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Capacity-building in open education: an Australian approach

Carina Bossu & Wendy Fountain
University of Tasmania (Australia)
carina.bossu@utas.edu.au *&* wendy.fountain@utas.edu.au

Abstract

Addressing the gap between global open educational resource (OER) proliferation and the slow adoption of OER and open educational practices (OEP) in Australian higher education, this paper focuses on a capacity-building project targeting academics, academic support staff and educational developers. The conception, design, development, piloting and evaluation of an open, online professional development micro course are detailed, highlighting key aspects of the open design and considerations for sharing and reuse across higher education institutions. The open micro course introduces five key OEP concepts through five contemporary curriculum design topics, using knowledge co-creation activities which engage learners in iterative shaping of the course, and generate artefacts for demonstration and recognition of learning. Opportunities for short to longer term capacity-building which leverage the micro course are also discussed, in response to significant shifts underway in higher education funding and professional development priorities.

Keywords: Academics; capacity-building; curriculum design; micro course; open educational practices; professional development

Introduction

Despite recent federal investments and important developments in open educational resources (OER) and open educational practices (OEP), the Australian higher education sector lags behind other countries in these endeavours. The US, UK and some other European countries have already developed regulatory frameworks and established institutional and national support, including funding, that are widely available to institutions and academics interested in working with OER and OEP (Bossu, Brown & Bull, 2014). Considering the evolving pace and demonstrable impact of OER and OEP on higher education globally, the need for further professional development and capacity-building to facilitate the adoption of OER and OEP in Australia is critical. In fact, previous research has identified a lack of appropriate professional development programs available for academic and related staff as one of the main reasons for the limited adoption of OER and OEP in Australian universities (Bossu, Bull & Brown, 2012).

This paper features a project funded by the Australian Government Office for Learning and Teaching (OLT) that attempts to bridge this gap and make a significant contribution to the adoption of OER and OEP in higher education in Australia. The project team set out to design, develop and pilot a free, open and online professional development course focussed on supporting curriculum design in higher education, called *Curriculum design for open education (CD4OE)* (http://wikieducator. org/course/Curriculum_design_for_open_education/). Our specific aim is to develop the capacity of academics in Australia to adopt and incorporate OER and OEP to underpin innovative, engaging and agile curricula across the Australian higher education sector, including traditional face-to-face, distance and blended modes.

This course is a micro open online course (mOOC) where 'micro' refers to a sub-component of a full course/program or subject/unit. The micro course format was pursued for its reusability, for example, as a module in professional development programs at a range of institutions, and for its support of transferable 'micro credentials'. This involves recognition of 'small batch learning' on a

smaller scale than traditional higher education courses. In addition to design for reuse and micro credentials, this micro course is distinctive for its explicit modelling of an open design consisting of multiple learning pathways that enable both formal and informal learning approaches. In terms of scope, it presents core OEP concepts in the context of contemporary curriculum design and technology enhanced learning (TEL) in higher education (please see Table 1).

The project comprised two stages: (i) the Design and Development Stage, and (ii) the Pilot and Evaluation Stage, each of which is elaborated in the two sections to follow. The first stage consisted of the design and development of the micro course, including the identification of related open practices and existing OER for reuse within the micro course, and the development of new resources for future reuse. The course has an OEP-based learning design and has been developed in an open platform (WikiEducator); in combination this supports formal and informal learning, and for-credit and not-for-credit reuse options. This stage of the project also included the planning of the course pilot and evaluation strategy. The second stage involved conducting the pilot, and collecting and analysing participants' feedback on their experience of participating in the micro course, through an embedded evaluation activity (which is ongoing at the time of writing). Outcomes of the evaluation will guide revision of the micro course and form the basis for the research component of this project. The project research findings will be the subject of future publications. In the third section below, we speculate as to how this micro course might be leveraged for OEP capacity-building at a range of scales in higher education.

In this paper, we describe in detail the two stages of the project, as well as discuss how we conceptualised these stages based on contemporary curriculum design theories in combination with OEP, including open pedagogies. According to Weller (2014), open pedagogies combine the abundance of open content (or OER) already available on the internet with the power of networks "and the learner's connections within this" (2014, p. 10). We also explore some opportunities that this micro course might present to the growing demand for, and importance of, courses such as this to meet the professional development needs of academic staff, including casual staff, as higher education sector funding mechanisms and priorities change. Before continuing, we would like to highlight that most aspects of the micro course are based on the concepts underpinning OEP. Open educational practices represent a shift in thinking from increasing access to open resources (OER), to being focused on supporting educational practices and promoting quality and innovation in learning and teaching through open technologies, open policies, open design, and learners' co-creation and sharing of knowledge (Smyth, Bossu & Stagg, 2015 – in print).

Stage 1: Design and Development

The Design and Development Stage spanned May 2014 to January 2015 and was characterised by a critical and iterative dialogue between design for learning processes and open technology evaluation. The project team began by articulating course design principles reflecting recent scholarly notions of OEP and formative online learning theory. The core principles included:

- Anticipation of future learners from diverse cultural and institutional contexts for whom English might not be the first language, and for whom Australian terminology may need to be clarified;
- A 'learner empowered' view of curriculum design (Smyth *et al*., 2015 – in print) in which multiple learning pathways enable learners to take a sequenced approach if preferred, or to sample topics and activities based on their learning needs and interests (Wappett, 2012);
- A conception of learning outcomes as nested within broader subject/unit learning outcomes to support 'micro credentials', prior learning assessment and recognition (PLAR), and credit transfer for future study (Conrad, Mackintosh, McGreal, Murphy & Witthaus, 2013);

- An emphasis on learners' professional practice contexts and authentic activities (Herrington, Reeves, Oliver & Woo, 2004), which contribute directly and indirectly to two major tasks through which learning outcomes can be demonstrated;
- A view of course content as co-created by learners via the sharing and peer evaluation of knowledge artefacts during the course, such as curated collections of OER (Antonio, Martin & Stagg, 2012; Flintoff, Mellow & Clark, 2014); and
- Explicit modelling of OEP concepts adopted in the course, along with interwoven commentary by the project team on issues faced and our rationale for decisions made, acknowledging the emergent, co-constructed status of OEP in higher education. Such issues included designing for culturally diverse learners, diverse digital literacies, multiple institutional settings, open platforms, open licensing, and for the complexity of learners' personal learning environments (PLEs) in action (Johnson & Liber, 2008).

Our course design approach proceeded in line with Conole's (2013) emphasis on *representation* for sharing and mediating project team members' intentions at the design stage. The initial learning design was represented as a matrix, in which five core OEP concepts are introduced through five key curriculum design topics. At the intersections of these sets of concepts and topics, sub-topics formed the focus of six learning pathways including an introduction/induction, set out in Table 1. From this conceptual basis, we devised and refined topic-based learning objectives and online activities for each learning pathway, in interplay with our identification of relevant OER, and evaluation of open course platforms and tools. Designing for reuse (facilitated by open licensing of the course) was a major consideration in this process and represented a significant departure from the design of semester-based, sequenced online courses accessed via institutional learning management systems. Each learning activity, while conceived for one of the six learning pathways in this course, is essentially standalone and able to be reworked and remixed in other open courses. Similarly, the two major tasks—Task 1: Curation and Peer Feedback and Task 2: Micro Course Reflection—can be reworked and reused in other open course contexts.

Table 1: Micro Course Matrix Learning Design

Introduction - Course overview & learning outcomes - Learners' guide	**Topic 1 Learning outcome frameworks**	**Topic 2 Learner contexts**	**Topic 3 Learning design for open education**	**Topic 4 Resources & technologies**	**Topic 5 Assessment & OEP**
A. Openness & open educational practices (OEP)		2A Socially networked learners Formal and informal learning Digital literacies	3A Open design Sequence or sample Facilitated or self-directed, self-paced	4A The OER movement 'Native' and open source technologies	5A Open education and assessment
B. Open learning pedagogies	1B Qualification frameworks Nested learning outcomes e.g. course/program/unit/subject/ module	2B Connectivism Rhizomatic learning Transformative pedagogy	3B Learner-led pathways Curating OER	4B Authentic activities, abundant content, resources and tools	5B Emerging assessment strategies

Introduction - Course overview & learning outcomes - Learners' guide	Topic 1 Learning outcome frameworks	Topic 2 Learner contexts	Topic 3 Learning design for open education	Topic 4 Resources & technologies	Topic 5 Assessment & OEP
C. Locating open educational resources (OER)			3C Evaluating, integrating and adapting resources	4C Search strategies Repositories Licences	
D. Creating OER			3D Co-creating OER via learning activities	4D Reuse, reworking, remixing, redistributing	
E. Gaining credit for learning	2E Accrediting learners		3E Credit and non-credit options		5E Prior learning assessment and recognition (PLAR) Challenge-for-credit

Designing for open platforms and tools

Shifting focus to the open platform and tools adopted in the micro course, the design was also informed by the project team's reflections on our own recent participation in open, online professional development courses. While appreciating approaches seeking to support learners' PLEs and differing levels of learner engagement, we judged abundant digital content and multiple communication channels within courses to be particularly challenging factors. To this end, we canvassed colleagues working in the area of educational/academic development (representative of targeted pilot participants) about their experiences of open courses and online communication preferences. There was a consensus expressed for balance between 'free for all' and more structured participation, and for coherent threads of discussion and debate beyond that allowed by aggregated feeds of micro-blog commentary (such as Twitter).

Given the short, five-week duration of the micro course, we committed to 'low threshold' tools in terms of access and the skills required, and a limited toolset that still supported the inclusion of learners' digital artefacts (for example, professional profiles, blogs and personal websites). Following evaluation of open platforms and hosting options, the course was developed in WikiEducator which is provided by the OER Foundation. This ensures free access for learners, and fosters potential reuse of the course through the OER university's (OERu) expanding partner network. The OERu is a consortium of like-minded tertiary institutions and organisations working in collaboration to provide free and open education through a diverse range of pathways to learners worldwide (McGreal, Mackintosh & Taylor, 2013). Both universities involved in the micro course project are OERu partners.

In practice, this decision resulted in a distributed development process with fellow OERu partners able to view work-in-progress and offer valuable design and technical guidance. The micro course

website (Figure 1) was paired with a Wiggio site (https://wiggio.com/)—a free suite of group interaction tools—to support the online activity options within the six learning pathways. Together, these two spaces formed the hub for the micro course pilot which is detailed in the following section.

Figure 1: Micro Course in the WikiEducator Platform

Stage 2: Pilot and Evaluation

The Pilot and Evaluation Stage followed Stage 1 from February to April 2015. This second stage of the project involved trialling fundamental aspects of the open micro course and establishing its feasibility for larger-scale implementation. Conducting a small-scale pilot, with an embedded evaluation, was also a realistic option within the time and budget parameters of the project. In addition, the innovative, emergent nature of this micro course meant that piloting was essential to uncover unforeseen issues, while still offering a well-supported, professional development opportunity for learners. Similar to other pilot studies, this pilot proceeded with clear aims and was based on a considered conceptual framework (Edwin & Hundley, 2002; Lancaster, Dodd & Williamson, 2004). The pilot was conceived to address two main aims. The first aim was to trial the OEP-based course design, open platform and interaction tools. Through applying and modelling an open pedagogic approach (Smyth *et al*., 2015 – in print), the second aim was to engage learners in knowledge co-creation activities that build upon the initial course structure and scaffolds. To this end, those who took part comprised learning and teaching practitioners in higher education, including academic developers, learning support academics and educational technologists.

In order to maximise the utility of the micro course to targeted learners, and derive feedback on the issues central to fostering OEP in curriculum design, we invited review by the project's 'critical friends' prior to the pilot. Three comprehensive reviews were undertaken; two by curriculum design specialists, and one by an information technology specialist. Their aggregated feedback spanned

language level, scaffolding and alignment (including topics, learning outcomes, activities and tasks), and web accessibility. Assigning time to respond to reviewer feedback prior to launching the pilot built in an initial quality assurance step, which in turn contributed to the authors' professional development.

Reiterating the second aim of the pilot –to involve learners in knowledge co-creation integral to the pilot process—our recruitment strategy took on great significance given the need to engage relevant expertise in higher education learning and teaching. Tapping into the expanding community of open education advocates, we invited staff from five Australian higher education institutions, including the partners in this project, and particularly targeting organisational units responsible for learning and teaching development and support. The pilot was then facilitated and supported by the authors over a five week period during February-March 2015, with the second (and final) major task due one week after the end of Week 5.

The embedded pilot evaluation

The micro course pilot evaluation was embedded within 'Task 2: Micro Course Reflection' to enable the project team to respond to feedback within the project timeframe, and to dually offer a meaningful activity for typically 'over-surveyed' learners (Kregor, Breslin & Fountain, 2012). As such, Task 2 served two key functions in this project. It first involved learners in writing a structured reflection piece on the micro course, through which critical evaluation of OEP could be demonstrated, as well as diverse perspectives and engagement levels. The design of both major tasks emphasised demonstration of learning outcomes so that successful completion might be recognised by prior learning assessment in larger units or courses. In Task 2 we sought learners' responses on specific aspects of their course experience, and its application to practice in higher education. Anonymous responses (in compliance with ethics approval, see below), were made via a web-based survey form prompting reflections on:

- Open course experience;
- Applicability of the course to learning and teaching context;
- Scope and relevance to learning and teaching in higher education;
- Learning design;
- Curation of resources and tools;
- Opportunities to connect and share with course colleagues; and
- Specific improvements for future course iterations.

The second function of Task 2 was to direct learners' responses to the revision and enhancement of the micro course for future sharing and reuse. In this respect, course development was not confined to Stage 1, according to the participatory design principle of 'design-after-design' (Björgvinsson, Ehn & Hillgren, 2012). Modularised topics and activities, and the flexibility of the open platform together support ready re-design and adaptation of the micro course, along with incorporation of participants' knowledge artefacts in the form of curated OER collections arising from 'Task 1: Curation and Peer Feedback'.

In order for the pilot evaluation outcomes to inform new insights to the field of OEP in higher education, formal ethics approval was gained to allow evaluation reporting and future publication. These manifold functions of Task 2 enabled the project team to maximise feedback for course revision purposes, and manage the demands made of participants during the five week pilot. Following thematic analysis of evaluation responses, all participants will be informed how their collective feedback has shaped the next iteration of the course. It is hoped this ongoing dialogue with learners will also help facilitate the reuse and reworking of the micro course in different institutional contexts.

Capacity-building opportunities

While the micro course evaluation is ongoing at the time of writing, the project to date has spurred consideration of capacity-building opportunities that leverage this course, and related open courses, in the longer term. We propose strategies in this section reflecting current shifts in funding of the higher education sector in Australia (Ling, Fraser & Gosling, 2013). It is believed that these shifts could impact directly and indirectly on institutional support for professional learning programs for academic staff, including casual and contract-based academics (Marginson, 2013). This trend suggests that individual academics will increasingly need to manage their own careers and professional learning, including evidencing their performance against specified metrics and frameworks (Gibbs, 2013). In Australia, many academic support functions are being scaled back at the same time, and postgraduate programs in higher education learning and teaching are being rationalised and disaggregated (Marginson, 2013). Together, these conditions point to a greater need for, and reliance upon, open learning and relevant OER for professional development in different higher education contexts (Weller, 2014). Hosting the micro course with the OERu was therefore a key strategy to maximise its discoverability, and foster its reuse and reworking in and across institutions.

While these sectoral shifts unfold, we still observe opportunities for practical embedding of the micro course in the short to medium term. At the lead institution for this project, for example, the micro course will form a module comprising approximately one third of a new unit focused on curriculum and assessment design which targets academics responsible for curriculum development and renewal. This unit is in turn an elective component of a professional honours degree course in higher education. Learners in the pilot, and in subsequent iterations of the micro course, will therefore have the option for their learning to be recognised in this unit on the principle of 'micro credentials', following successful completion. Depending on the prior learning assessment and recognition (PLAR) mechanisms of other higher education institutions, learners could also 'challenge for credit' by presenting evidence of their learning in the micro course (such as the knowledge artefacts generated and documented feedback), against the learning outcomes specified in a larger, related unit. This again reinforces how the onus for managing and evidencing professional learning is progressively shifting to the individual. However, the occurrence and pace of this shift might be influenced by individual institutions' related policies and strategies (Gibbs, 2013).

A further capacity-building opportunity involves engaging those currently active in leading and delivering higher education professional learning in open learning communities of practice. To this end, we invited individuals in such roles at several Australian institutions to participate in the pilot. We see raising awareness of the utility of such OER, in addition to cases demonstrating how OER has been embedded in professional learning as essential to widening uptake by academic staff (Smyth *et al.*, 2015 – in print). A further role for the open learning community of practice is to support members to rework and remix relevant OER to respond to the needs of academic staff working in local and national contexts, especially in relation to disciplinary standards and regulatory frameworks in higher education.

Conclusion and final considerations

In this paper we have elaborated the design, development, piloting and evaluation of a free, open, five-week micro course (*Curriculum design for open education*), in support of the adoption of OEP in higher education curriculum design. We have also discussed the conceptual and theoretical frameworks that influenced our decisions while scoping, evaluating and adapting different curriculum design models, open platforms and technologies. Through this account, we have highlighted key

considerations for professional development and capacity-building in open education; namely, open design, design for reuse, formal and informal learning options, and 'micro credentials'.

We further discussed some of the opportunities that this micro course presents to individual learners, communities of practice, and higher education institutions' professional development programs. However, due to the open nature of the course, it remains difficult to clearly forecast all its possible impacts and future applications, whether of its varied components (such as images, learning activities, and textual content), or its utility as a whole open course. We can nevertheless speculate that the demand for such free, open courses will increase as academic staff in our case, and other professionals in general, are likely to become increasingly responsible for their own professional development and networked capacity-building. We also anticipate that micro credentials, and PLAR possibilities that recognise informal and formal learning, will become more prevalent within mainstream education. This will open up greater opportunities for learners who might choose to learn from different institutions around the world, at their own pace, formally for credit, or informally based on interest and need.

However, an open micro course also poses several limitations. One of the limitations, mostly relating to the design and development of the micro course, was that all initial content had to be devised and assembled prior to the beginning of the pilot to ensure learners had the flexibility to select learning pathways of most interest to them, in contrast to staged, sequenced learning. Another limitation of a free, open course is the completion rate. Learners are free to choose to discontinue the course at any time, or may still engage with the course in ways that might not give them any formal learning recognition. In the case of this micro course, we were largely only able to gather feedback from learners on their experience in the course if they completed the final major task (Task 2). Non-completion therefore limits the richness of feedback that could be used to improve the course for future iterations. In addition, the construction of the micro course using existing OER presented some challenges, particularly around the need to create and adapt resources, rather than rely on reusing existing ones, which were non-existent, not suitable, or not openly licensed.

Despite the limitations, we regard the development of this micro course to have been highly developmental in terms of our own capacity-building. We foresee that some of the limitations above will be overcome as OEP move from the periphery and become incorporated in mainstream education, as OEP is one of the instruments assisting in addressing international agendas to increase access to education in a diverse range of contexts. Open educational practices are also positioned to assist twenty-first century higher education to become "more relevant to society by opening up its knowledge and access to its services" (Weller, 2014, p. 17). We hope that this micro course will provide learners with opportunities for professional reflection, development and innovation in the open space, and that it will similarly challenge their traditional conceptions of learning and teaching as this project has challenged us.

Acknowledgements

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