT and other organisations and professional bodies also offer CPD in the form of conferences, symposiums, seminars, workshops and courses. More recently, webinars and open courses are offered.

While institutional offerings and related practices provide full control and the opportunity to develop and tailor activities linked to the local context and priorities, institutions might also consider opportunities presented by more joined-up and open provision that will foster collaborative cross-institutional approaches and benefit the wider academic community, especially as resources are often tight and expertise distributed. For too long, universities have operated in silo cultures. Cochrane, Antonczak, Keegan and Narayan (2014) advocate the need for collaborative approaches and more outwards-facing strategies with the potential to connect learners, teachers and the wider community in authentic and creative ways. Open educational practices could maximise on co-creation, co-construction of knowledge and innovation based on joined-up thinking and actions.

We define open CPD as 'professional development opportunities afforded by open educational practices, such as open courses, online and face-to-face events and Massive Open Online Courses (MOOCs) as well as Open Educational Resources (OER) and materials freely available and accessible in the digital and physical world which create opportunities for self-directed and self-organised CPD driven by professional interests, priorities and aspirations'.

The participatory web and social media played a vital role in increasing active digital engagement and sharing in online networks and communities as well as creative expression (Gauntlett, 2011). Since 2008, and especially with the birth and explosion of MOOCs in 2012, educators have started participating in such offerings proactively as part of their informal CPD. While there is

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criticism regarding MOOCs, there is also evidence suggesting they work better for highly-qualified individuals who have the confidence and competencies in open spaces as well as the skills to participate and learn in networks. Laurillard (2014a, 2014b), for example, writes that MOOCs are a vehicle to reach such professionals en masse and provide free professional development for them. Weller (2014), however, stresses that openness is an important driver for innovation and reminds us that we shouldn't "replace one mono-culture with another". There is a whole world out there beyond MOOCs. Alternative open educational practices, including grass-roots initiatives, often not funded and openly licensed (Nerantzi, 2014b), play a vital role in advancing open practices as they often adopt more experimental approaches.

In KnowledgeWorks (2012, p. 2), it is noted that "teaching and learning have become uncoupled from traditional educational institutions and are now available through and enhanced by a vibrant learning ecosystem." This uncoupling goes deeper. Learning is no longer one-directional – driven or orchestrated by experts. On the contrary, learning happens through co-creation of knowledge and within communities and networks. Learning is personalised in a social context. Learning structures are flattened, are non-hierarchical, and participants and facilitators become co-learners and co-researchers. The community itself becomes the curriculum (Cormier, 2008). Technologies enable these changes. Wenger, White and Smith (2009) talk about "digital habitats where informal learning happens in communities of practice" and individuals come together to share experiences and concerns that unite them. Luckin et al. (2010) present the Learner Generated Context model as an opportunity for change of informal and formal educational practices. They discuss how learning and teaching is changing and that boundaries are blurring. Conole (2013) makes similar observations. According to Luckin et al. (2010), this change is a result of the digital tools we have available today and how they are used by individuals to become creators of knowledge independently of their role as learners or teachers. Jackson's (2013) concept of learning ecologies as a dynamic system of goals, process, relationships and resources interconnected with the world around us has also influenced our thinking around open CPD. Consideration was given to how this could be scaled up through informal cross-institutional collaboration to maximise on human interactions, relationships and "learning friendships" (a term used by Marc Coenders, mentioned in Wenger et al. [2009, p. 4]) within social and technology-rich spaces and drive individuals and the community collectively into the future through self-defined learning goals and actions. Luckin et al. (2010) acknowledge that support is needed to scaffold learning and propose the 'PAH continuum'. This framework presents a developmental pathway towards learner autonomy and self-directedness in which pedagogy, andragogy and heutagogy (PAH) are used as stepping stones to achieve this as control is progressively moved from the teacher to the learner (Garnett & Ecclesfield, 2014). When control has been transferred completely to the learner, self-determined learning and self-efficacy are practised, known as heutagogy (Hase & Kenyon, 2000).

Redecker et al. (2011) see the future of education as collaborative, informalised and personalised. According to Cochrane et al. (2014) it is mobile too as they define their Post Web 2.0 continuum using the PAH continuum, which reminded us of Ramsden's (2003) three main theories of teaching in higher education (see Figure 1).

1995	2005	2013
Web 1.0	Web 2.0	Mobile
Teacher	Student	Collaboration
LMS	eportfolios	Connectivism
Content delivery	Student generated content	Student generated contexts
PowerPoint	Slideshare	Mobile social media
	Social learning	Creativity
	Building communities	Active participation in professional communities
Pedagogy	Andragogy	Heutagogy
Theory 1: Teaching as telling, transmission or delivery – PASSIVE	Theory 2: Teaching as organising or facilitating student activity – ACTIVE	Theory 3: Teaching as making learning possible – SELF-DIRECTED

Figure 1 Post Web 2.0 continuum (Cochrane et al., 2014); in grey: Ramsden (2003)

HEIs need to change and adapt if they want to survive and thrive. The European Commission (2013) makes an important point emphasising that HEIs across the European Union (EU) would benefit from collaborating more so that students and staff across the EU can experience richer opportunities to learn and develop together in the connected world.

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Individuals who are 'at home' in the digital spaces and see them as an extension of their normal life – having the confidence, persistence and a voice – thrive there. Findings from the Digital Practitioner research project (Ecclesfield, Rebbeck, & Garnett, 2012) carried out in Further Education provide evidence that such practitioners are open to active experimentation and exploration, seeing it as part of their everyday practice to enhance the student experience. It is our view that digital practitioners in all sectors of education seem to currently benefit the most from opportunities in the open, pursuing personal and professional interests and developing their practice further. Practitioners today have access to an extensive and versatile open CPD menu from which they can pick 'n' mix activities that are meaningful and useful for them. This places the digital practitioner, now more than ever, in the driving seat of their own development (Ecclesfield et al., 2012). However, there are still practitioners who wouldn't call themselves 'digital practitioners', nor are they digital residents who live online, share ideas and experiences with others and form relationships there (White & LeCornu, 2011). Are these the dinosaurs of the digital age? Support and scaffolding is needed for change, a culture change (Cochrane et al., 2014).

What type of provision could potentially help academics and their institutions engage and take full advantage of the opportunities open CPD presents for their own professional development? Garnett and Ecclesfield (2014), referring to the 'craft of e-teaching', note that "we will need professional development programmes which stretch both the teacher's pedagogical understanding, across the PAH continuum, as well as their understanding of the potential of technology to support learning and teaching across this continuum". Research linked to the Digital Practitioners Framework (Bennett, 2014) Access – Skills – Practices – Attributes, developed for HE, also presents a scaffold to build confidence, competence and behaviours and shows that the main driver for engagement in CPD was that it enabled practitioners to have a positive impact on student learning. These frameworks, together with findings that collaborative professional development for teachers in HE increases its effectiveness (King, 2004; Crawford 2009; Cochraine et al., 2014), provide useful lenses for further exploration in the context of academic development – shaping provision and assisting the development of digital practitioners in an open context. CPD is thereby valued and responsive to the needs of practitioners.

The changes in recent years and the shift towards more open practices have shown that staff in institutions are also looking outwards towards CPD offerings, some of which are open. As the technology is now easy to use, some developers engage in what Garnett (2013) calls "disruptive collaboration" through which new grass-roots collaborative practices are emerging among distributed practitioners. The case presented here is such an example. We extend the idea of open CPD and propose a snowballing approach for collaborative cross-institutional open CPD that can be scaled up. For example [Bring Your Own Device for Learning](#) (BYOD4L) – a short open course – has been designed as an open professional development opportunity aiming to create opportunities for meaningful interactions and learning within versatile communities and networks as a scalable offering. Participants select the opportunity to engage and participate based on their professional needs and aspirations and enact a heutagogical approach, as it is self-directed and self-organised development.

BYOD4L, an un-course?

Firstly, there have been international comparisons of career guidance training (CEDEFOP, 2009) and attempts to develop transnational vocational competences for the profession (IAEVG, 2003; Schiersmann, 2012). These occur against a wider backdrop of a growing international higher education marketplace.

Secondly, there are UK-wide factors to consider. The devolution of responsibility for statutory career guidance services to Scotland, Wales, and Northern Ireland has resulted in a divergence of policies in the four home nations (Watts, 2006). Policy in England has been radically different from that of the 'Celtic' nations and has led to a near collapse of the already vulnerable profession (Roberts, 2013). This policy context presents considerable challenges for a training structure that is intended to be UK wide.

BYOD4L was developed for teachers and students in HE who are interested in learning about how they could use their smart devices for learning and teaching and are keen to experiment with new pedagogical ideas and build confidence and capacity in such approaches. BYOD4L was offered over five days and was accessible via smart devices, enabling and encouraging participants to experience learning with their own devices. To help learners achieve this, the aim was to provide a supportive learning community that enabled learning among teachers and students as equals and in partnership (Cormier, 2008) with dedicated facilitators using a coaching approach (Whitmore, 1993). This was done through peer support which fosters reflection, shared active experimentation and open feedback, based on individual development needs and aspirations as well as self-defined learning goals loosely linked to the 5C Framework which was developed for BYOD4L (Nerantzi & Beckingham, 2014; Nerantzi & Beckingham, 2015, in print). The 5Cs (connecting, communicating, curating, collaborating and creating) provide a thematic and pedagogic framework for engagement and learning. This provides a scaffold for developing confidence and competence in using smart devices for learning and teaching based on a pedagogical approach that builds on prior knowledge and progresses from simple to more complex uses and applications of smart devices.

The site and associated learning spaces were built using social media tools and included Wordpress, Twitter, Google+ and Facebook. The 'home site' was created using the blog tool Wordpress (www.byod4learning.wordpress.com). There is a [Google plus community](#) and a [Facebook community](#). A substantial amount of interaction took place in Twitter where @BYOD4L was used to communicate to the learners and the course hashtags #BYOD4L and #BYOD4Lchat were used to interact and curate conversations. Nothing is locked away or private, except the community space for facilitators which was used for coordination and support among the organising team. Participation does not require registration.

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BYOD4L is a collaborative effort. We used open educational resources (OERs), including repurposed OERs, many co-developed with others, modelling OER production and practice, building on the knowledge of professional networks and collaboration (White & Manton, 2011), and a wider ethos of collaborative course creation (Laurillard, 2012; Salmon, 2013).

The pedagogical approach named FISH is enquiry-based learning. FISH, stands for **F**ocus – **I**nvestigate – **S**hare (see Figure 2) and is an openly-licensed, simplified Problem-Based Learning model developed initially for the open course *Flexible, Distance and Online Learning* (FDOL) by Chrissi Nerantzi and Lars Uhlin (Nerantzi, 2014b). The use of short video scenarios capturing the student and teacher perspective became learning triggers. These enabled individuals and groups to pick ‘n’ mix and make informed learning choices. The activities menu included both synchronous (hangouts and tweetchats) and asynchronous opportunities, linked to the 5Cs, which further contributed to a scaffolded approach to individual and collaborative learning. Participants engaged in conversations, shared ideas and concerns, created artefacts and actively experimented with new approaches they found useful for their practice.

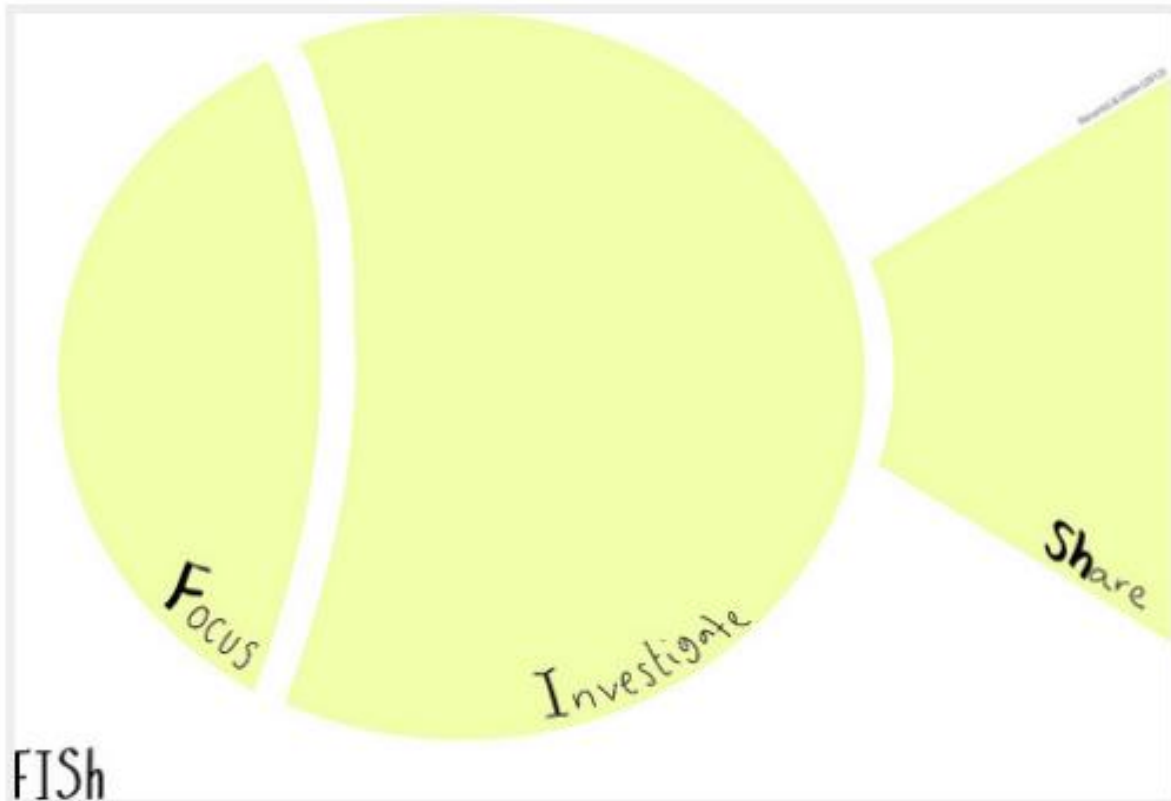


Figure 2 FISH > Focus – Investigate – Share, Nerantzi and Uhlin (2012)

Informal engagement in BYOD4L and learning linked to the 5Cs could lead to the acquisition of open badges by participants, facilitators and mentors via <https://credly.com/>. The badges provided recognition for informal learning using a peer review process via the submission of evidence in digital portfolios. Furthermore, BYOD4L became part of the FLEX offering, an openly-licensed CPD programme developed at Manchester Metropolitan University which provides a formal CPD pathway. Work completed during BYOD4L could be submitted to gain up to 30 credits towards the Postgraduate Certificate in Academic Practice (PGCAP) or the MA in Academic Practice through completing work that meets the assessment requirements of the relevant FLEX modules. This is an example of how informal and open learning can be formalised and contribute towards an academic qualification.

Below are the developmental stages of BYOD4L and the scalable open CPD model that evolved through this process. The model creates opportunities for course designers to start small and scale up – a practice-based solution that can be developed and applied without costly investment, through the sharing of resources and expertise, capitalising on professional networks and presenting a more sustainable solution.

Methodology

Action research has been applied in the form of iterative spirals of reflective inquiry leading to new understandings, ongoing improvement and further development of the intervention (Lewin, 1946; Reason & Bradbury, 2007), as a participatory form of enquiry into individual practice, researchers, facilitators and participants actively engaged in the research process to bring democratic

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change. This reminds us of Freire's (2011, p. 72) words: "Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world and with each other."

We worked together collaboratively as researchers on the ground to analyse practice, evaluate ongoing changes and problem-solve collaboratively. We used shared observational, reflective and evaluative data such as shared portfolios and postings in social media spaces as well as survey instruments and conversations by participants, facilitators, mentors and organisers to create knowledge through action (Schön, 1987).

The development of the snowballing approach for scalable cross-institutional CPD

Snowballing is an activity used within education (Kember & Gow, 1992; Thomas & Carswell, 2000). A series of tasks resemble the progressive growth of a snowball. A snowballing activity usually starts from an individual task and progressively more people are brought in to work together on further tasks to problem-solve and build knowledge collaboratively until all voices are brought together. Snowballing activities reminded us of BYOD4L, especially how the course was scaling up, and we therefore decided to call the approach 'snowballing'. The three iterations of BYOD4L are presented below and the snowballing approach is described. The initial design stage has been included.

As BYOD4L is a registration-free course and participation was not tracked, there are no exact numbers of participants available. However, overall growth was observed, mainly through visible Twitter participation.

Development cycle: The makers are making

BYOD4L is a DIY project carried out by two professional friends, the authors of this paper, who became the makers. The project was born out of a conversation and grew through remote collaboration, professional commitment, trust and a shared vision (Figure 3). Individual strengths were used to create BYOD4L and support each other in the development of new skills, practices and problem-solving. Development started in November 2013, and the first iteration of BYOD4L was launched in early January 2014. Subsequent iterations of the course include enhancements as part of the developmental process.

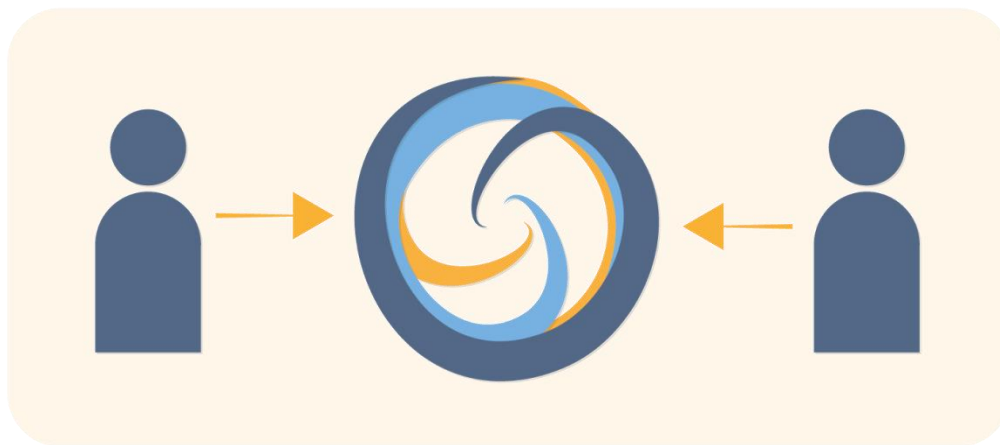


Figure 3 The makers are making

Figure 4 depicts the key used in subsequent sections of this paper.



Figure 4 Key

Previous experience of collaborative open course design, practice and research in the context of informal cross-institutional collaboration (Nerantzi, 2014a; Nerantzi, 2014b) became the starting point of new thinking that emerged to maximise sharing of resources and expertise, provide choice and enrich exchanges and collaborations beyond institutional walled gardens. Collaborative and enquiry-based pedagogies informed the design. BYOD4L was peer reviewed to assure quality and help gain valuable feedback prior to the start date. Facilitators were also invited to comment. The small unit of makers was helpful in coming to agreements quickly, thereby proactively co-developing the course, activities and resources.

First iteration: Cottage industry

Colleagues from our professional networks were invited to join the first iteration in January 2014. The BYOD4L team consisted of 10 facilitators and one artist from HEIs in the UK and Australia. A variety of job roles were represented: academic developers, learning technologists, researchers and lecturers. The collaboration among the team was informal and based on goodwill, professional trust and resembled a cottage industry (Figure 5).



Figure 5 Cottage industry

A facilitator buddy system was developed to support each other and share responsibilities as for many this was the very first time acting as an open facilitator and all were in full-time employment. Guidelines linked to the facilitator role were openly developed with the team. The buddy system and Facebook support space created had a significant impact. We used motivational strategies (including the use of a 'team online hangout') to build community among facilitators in advance and during the course. This helped facilitators get to know each other really quickly and created a positive atmosphere and commitment.

Second iteration: Scaling up

After January 2014, the interest in BYOD4L grew. Increasingly, BYOD4L was seen as a valuable CPD opportunity for both facilitators and participants. Some participants from the first iteration joined the second iteration as facilitators, and others joined again as participants, evidencing the CPD value of BYOD4L. It was based on a thematic, enquiry-based approach that enabled authentic learning within a community through which the curriculum emerged and further learning opportunities were identified.

As there was also institutional interest to join BYOD4L as informal institutional partners, it was time to adjust the approach. Scaling up was needed to meet the demand and continue to provide an engaging and meaningful experience to participants and facilitators.



Figure 6 Scaling up

In July 2014, the informal cross-institutional model was offered for the first time in collaboration with five institutions: Manchester Metropolitan University, Sheffield Hallam University, the University of Ulster, the University of Sussex and London Metropolitan University. Each was given an institution page on the BYOD4L site where further details about local happenings linked to the course were shared. Three further colleagues from other HEIs joined the facilitators' team, and the buddy system was used again. The total number of collaborators increased to 20. There were 16 facilitators from eight HEIs (Figure 6). BYOD4L was now, for some, simultaneously an online distributed and blended offering. However, the growth of the facilitation team was disproportionate to the needs and, together with more irregular involvement by some facilitators during the week, made it challenging at times. We felt the need to rethink and streamline the facilitation approach and institutional involvement in readiness for the next iteration.

Third iteration: Strengthening the model

After July 2014, we reflected upon the experience and reviewed the approach again. This process helped refine the strategy for institutional engagement, facilitation and how scaling up could be further improved. It was decided that the facilitation team should be reduced and consist of just two facilitators from each participating institution. For the first time, student facilitators were identified and joined the team. Colleagues who were interested in supporting participants could join as mentors. Furthermore, facilitators would commit to facilitate throughout the week, while mentors would have a much lighter supporting role. These changes meant that the team was smaller and would grow in proportion with the number of participating institutions. The roles of the facilitator and mentor were redefined and clarified.



Figure 7 Strengthening the model

The new strengthened approach (Figure 7) was implemented in January 2015, with 9 participating institutions in the UK and two further collaborators from the US and Germany. In total, there were 22 facilitators and 9 mentors. Three of the UK institutions invited a student facilitator. Further thinking is needed to strengthen the engagement of student facilitators. Some facilitated small group learning activities during the week.

Looking back and forwards

The above action research cycles linked to the development of the snowballing approach as a method to scale up open CPD and provide an insight into evolving experimental practices and opportunities to increase informal collaboration among HEIs, their staff and students in the area of professional and personal development. Key characteristics are summarised in Figure 8.

We are currently

- carrying out action research with a group of BYOD4L facilitators to establish ways to increase institutional buy-in. This has been identified as an area that is still relatively weak.
- developing a new open cross-institutional and cross-cultural initiative around Flexible, Open and Social Learning. The snowballing approach will be refined and tested further together with scaffolding learning using the 5C Framework, and new features will be introduced linked to cultural awareness and rewarding learning.

Cottage industry	Scaling up	Strengthening
<ul style="list-style-type: none"> open educational offering based on informal collaboration facilitators selected from professional networks buddy system developed for facilitators 	<ul style="list-style-type: none"> open educational offering with cross-institutional participation facilitators from participating institutions and elsewhere buddy system used for facilitation but sporadic engagement possible 	<ul style="list-style-type: none"> open educational offering with cross-institutional participation facilitation team from participating institutions facilitation throughout the week student facilitators mentor role introduced, light support role facilitated small group learning was introduced

Figure 8 Main characteristics and changes

Lessons learnt so far and conclusions

The focus of this paper is the development of the snowballing approach that enabled us to join and scale up BYOD4L, a professional development opportunity for teachers and students in HE. Through an action research methodology, BYOD4L progressively evolved and led to changes that transformed it from a distributed initiative by and for a few to an extended cross-institutional collaboration stretching beyond the UK. It enables scaling up or down depending on the number of participating institutions. Below are the main lessons learnt and ideas for consideration.

- Start small:** The open scalable CPD approach developed for BYOD4L (implemented and reviewed three times so far) shows that starting small is a valuable option. After all, this is how businesses start. The proposed model provides an alternative, more sustainable solution for open educational offerings in HE. It capitalises on professional networks, distributed expertise, shared and open educational resources and allows for dynamic experimentation, grass-roots innovation and integration with existing informal and formal practices. The approach used resembles what Weller (2011, 2014) calls “little OER”.
- Collaborate:** Developing and offering BYOD4L collaboratively with colleagues from different disciplines and institutions created a rich and varied pool of expertise and experiences. Such collaborative approaches have been highlighted as important (Laurillard, 2012; Salmon, 2013). It enabled facilitators and mentors to share and peer review practices in a supportive and collegial environment, leading to individual and collective growth (Nerantzi, Middleton, & Beckingham, 2014).
- Blend:** Learning happens everywhere. Blended opportunities for learning in digital and non-digital spaces enrich an offering and enable learners to contextualise and make meaningful connections locally and globally. Such opportunities may refer to blended locations, events, use of technologies and learning approaches. This was an important feature of BYOD4L. Blended, hybrid or mixed mode approaches integrate face-to-face and online (Graham 2006; Littlejohn & Pegler, 2007), enable flexibility, develop social presence and can enhance both the face-to-face and virtual experience (Hostetter & Busch, 2013).
- Go for authentic learning:** Content is everywhere. Maximise on what learners bring and create opportunities for rich interactions and authentic, individual and collective enquiry that can be applied to practice (Nerantzi, 2014b). Such an approach was used for BYOD4L and maximised knowledge within the community and learning with and from each other (Cormier, 2008; Wenger et al., 2009; Luckin et al., 2010).
- Remember to support:** Peer learning does not happen automatically and can exclude learners who are not ready for this type of learning. Effective facilitation can make a real difference for open learning (Nerantzi, 2011). In BYOD4L, an inclusive and scaffolded peer learning approach was promoted. Facilitators and mentors played a vital role in this process. The facilitator and mentor buddy system used boosted confidence and competence in facilitation and became a valuable support mechanism for participants. Applying support strategies widely used in coaching and applying techniques from push to pull (Whitmore, 1993), together with the 5C Framework, progressively boosted peer learning.
- Give social media and OER a go:** Freely available social media platforms were used to develop and offer BYOD4L via practitioners as DIY course creators. This capitalised on the participatory and creative nature of social media and what these enable (Gauntlett, 2011). Existing OERs were reused and adapted and new OERs co-created and embedded only where necessary (White & Manton, 2011). Checking what is out there already and what can be reused and adapted collaboratively should be considered, as it might present a more sustainable course development solution.

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The snowballing approach provides food for thought for open course designers in academic development as well as colleagues working in other professional areas and disciplines interested in scaling up provision through informal cross-institutional collaboration. Our mantra would be that there is no need to reinvent the wheel. Creating better interconnected wheels together with others and connecting them is more valuable. The journey continues...

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Biographies

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Sue Beckingham is an Educational Developer, taking a Faculty lead role for technology enhanced learning at Sheffield Hallam University. Her research interests include social media, online presence and digital identity. Sue is a Fellow of the HEA, a Fellow of SEDA and member of the SEDA Executive Board. As a lifelong learner, Sue is taking a second degree – an MSc in Technology Enhanced Learning, Innovation and Change.

References

- Bennett, L. (2014). Learning from the early adopters: Developing the digital practitioner. *Research in Learning Technology*, 22. Retrieved from <http://www.researchinlearningtechnology.net/index.php/rlt/article/view/21453/html>
- BIS. (2011). *Students at the heart of the system*. Department for Business, Innovation & Skills, Norwich: TSO. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31384/11-944-higher-education-students-at-heart-of-system.pdf
- Browne Report. (2010). *Securing a sustainable future for higher education, Department for Employment and Learning*. Available from <http://www.delni.gov.uk/index/publications/pubs-higher-education/browne-report-student-fees.htm>
- Cochrane, T., Antonczak, L., Keegan, H., & Narayan, V. (2014). Riding the wave of BYOD: Developing a framework for creative pedagogies. *Research in Learning Technology*, 22, 1–14.
doi: <http://dx.doi.org/10.3402/rlt.v22.24637>
- Conole, G. (2013). *Designing for learning in an open world*. London: Springer.
doi: <http://dx.doi.org/10.1007/978-1-4419-8517-0>
- Cormier, D. (2008). Rhizomatic Education: Community as curriculum. *Innovate: Journal of Online Education*, 4(5). Available from <http://eric.ed.gov/?id=EJ840362>
- Crawford, K. (2009). *Continuing professional development in higher education: Voices from below*. EdD thesis, University of Lincoln. Retrieved from <http://eprints.lincoln.ac.uk/2146/1/Crawford-Ed%28D%29Thesis-CPDinHE-FINAL%28Sept09%29.pdf>
- Dearing Report. (1997). *Higher Education in the Learning Society, Department for Education and Employment*. Available from <http://www.leeds.ac.uk/educol/ncihe/>
- DfES. (2003). *The future of higher education*. Retrieved 1 February 2015 from http://www.bis.gov.uk/assets/BISCore/corporate/MigratedD/publications/F/future_of_he.pdf

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- Ecclesfield, N., Rebbeck, G., & Garnett, F. (2012). The case of the curious and the confident – the untold story of changing teacher attitudes to e-learning and "Technology IN Action" in the FE Sector. *Compass: The Journal of Learning and Teaching at the University of Greenwich*, 5.
- European Commission. (2013). *High level group on the modernisation of higher education. Report to the European Commission on Improving the quality of teaching and learning in Europe's higher education institutions*. European Union. Retrieved from http://ec.europa.eu/education/higher-education/doc/modernisation_en.pdf
- Freire, P. (2011). *Pedagogy of the oppressed* (M. Bergman Ramos, Trans.). New York: Continuum.
- Garnett, F. (2013). Wikiquals and #Open #Learning Lab. Available from <http://www.slideshare.net/fredgarnett/wikiquals-and-open-learning>
- Garnett, F., & Ecclesfield, N. (2014). Craft of e-teaching: lessons from the digital practitioner research. *The 10th International Scientific Conference eLearning and software for Education*, Bucharest, April 24–25, 2014. Retrieved from https://www.academia.edu/6845104/A_Craft_of_e-Teaching_lessons_from_the_Digital_Practitioner_Research
- Gauntlett, D. (2011). *Making is connecting. The social meaning of creativity, from DIY and knitting to YouTube and Web2.0*. Cambridge: Polity Press.
- Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. Bonk & C. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer.
- Hase, S. & Kenyon, C. (2000). From andragogy to heutagogy. Ultibase, RMIT. Retrieved 20 March 2015 from <http://ultibase.rmit.edu.au/Articles/dec00/hase2.htm>
- Hostetter, C., & M. Busch. (2013). Community matters: Social presence and learning outcomes. *Journal of the Scholarship of Teaching and Learning*, 13(1), 77–86. Retrieved from <http://josotl.indiana.edu/article/view/3268/3623>
- Jackson, N. J. (2013). The concept of learning ecologies. In N. Jackson and G. B. Cooper (Eds.), *Lifewide learning, education and personal development* [E-Book. Chapter A5]. Retrieved from http://www.lifewidebook.co.uk/uploads/1/0/8/4/10842717/chapter_a5.pdf
- Kember, D., & Gow, L. (1992). Action research as a form of staff development in higher education. *Higher Education*, 23(3), 297–310. Available from <http://www.istor.org/stable/3447378>
- doi: <http://dx.doi.org/10.1007/BF00145018>
- King, H. (2004, December). Continuing Professional Development in Higher Education: What do academics do? *Educational Developments*, 5.4, 1–5. Retrieved from http://www.seda.ac.uk/resources/files/publications_25_Educational%20Dev%205.4.pdf
- KnowledgeWorks. (2012). Recombinant education: Regenerating the learning ecosystem. *Knowledge Works*. Retrieved from http://knowledgeworks.org/sites/default/files/Forecast3_0_0.pdf
- Laurillard, D. (2012) *Teaching as a design science*, London: Routledge.
- Laurillard, D. (2014a). What is the problem for which MOOCs are the solution? Retrieved from <http://ioelondonblog.wordpress.com/2014/05/14/what-is-the-problem-for-which-moocs-are-the-solution/>
- Laurillard, D. (2014b, 11 July 2014). Which problems could MOOC solve, and how? *University World News*. Available from <http://www.universityworldnews.com/article.php?story=20140708091436155>

Scaling up Open CPD for Teachers in Higher Education: A Snowballing Approach

Lewin, K. (1946). Action research and minority problems. In G. W. Lewin (Ed.), *Resolving social conflicts*. New York: Harper & Row.

doi: <http://dx.doi.org/10.1111/j.1540-4560.1946.tb02295.x>

Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-learning: Understanding blended and online learning (Connecting with e-learning)*. Abingdon: Routledge

Luckin, R., Clark, W., Garnett, F., Whitworth, A., Akass, J., Cook, J., ... Robertson, J. (2010). Learner generated contexts: A framework to support the effective use of technology to support learning. In: M. J. W. Lee, & C. McLoughlin (Eds.), *Web 2.0-based e-learning: Applying social informatics for tertiary teaching* (pp. 70–84). IGI Global. Retrieved from <http://knowledgeillusion.files.wordpress.com/2012/03/bookchapterluckin2009learnergeneratedcontexts.pdf>

Nerantzi, C. (2011). 'Not too much facilitation going on' – Issues in facilitating online problem-based learning in academic development. *Celebrating the Past and Embracing the Future: Evolution and Innovation in Problem-Based Learning Conference, 30 and 31 March 2011, University of Central Lancashire* (pp. 111–124).

Nerantzi, C. (2014a, June 2014). The open bug: A story of collaboration & resurrection. In C. Nerantzi & S. Beekingham (Eds.), *Using social media in the social age of learning* (pp. 10–12). *Lifewide Magazine, Special Edition*.

Nerantzi, C. (2014b). A personal journey of discoveries through a DIY open course development for professional development of teachers in higher education (invited paper). *Journal of Pedagogic Development, University of Bedfordshire, 4*(2), 42–58, Available from <http://www.beds.ac.uk/jpd>

Nerantzi, C., & Beekingham, S. (2014). BYOD4L – Our magical open box to enhance individuals' learning ecologies. In N. Jackson & J. Willis (Eds.), *Lifewide learning and education in universities and colleges* [E-Book]. Available from <http://www.learninglives.co.uk/e-book.html>

Nerantzi, C., Middleton, A., & Beekingham, S. (2014). Facilitators as co-learners in a collaborative open course for teachers and students in higher education. *Learning in cyberphysical worlds, eLearning paper, 39*, 1–10. Available from http://www.openeducationeuropa.eu/en/article/Learning-in-cyber-physical-worlds_From-field_39_2

Nerantzi, C., & Beekingham, S. (2015, in print). BYOD4L: Learning to use own smart devices for learning and teaching through the 5C framework. In A. Middleton (Ed.), *Smart learning: Teaching and learning with smartphones and tablets in post-compulsory education*. Sheffield: MELSIG publication.

Ramsden, P. (2003). *Learning to teach in higher education*. Oxon: RoutledgeFalmer.

Reason, P., & Bradbury, H. (Eds.). (2007). *Handbook of action research*. London: Sage Publications.

Redecker, C., Leis, M., Leendertse, M., Punie, Y., Gijssbers, G., Kirschner, ... Hoogveld, B. (2011). *The future of learning: Preparing for change*. European Commission Joint Research Centre Institute for Prospective Technological Studies EUR 24960 EN Luxembourg: Publications Office of the European Union. Available from <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=4719>

Salmon, G. (2013). *E-tivities. The key to active online learning* (2nd ed.). Oxon: Routledge.

Schön, D. (1987). *Educating the reflective practitioner. Towards a new design for teaching and learning in the professions*. San Francisco, CA: Jossey-Bass.

Thomas, P., & Carswell, L. (2000). Learning through collaboration in a distributed education environment. *Educational Technology & Society, 3*(3), 373–382. Retrieved from http://www.ifets.info/journals/3_3/d12.html

Scaling up Open CPD for Teachers in Higher Education: A Snowballing Approach

Weller, M. (2011). *The Digital Scholar. How technology is transforming scholarly practice*. London: Bloomsbury.

doi: <http://dx.doi.org/10.5040/9781849666275>

Weller, M. (2014, 21 March). *The Battle for open webinar*. The Ed Techie. Available at <http://nogoodreason.typepad.co.uk/>

Wenger, E., White, N., & Smith, J. D. (2009). *Digital habitats, stewarding technology for communities*. Portland, OR: CPsquare.

White, D., & Le Cornu, A. (2011). Visitors and residents: A new typology for online engagement. *First Monday*, 16(9). Retrieved from

<http://firstmonday.org/article/view/3171/3049>

doi: <http://dx.doi.org/10.5210/fm.v16i9.3171>

White, D., & Manton, M. (2011). *Open Educational Resources: The value of reuse in higher education*. JISC-funded OER Impact Study, University of Oxford. Retrieved from

<http://www.webarchive.org.uk/wayback/archive/20140614114921/http://www.jisc.ac.uk/media/documents/programmes/elearning/oer/OERTheValueOfReuseInHigherEducation.pdf>

Whitmore, J. (1993). *Coaching for performance: A practical guide to growing your own 5 skills*. London: Nicholas Brealey Publishing.