



Accessible, reusable and participatory: Initiating open education practices

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How does a university get started with open educational resources (OER)? What institutional tensions and conflicts are likely to be brought into play during this process? The promise of OER for higher education offers more than unrestricted access to high quality knowledge, it implies open and transparent sharing and development of knowledge, that is, integrating the disparate parts of the university through the shared activities of open education *practices* (OEP). In this paper we investigate how a range of disparate participants organised to establish initial OEP processes in an Australian university in order to embed an open education agenda: setting up repositories and processes for open publishing of educational design, and negotiating agendas of marketing and openness. We attempt to identify the groundwork at the meso-level of the organisation in order to establish OEP; in other words, to identify *what comes before* any actual resources are produced or made available.

Keywords: open educational resources, open education practices, curriculum design, publishing, repositories

Introduction

In the history of disruptive technologies that have promised transformative shifts in higher education, forms of

open education arguably demonstrate the greatest departure from traditional education with its regime of bounded knowledge and individualised learning, and the enactments of sharable, adaptable communities of learning. Open educational resources (OER) has its origins in developments in the late 20th century in open education associated with the open source movement, and the term arose from UNESCO in 2002 (Geser 2007; Weller 2011; Bossu et al. 2012). Recent visionary reports on open education indicate the significance of this shift to openness and the need for an integrated, rather than bounded, approach by higher education institutions. The OLCOS Roadmap (Geser 2007) recommends that organisations “foster open practices of teaching and learning” (p. 12) with a view to “leverage education and lifelong learning for the knowledge economy and society” (p. 12). The OPAL Report (2011) advocates shifting focus from resources to practices, or open education practices (OEP), throughout the institution, including a supportive policy environment and strategies with “cultures of innovation” that encompass institutional frameworks, repositories and practices of sharing and reuse. The Horizon Report on higher education (Johnson et al. 2013) notes the shift in educational values from “authoritative sources” (p. 7) to openness and transparency, with the expressions of these values still taking shape. The first of their list of “key trends” notes that “[a]s authoritative sources lose their importance, there is need for more curation and other forms of validation to generate meaning in information and media” (p. 7). OER, therefore, is the locus of convergence for institutional strategies, technologies, and practices of teaching and learning, and the implication of these reports are that OER cannot be implemented partially within a university.

In the Australian higher education context, Bossu et al. (2012) describe a range of developments with OER in universities, noting some universities have clear strategies for OER, but that many others reflect nascent moves in this direction. In their survey of Australian universities she notes both a “lack of OER uptake” and a “lack of institutional support” (p. 130).

These and other accounts (Conole, 2013; D’Antoni 2009; Baraniuk & Burrus, 2008) discuss the issues and challenges in the development of institutional frameworks, policies, and arrangements for OER in higher education, and the enablers and inhibitors to OEP. We suggest that the embedding of OER & OEP is more than interoperability of institutional structures and technologies. Perhaps the transformative implications are captured by Neary & Winn (2009), who propose that open and collaborative initiatives are more than a call to simply redesign curriculum, but to “redesign the organizing principle, ... through which academic knowledge is currently being produced”. In other words the implication of OER & OEP is to “refashion the university” through new relations between academic, public and knowledge creation.

In this paper we adopt a particular orientation to the work of establishing OER and OEP: the university as a complex organisation, consisting of interconnected but disparate parts. We focus on the work required to get started with OEP in an Australian university; the key arrangements and practices, that is, OEP, that need to be put into place in order to establish the necessary conditions for OER. This paper offers an account of these initial steps by participants that are distributed across the meso-level of a university: practitioners working in curriculum teaching and learning; in digital repositories, in electronic publishing, and in university policies and procedures. We argue that embedding OEP cannot be achieved by proceeding in a “business as usual” manner, with OER as “bolted-on” to existing learning technology systems or information repositories. Rather, OEP entails a fundamental shift in thinking about knowledge in the university: a shift from a view of content as “canned products” (Geser 2007, p. 44) with fixed boundaries, formats and timeframes, to one with open practices of knowledge creation that challenge the arrangements for university teaching, how it is located, what its boundaries are, and whether it should be protected and promoted as a reusable and adaptable resource.

Methodology

The activity and investigation into the potential for OER at La Trobe University can be traced to two sources: a working group self-organised around a one day conference on OER at the university in March 2013 (Open Education Working Group 2013a), and a report to the university’s Planning and Resources Committee *Beyond 2017: Imagining the Future of Learning at La Trobe University: Report of the Radical Learning Project* (Macken et al. 2012). One of the report’s recommendations was “The extension of learning beyond enterprise systems and the incorporation of OER, third party and cloud-based learning resources into subject design” (p.5). The working group published a response to this and other recommendations of the Radical Learning Project, in the publication *Discussion paper on open education* (Open Education Working Group 2013b). The discussion paper aimed to develop strategic aspirations into a case for OER and proposals for their implementation in the university. In summary, the discussion paper presented the case that OEP improved educational outcomes for the university, and to realise that improvement requires a better alignment of policy infrastructure and practices. The outcomes discussed in the paper included evidence that OEP improves access to high-quality content and

results in greater retention of students and improved lifelong professional learning for staff, students and graduates. In terms of policy infrastructure and practices, the discussion paper made suggestions towards aligning teaching and learning, intellectual property policies, the technology systems and library repositories, and existing teaching and learning practices toward open education practice.

This paper is an outcome of the Open Education Working Group that brought together representatives from three faculties and two central units: the library's digital infrastructure unit, faculty educational design units, and the university-wide academic development unit. This multi-authored paper by the working group has itself brought together disparate parts of the university with the goal of articulating how the university can establish new connections between organisational parts and integrate arrangements for teaching and learning in order to embed OEP. In the following sections the authors consider, as practitioners representing distinct but interdependent standpoints, the significance and challenges of a disruptive shift from the traditional structures for teaching and learning to OEP. The following sections describe a series of perspectives within one university: a state of play on OER development nationally; issues arising for OEP in publishing teaching and learning resources; setting up an effective OER repository; and finally embedding OEP in educational design.

The OER landscape in Australia

Deliberation on OER has only recently emerged in Australia, and national conferences and forums on higher education have only relatively recently offered much discussion of OER and OEP. In Australia there has been an absence of national developments in OER, as for example, the cross-institutional disciplinary focus of the OER program in the UK (Higher Education Academy 2013), or Brazil's Scientific Electronic Library Online (SciELO) (Böhm 2013). Despite this, there have been recent initiatives around open education in Australian universities – five of these are described in Bossu et al. (2012). A national project, funded by the Office of Learning and Teaching, surveyed key stakeholders in the university sector concerning OER (Bossu et al. 2012). The study found significant challenges for the sector, which can be summarised as: issues relating to policies around intellectual property, a lack of knowledge and awareness in academic culture, and issues around quality, funding and “discoverability” of OER. A key challenge relates to the possibility of a coordinated and cross-institutional response in Australia, and how effective OER initiatives would be from within individual universities.

The recent upsurge in interest in Massive Open Online Courses (MOOCs) discussed in media commentary, both locally and internationally, has been followed by different and often contradictory understandings of open education, with notions of openness tending to slide into an understanding of access (Blackall 2013). These equivocal interpretations of “open” in education and resources were identified in the Horizon report (Johnson et al. 2013) and OLCOS Roadmap (Geser 2007). The Open Education Working Group, in their discussion paper, drew on these sources to distinguish “open”, for example in some MOOCs where content is open but subject to conditions for use, and the inherent openness of OER:

Open education does not simply refer to access to freely available content; it includes non-restrictive terms and conditions and transparent development processes. Open education practices use collaborative methods and frameworks to develop content, curriculum, assessment, research, policies, projects, budgets and so on.
(Open Education Working Group 2013, p. 2).

This understanding of openness in the sense of open for further use is clarified by Johnson et al., “open education advocates are working towards a common vision that defines ‘open’ as free, copyable, remixable, and without any barriers to access or interaction” (2013, p. 7).

Openness has retained this unrestricted meaning in development outside the higher education sector, in areas of open government, open access research publication and open data. Three of these developments are:

1. In 2010 the Australian Gov2.0 Taskforce made their recommendations to the Department of Finance and Deregulation calling for a declaration of open government, resulting in a requirement for public service information to be accessibly published and carry freely reusable copyrights – specifically the Creative Commons Attribution license (Department of Finance and Deregulation 2010). At the same time the Australian Government's Open Access and Licensing Framework (AusGOAL) was established to provide support and guide government and related sectors in facilitating open access to publicly funded information (AusGOAL 2011). In New Zealand the Minister for Internal Affairs reported that 16 NZ Government departments will be compliant with their Declaration for Open and Transparent Government by 2013/14

- (Tremain 2013).
2. Closely affiliated to the open government lobby is the open data movement, working to make publicly held collections of data and content openly accessible, and then demonstrating the usefulness of this by developing new content, software and graphic visualisations showcased in what are colloquially called datahacks and mashups. The Australian National Data Service (ANDS) is attempting to coordinate data repositories and data access and reuse. AusGOAL advises ANDS on this, and recommends clear licensing, standard formats, and accessibility (Australian National Data Service 2013).
 3. The push towards open research and open publication of research has achieved recent breakthroughs, with the National Health and Medical Research Council (NHMRC) requiring accessible publishing of research as a condition of its funding (NHMRC 2012). The Australian Research Council followed suit in 2013 (Australian Research Council 2013).

These developments signal a shift in strategies for national digital infrastructure that supports open standards and practices. Universities are now confronted with the decision of whether to follow this shift and align their systems and practices for development of educational knowledge and content with these broader initiatives for open data, or maintain existing publishing arrangements that offer significant restrictions to access and cost to students and institutions.

Embedding OEP: Publishing and sharing OER

The introduction of OEP introduces tensions with existing institutional arrangements. The radical implications of embedding OEP in the institution, as indicated earlier by commentators such as Neary & Winn (2009) and OER visionary reports, carry potential conflicts with existing practices. One question concerns whether OEP is giving content away for free and conflicts with commercialisation opportunities for faculties or institutions. The following two vignettes highlight issues that arise for publishing open content. The first concerns access to resources.

Adopting OEP case study: Faculty of Business, Economics and Law (FBEL)

Core to the faculty's drive towards open education is the desire to increase higher education participation by reducing the barriers to education for students. The Federal Government's report on Australian higher education participation (Bradley et al. 2008) called for a range of measures to increase participation rates for "members of groups currently under-represented within the system, that is, those disadvantaged by the circumstances of their birth: Indigenous people, people with low socio-economic status, and those from regional and remote areas" (p. xi). The move to increase the proportion of students from low socioeconomic backgrounds highlights the significant cost barriers to education, including the additional costs such as textbooks. The proportion of students from low socioeconomic backgrounds at La Trobe accounts for approximately 18% of our undergraduate cohort (La Trobe University 2012), and thus issues of accessibility and affordability have serious implications for student success and completion rates.

To address these issues, the faculty introduced a strategy for incorporating OER into the first-year curriculum. An intensive curriculum redesign process for core units of study aimed to address some of the factors that contribute to student retention and completion rates (Riddle et al. forthcoming). The result was the introduction of a 4+2+2 program for first-year studies which included a set of core multidisciplinary units to be undertaken progressively by all students undertaking a Bachelor degree in the Business School. By undertaking these multidisciplinary units students are able to move more easily between programs without penalty. A consequence of introducing these multidisciplinary core units was that no pre-existing textbooks matched the curriculum, thus a door was opened for the potential deployment of OER to fulfil the role of traditional textbooks. What followed was the intersection of conflicting goals. The concept of OER was introduced to the curriculum design team as they were launching a tendering process with local publishers to provide customised textbooks in print and electronic formats for the new core units. Once the tendering process had begun, the door to OER was effectively closed, as the publishers provided a "solution" that was perceived to ease workload demands, whereas the OER approach was viewed as requiring additional work by staff. The additional demand on students to purchase or otherwise arrange access to the textbook (e.g. through the library) was viewed as an acceptable price to pay (arguably because such arrangements have been the traditional convention for many years in higher education). This experience exemplifies how an initiative to introduce OER can produce inconsistent institutional practices, in this case, with the standard "business as usual" operation of outsourcing educational resources such as textbooks. The consequence of the faculty's decision to prescribe textbooks – at a cost of up to AUD\$270 for print and electronic access for one semester's worth of core units – is a failure to address one of the most basic issues affecting student retention and success. The study conducted by Riddle et

al. (forthcoming) concludes that OER must be introduced strategically; from the very outset of the curriculum design process.

A widespread model of educational content provision for on-campus students is to outsource resources to commercial publishers, and request students (and libraries) to pay for those resources. The publisher in turn recoups their costs (and covers their profit margin) by charging students and libraries to access that content, via printed textbooks or electronic (online or offline) textbooks. The emergence of OER foregrounds the institutional acceptance in shifting the cost of this resource production and provision onto students and, ultimately, their own libraries, with potential downstream effects on students' access to resources and completion of courses. In order for policies that support OER to take effect, they need to connect with practices associated with curriculum resources in a course or program, and a strategy to align those practices.

Connecting OEP with commercial opportunities: The iTunes U approach

Since 2011, La Trobe University has been making educational content available free to the public via Apple's platform iTunes U. This content includes podcasts of lectures, videos of demonstrations and interviews and PDFs of slideshows and handouts. All of this content resides on the university servers and is available to users with and without Apple mobile devices. The Ancient Mediterranean Studies program at La Trobe was established in 2012, and adopted iTunes U to raise domestic and international awareness of the new program. Three subjects from the program have appeared as iTunes U courses since 2012: *Ancient Greece*, *Classical Mythology*, and *The Roman World*, which had more than 100,000 subscribers and 1.4 million downloads – a much larger number than can be accommodated through on-campus enrolments.

The interest generated by these iTunes U courses has transferred to other media and other forums. *The Australian* newspaper reported that a podcast lecture on the Emperor Nero, downloaded 160,000 times last year, was “a phenomenally successful foray into the world of free online courses” (Trounsen 2013). He notes, “that has put it among iTunes U's regular top 50 offerings alongside the likes of Yale and Harvard.” Trounsen voices the competitive pressures for universities and the marketing opportunities with appealing content: “[i]t has given the university a world stage to market itself, though how to make any money out of the free online phenomenon remains elusive” (p.3). La Trobe's *The Roman World* course on iTunes U is now the subject of a pilot project investigating the commercial possibilities arising from providing educational content for free. The iTunes U course will run for a second time in 2013, again providing podcast lectures and PDFs of handouts and slides free of charge. Subscribers will also be offered the option to enrol for a fee, granting them access to La Trobe's learning management system (LMS) and library sites for additional learning activities and materials, interaction with subject experts, weekly asynchronous tutorials and online discussions, and assessment tasks and accreditation. The aim is that releasing high-quality content freely through a global platform such as iTunes U will raise awareness and attract fee-paying students looking for a greater level of engagement.

In addition to its function as a distribution platform for all rights reserved content, iTunes U can be used to distribute openly licensed content. Most of La Trobe's iTunes U offerings are currently licensed under a traditional all rights reserved copyright licence. This conservative approach has been a default position in the absence of a developed policy on OEP, though it should be noted that La Trobe's intellectual property policy states that:

“The University encourages the authors of Teaching Materials to consider making such materials publicly and freely available, e.g., via the internet, or publishing commercially providing that those materials are not subject to a prior third party agreement...”
(La Trobe University 2011, p. 2)

As OEP become common to the university, programs have the option of assigning a Creative Commons license for educational content in iTunes U. Allowing others to freely use, adapt and even sell the educational content has the potential to bring university-branded materials to the public eye, to the awareness academics and students elsewhere, and even into commercial textbooks. The economic value of providing OER is difficult to quantify, but it is interesting to consider the practice of releasing teaching materials as OER in relation to the marketing budget of a university such as La Trobe. Creating high-quality educational content is part of a university's core business, but new developments in education technology that enable further reach in the worldwide education market present a range of commercial opportunities.

Embedding OEP: Setting up an OER repository

An important part of La Trobe University Library's role is to manage scholarly information for the university. As part of this work, the library manages the Research Online digital repository and collects and provides open access to scholarly publications, educational resources, research data and other works. The digital repository is primarily designed as a data source for indexing content for dissemination outside of La Trobe University and for publicising and providing access to research and educational materials to the wider world. Libraries also have a recent history of providing research guides and other teaching materials (often covering information literacy, research skills, bibliographic management tools and relevant research materials) within external systems. The practice of providing open educational content is demonstrated in the use of LibGuides (a vendor product that is an openly available on the internet), and La Trobe has over 250 LibGuides authored by Library staff.

The involvement of the library in the Open Education Working Group began in 2012 after meetings between the Faculty of Health Sciences and the library regarding educational content (mainly videos) and the need to provide a storage and discovery mechanism for this content. The library at that time was very keen to extend the use of the digital repository for the deposit of learning objects/resources for discovery and reuse at the university. The extension of this philosophy to making this content open and providing access to unique La Trobe University authored works was supported by the library executive team in terms of creating a "Learning Object Repository", according to the library's operational plan for 2012.

This commitment to open content has been a mission of the repository managers and repositories in general in libraries since the Australian Research Repositories Online to the World (ARROW) and ANDS projects were set up, from 2005-2013. Despite the support for practices of extending existing resources into OER, the digital repository is still seen as an internal resource, rather than a repository for works available externally and discoverable via search engines from outside the library repository. This requires an institutional shift to OEP. There are still existing structures and practices that present barriers to openness in how a digital repository is perceived, promoted and therefore used by academics.

To shift the use of a digital repository to OEP, the library needs to provide the following support within the repository:

1. A searchable interface for OER, with tailored indexing and metadata fields which will enhance discoverability and searchability of OER items authored by La Trobe University academics.
2. Integration with the La Trobe University LMS (Moodle) in order to provide automatic connections to enable uploading of OER into the repository.
3. A tailored set of metadata fields using an appropriate schema such as the IEEE (Institute of Electrical and Electronics Engineers) Learning Object Metadata Schema (IEEE 2002), along with the correct markup to enable the Creative Commons licence and other copyright permissions to be indexed appropriately in Google and other search engines, to enhance external discovery of OER objects in the La Trobe University digital repository.
4. Development of plugins within browsers (for staff) or enhancements to the repository (with forms for uploading) to enable automatic dissemination of OER within open external systems such as Wikimedia Commons, Archive.org or more proprietary systems such as YouTube or iTunes U.
5. Development of dissemination scripts, RSS feeds, feeds of metadata using the open archives initiative protocol for metadata harvesting (OAI-PMH) or development of other scripts or software to provide automatic dissemination of La Trobe authored OER content to relevant external sites, as identified by the university.

Some of these items may require the provision of resources by the university for software development to achieve these objectives. The library's repository software is based on open source software practices using the Fedora open source repository software. The indexing, repository metadata management, and search interfaces used to manage the repository all deploy software managed by a commercial library system that supports the system management beyond that which the library is able to provide.

This provides an open software structure that can be used to produce further enhancements and developments which may benefit an OER repository infrastructure. One of the original reasons that the repository software was set up, using funding to support the ARROW initiative, was to support open source software within a national framework. Hence university repository software became able to produce a national repository of research publications within the National Library of Australia's Trove system. The university library within this

context is keen to be able to support the development of a national infrastructure to enable the discovery of OER and other learning resources, possibly within the National Library of Australia. At a national level, in relation to learning resources designed for school education, there is the National Digital Learning Resources Network which is providing learning objects for schools through education portals. In a similar way, a national portal for educational resources for tertiary/university-level institutions, with feeds coming from individual sites, would be an effective way to share and make OER available at a national level.

The JISC report, *The roles of libraries and information professionals in Open Educational Resources (OER) initiatives* (Bueno-de-la-Fuente et al. 2012), supports that libraries can provide significant resources in the areas of:

“description and classification, management, preservation, dissemination, and promotion of OER. In order to support these activities, librarians provided expertise in information science areas, especially: metadata standards, vocabularies, indexing and classification, information retrieval, information literacy, and repository technology and management.”
(p. 7)

Thus, it is clear that the library has a significant role to play in engaging in OEP in any educational institution. The quality of classification and metadata management contributes directly to the success (or otherwise) of any OER initiative (Andreatos & Katsoulis 2012, Wenk 2010).

Embedding OEP in educational design

From an educational designer perspective, practices to embed OER into curriculum often occur on the fly, as an individually led bottom-up process of incorporating the rudiments of OEP, for example, contributing to and using Wikimedia, YouTube, iTunes U, a local Free University, or using Creative Commons licensing. This practice is likely to occur in the absence of an institutional approach to OEP. Contributing factors for this “openish” activity include:

- pedagogical objectives not being met by university systems
- lack of faculty resources to engage other paid, proprietorial software and systems
- the desire to expose materials to a wider audience, primarily for reasons of marketing profile (both individual and institutional)
- ease of access to materials in the case of open internet resources
- providing a model of professional practice for students in the online environment.

The technological practices of learning environments in universities have been dominated by closed enterprise systems so that pedagogical development is focused on idiosyncratic and institution-centric environments, or what Beetham et al. (2010) have observed as “management of learning by digital means, rather than the exploration of disciplinary knowledge and knowledge practices in a new digital context” (p.1). There is a dissonance between students’ everyday practices within digital environments through social media uses based on Web 2.0 platforms, and the academic practices valued in university teaching and assessment that takes effect as closed, short-term activities (Dohn 2009). This disconnect has implications for the way OEP can cultivate an innovative and dynamic curriculum that fosters deep and engaging learning experiences for our students. OEP offers an opportunity for students to develop skills that enable them to assert their academic identity in collaborative, creative and critical expression in an open – and by its open and digital nature – global, environment to foster lifelong learning and knowledge practices. OEP in this environment offers the opportunity for us to challenge organisational frameworks and “assessment regimes which remain largely locked in transmissive mode”, and ask how they “can be recrafted for the open, collaborative spaces” (Hemmi et al. 2009, p. 29).

OEP has, therefore, the potential to operate as a strategy for systematic change in academic practice in curriculum renewal. Price & Oliver (2007) observed that “[a]s learning technologies are implemented and some form of eLearning is put into place, the practices that accompany them tend to ‘become invisible’” (p. 24). OEP makes eLearning practices more explicit by adopting pedagogic innovation, for example, peer review of open assignments, or collaborative projects of open co-construction. OER, then, operates as set of adaptable examples. Two examples in practice follow.

1. Chinese 1001

The Chinese 1001 unit provides a good example of both unit delivery and OEP assessment. Resources or transmissible content is provided for Chinese students on a Google site which is a shared collaborative resource developed by a teaching academic and a colleague at an interstate university, together providing a portable and replicable digital resource. Open sharing of teaching resources on the internet is permissible, and indeed encouraged, by the La Trobe University intellectual property policy (La Trobe University 2011). This collaboration offers a way to share curriculum development effort, extend teaching and the development of teaching resources beyond institutional boundaries, enabling potential for quality improvement through peer review by staff. The Google site also offers students an immersive language interface not available with the current LMS.

This unit offers students a number of opportunities to collaborate “openly” on translation exercises through both in-class use of Google docs, and through the Marco Polo Project. The Marco Polo Project is a not-for-profit organisation that uses the possibilities of online collaboration to improve cultural and linguistic understanding between China and western countries. This website also serves as a collaborative translation platform, where students can practise their translation skills on authentic material and receive feedback on their translation from other, more advanced users, providing an opportunity for students to participate in global knowledge networks. This example highlights the importance of defining the resource aspect of OEP as practices – something you do, rather than something you access.

2. La Trobe Health Sciences on Wikiversity

La Trobe Health Sciences has been established as a category in Wikiversity, where the Faculty of Health Sciences is piloting the development of OER and OEP. In just six months, 59 projects were developed under this category, ranging from unit outlines and curriculum through to professional development project coordination. A pilot of OEP was approved by the faculty in November 2012, and the teaching and learning team has been encouraging the use of popular platforms such as the Wikimedia projects to implement that pilot.

The Wikimedia projects have been used as development spaces and have exposed staff to the considerations of open access and online transparency, leveraging the benefit of volunteers who educate and support the faculty in learning about OER and OEP. For example, text and media with restrictive copyrights cannot be copied into these project spaces, and a high level of diligence over copyright is maintained by those volunteers, who highlight the copyright limitations to faculty staff, and press them to rectify any copyright transgressions. Open standard formats are also being encouraged and supported by the same means.

It is anticipated that engagement with these platforms will create a range of resources and practices that will transfer into other spaces, both physical and online. For example, if a program of study is developed on Wikiversity with links to resources listed in Wikipedia, additional media on Wikimedia Commons, and a text on Wikibooks, these materials will be in the formats and needed and with appropriate open copyright licences for reuse in other websites that match the local context of the course, such as a course or unit website. Equally, the skills around information handling, collaborative workspaces and engaging popular reference projects may inspire changes in engagement practices, toward open participation generally.

Conclusion: First steps for OEP

The accounts in this paper reflect the *multiplicity* of educational practices that are open or in the process of becoming OEP. The task of embedding OEP in a university becomes matching this multiplicity to existing institutional arrangements, and to initiate change in the organisation and form shared goals. This paper, therefore, reflects the contingent and risky process of drawing together disparate parts of the university for the purpose of establishing OEP. To embed OER in practices, there are critical connections to be made across the university, at strategic and meso levels. The task of establishing such connections in a complex institutional environment suggests several points for consideration, informed by the practitioner accounts above:

- OEP can be supported through institutional intellectual property policies that align with broader open data initiatives (Australian Gov2.0 Taskforce, Australian National Data Service, NHMRC, ARC).
- University policies and procedures can support OEP without compromising the potential for commercialisation of educational resources. These can work in parallel, for example, offering a unit of study in multiple OER formats, and then bundling this content into iBook format for sale through Apple’s iBookstore.

- Institutional digital repositories can extend beyond the model of traditional library catalogues to connect to open systems and enable dissemination of content as OER. Repositories can also be developed as federated; open and shareable with other institutional repositories.
- OER brings the potential for open publishing of both research outputs and teaching and learning resources through the same means in a repository, with the recognition through attribution and citation in both cases.
- An indicator of embedding OEP is the work of curriculum design: how readily can institutional OER be adapted for local projects, and to what extent are practices and resources able to be shared in the OER community?

There are attendant sensitivities about digital artefacts and resources threatening academic ownership of content, and others have noted the unsettling effects of digital knowledge and practice on academic identity and authority. Land points to the way that online interaction, characterised as Web 2.0, often sits uncomfortably within existing higher education practice and “textual instability, according to Barnett (2005) comes to function as a reflection of instability in the university’s idea of itself” (Land 2011, p. 63).

In this sense, defining “open” gives agency to participate in this change, while acknowledging and focusing on aspects of the digital which could give rise to exploitation. A institutional policy or strategy that provides a rationale and workable definition of OEP, allowing for variation in contexts, could encourage the practice, adoption, and production of open and sharable resources. The question remains as to how the “openish” activity mentioned above could be enhanced through institution strategy and an OER space.

To establish OEP requires an integrated institutional change process in which top-down, policy-level support meets situated and strategic exemplary projects. One direction is indicated in Neary & Winn’s (2009) proposal to “refashion the university” and challenge the production of academic knowledge. In this scenario, teaching and learning content share the same practices as research output, through a process of open and public knowledge creation. The alternative is to accept the “business as usual” practices of publishers in higher education that offer significant restrictions to access and cost to students and institutions.

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