

Gathering the Evidence: The Use, Adoption and Development of Open Educational Resources in Australia

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Abstract:

The Open Educational Resource (OER) movement is growing rapidly. Many universities around the globe have launched OER projects, arguably millions of learners have benefited from learning through OER materials, and many educational institutions, mostly distance education providers, appear to have obtained significant rewards. However, we still have much to learn about the OER movement and Australian institutions are still in their early stages of use, adoption and development. Many institutions are still grappling with issues such as resistance to giving away content, as well as copyright and intellectual property matters that remain ambiguous to senior educational managers. Besides the issues mentioned above, the challenges faced by the OER movement include the lack of adequate national and institutional policies in place to steer and encourage further adoption. In the currently policy context, this paper attempts to examine the potential of OERs to bridge the gap between formal, non-formal and informal education in Australia. Then, it highlights some of the current Australian OERs initiatives that have been identified through a centrally funded research project. The study reported in this paper aims to gather an understanding of the extent of OER usage in Australia and identify future policy needs and recommendations which will advance the use, adoption and management of OERs in Australian higher education.

Setting the Scene

It is acknowledged by the authors that there is a range of definitions for OERs. For the purpose of this paper, the definition for OERs adopted here was developed by the OER Foundation that states “Open Educational Resources (OERs), are educational materials which are licensed in ways that provide permissions for individuals and institutions to reuse, adapt and modify the materials for their own use. OERs can, and do include full courses,

textbooks, streaming videos, exams, software, and any other materials or techniques supporting learning” (WikiEducator, 2011). The OER movement has been active for more than a decade and is gaining further momentum at an exponential rate as the process of learning in the digital age is reconceptualised to accommodate a demand for access to education which is not limited by cost, copyright and intellectual property limitations.

The early foundations for OERs were laid in the Open Content Project, the OpenCourseWare (OCW) activities of the Massachusetts Institute of Technology (MIT), the Open Knowledge Foundation and the William and Flora Hewlett Foundation and others. These projects established repositories of educational content, which could be accessed via the Internet as authoritative sources of knowledge (Wiley & Gurrell, 2009). They, and other projects, have subsequently evolved to a state of sharable, freely available educational content with philosophical underpinnings grounded in the accessibility of education being a public social responsibility. The Internet has provided OERs with a global dissemination platform aimed at enhancing collective wisdom, designing learning experiences, which maximise the use of the medium, and networked learning, especially when repurposing OERs. The adoption and use of OERs signal a fundamental shift in the way in which academics view their courses away from the information conveyed in course content towards the processes used in learning and acquiring knowledge (Wiley & Gurrell, 2009).

The early work of the Massachusetts Institute of Technology (MIT) in establishing the OpenCourseWare Consortium (OCWC) has produced perhaps the most widely recognised open content repository. The Consortium now comprises more than 250 educational institutions spread across the global, each contributing their lecture and teaching materials from a minimum of 10 courses, to this publicly accessible domain. These institutions share the common goal of advancing the sharing of educational content and as a consequence impacting upon global educational opportunity. MIT itself now boast some 1,900 online courses, with the total published collection of the Consortium amassing in excess of 13,000 courses in 20 different languages (MIT OCW, 2009). Limited only by the individual’s access to appropriate Internet resources, the Consortium has the potential to reach and educate a substantial, worldwide audience of students. However, course materials are typically produced for local needs and have embedded within them the national or cultural context in which they were originally created (Matkin & Cooperman, 2009). Another important development was OpenLearn, launched by the Open University (OU), which was intended to publish the widest possible selection of OU course materials. It was also intended to do much more: its explicit goal was to engage and support self-directed learners using the latest Web 2.0 technologies. The site would not only host user-generated content (material created by individuals and organisations outside the higher education sector), it would also provide social networking tools to empower users to build their own learning communities (Shuller, 2006).

Other examples of important OER initiatives are the Teacher Education in Sub-Saharan Africa (TESSA) program, which has been developed to meet the needs of teacher training in Sub-Saharan Africa

(Wolfenden, 2008); the Open Educational Quality Initiative (OPAL), an international network to support and promote open educational practices (OEP) (OPAL, 2011); and the Open Learning Network (OLnet), which is an OER research initiative (OLnet, 2011).

At present, OERs provide free access to teaching and learning materials and in many cases entire course materials but users are not able to access learning support nor are they able to undertake assessment and gain formal qualifications. Currently all OER sites simply remain repositories of knowledge and content without formal accreditation and credentialed higher education awards attached to them. Also, while some sites, such as the OCW Consortium, compile annual statistics on the number of hits on particular institutional and course OERs, there is a lack of solid and publically available data on the extent of the usage of these sites and resources by learners and educators. However, the OER Foundation <http://wikieducator.org/OERF:Home> an independent, not for profit organisation is rapidly moving to establish a strategic international alliance between institutional members of the Foundation, for all intending purposes the first steps towards an OER university (OERu), [http://wikieducator.org/Towards an OER university: Free learning for all students worldwide](http://wikieducator.org/Towards_an_OER_university:_Free_learning_for_all_students_worldwide) with the future intention of collaboratively providing accreditation and credentialing services and awards.

There are many more innovative and relevant OER initiatives; the examples mentioned here only scratch the surface of what is presently available. It is not the aim of this paper to cover all of them, but rather, to provide an overview of some of the initiatives available. As the OER movement expands, many universities around the globe have benefited and launched OER projects, providing learners the opportunity to learn through freely available materials. Institutions have also enhanced their reputations, increased student enrolment and developed innovative ways to produce learning materials through the movement (Wiley & Gurrell 2009).

Even though OERs represent an emergent movement and are already re-shaping learning and teaching in higher education worldwide, not every country has taken advantage of the full potential of OERs. In Australia, for example there has been no known funded project seeking to investigate and develop guiding principles to inform the sector's decision-making in this area. Named as the next "wave" by the last Horizon Report (Johnson, Levine, Smith, & Stone, 2010), OERs are likely to reach the shores of institutions worldwide in one year or less. According to that report, the growth of the open educational trend "is a response to the rising costs of education, the desire for accessing learning in areas where such access is difficult, and an expression of student choice about when and how to learn" (Johnson, et al., 2010, p. 6). Managing an identified burgeoning worldwide demand for higher education in the developing world, following the example set by the developed countries where substantial increases in participation rates are considered essential for sustained development, poses an enormous challenge which needs to be undertaken rapidly and with reasonable quality (Daniels, Kanwar & Uvalic-Trumbic, 2009). Considering their evolving pace and demonstrable impact on

the international HE sector, the need for further research and development on OERs is evident.

Australia has not yet developed a national or institutional level policy framework that can address access, use, re-use and distribution of open educational resources and content (A. M. Fitzgerald, 2009; B. Fitzgerald, et al., 2008) whereas in the US, UK and some other European countries, frameworks are already in place. Even so, there are signs that OERs are gradually reaching Australia. For example, Macquarie University with its Macquarie E-Learning Centre of Excellence (MELCOE) in Sydney, which specialises in developing open source software tools and open standards for e-learning (OECD, 2007). Although MELCOE has had some limited success in this area, Macquarie remains on the margins of the OER movement (Suzor, 2006). The University of Southern Queensland (USQ) also has a clear OER strategy in place. USQ remains the only Australian member of the OpenCourseWare Consortium (OCWC), which it joined in 2007. At present, the USQ OCW site offers sample courses from each of the institution's five faculties and also courses from its Tertiary Preparation Program. USQ is currently exploring the means by which it can expand the number of courses available on its OCW site, and structure these in such a way that students will be able to formally undertake assessment for these courses, and then claim exemptions if they later choose to enrol in a full undergraduate award program. Also, the Queensland University of Technology (QUT) has developed the Australian jurisdiction-specific licenses from the generic Creative Commons licenses (Fitzgerald, 2009).

Even though there have been some important initiatives regarding OERs in Australia, the lack of research and government incentives to support educational institutions will certainly limit and slow down the process of adoption, or even prevent universities from pursuing future avenues to better support current students, attract new ones and be internationally competitive. The situation above has encouraged a group of academics and researchers to develop a project proposal to the Australian Learning and Teaching Council, a national funding body in Australia. The proposal was successful funded and the project is in its first stage. This paper will discuss this research project titled "Adoption, use and management of Open Educational Resources to enhance teaching and learning in Australia" and detail various aspects of the project design and the current progress of the study.

The Research Project

The overarching purpose of this project is to develop a "Feasibility Protocol" to enable and facilitate the adoption, use and management of Open Educational Resources (OERs) for learning and teaching within higher education (HE) institutions in Australia. The Feasibility Protocol will provide a set of guiding principles with information on the issues and barriers involved with the adopting of OERs (for example, copyright, intellectual property, licensing and other legal issues), policy recommendations for higher education institutions in Australia regarding adoption, use and management of OERs, and an outline of factors that impact on teaching and learning in higher education. This project also explores the potential of OERs to enhance

teaching and learning, enable and widen participation for key social inclusion targets in higher education, promote lifelong learning and bridge the gap between non-formal, informal and formal learning (Casserly & Smith, 2008; Lane, 2008) in Australia. Some of the reasons why higher education institutions in Australia should consider adopting OERs are as follow:

- “the altruistic argument that sharing knowledge is in the line with academic traditions and a good thing to do;
- educational institutions (particularly those publicly financed) should leverage taxpayers’ money by allowing free sharing and reuse of resources;
- quality can be improved and cost of content development reduced by sharing and re-using;
- it is good for the institution’s public relations to have an OER project as a showcase for attracting new students;
- there is a need to look for new cost recovery models as institutions experience growing competition; and
- open sharing will speed up the development of new learning resources, stimulate internal improvement, innovation and reuse and help the institution to keep good records of materials and their internal and external use” (OECD, 2007, p. 11).

The Bradley (2008) review of Australian higher education noted that higher education participation in Australia was falling behind other developed countries and as a consequence set ambitious reform targets for widening participation in higher education. A national target of at least 40 percent of 25 to 34 year olds having attained qualification at bachelor level or above by 2020; including 20 percent of higher education enrolments at undergraduate level, being people from low socio-economic status backgrounds, were set as targets to strengthen Australia position against other OECD countries in terms of producing sufficient and appropriately qualified graduates. Evidence to date suggests that greater use of Internet resources may be a promising strategy to achieve wider participation. It is feasible that a greater adoption of OERs will enable educational institutions to widen participation and reach socially excluded groups, who have previously had limited access to alternative pathways to higher education, but have increasing access to technologies, particularly the Internet and mobile devices, which can facilitate access to a wider range of content at little or no cost for the learner. In addition, OERs may also help to reduce the cost of the production of course content and free resources for expansion of course offerings in other remote areas of Australia and for a greater number of students. Thus, OERs are an innovative possibility for achieving the reforms of the Bradley Review (2008) and enhancing learning and teaching across educational institutions in Australia by reaching out to diverse and otherwise excluded student cohorts.

Providing access to the more diverse population now seeking a higher education, particularly working adults and those residing in remote locations is increasingly seen as a growing demand for open and distance learning (ODL) and eLearning (Daniels, Kanwar & Uvalic-Trumbic, 2009). The partners institutions involved in this project are the University of New England

(Australia), Massey University (MU, New Zealand) and the University of Southern Queensland (Australia). With UNE's and USQ's expertise in delivering quality distance education for decades, the MU's excellence and innovation in teaching, learning and research, and USQ's groundwork in OERs, this project has already made some contributions to the higher education sector in Australia regarding OERs for teaching and learning. The project's partners have been collectively identifying some issues, barriers, opportunities and successes to inform how the Australian higher education sector might respond to the OER march. The project has two stages. Stage One involves a comprehensive analysis of the state of OERs internationally and nationally and the collection of institutional and national educational policies and frameworks that enable OER practices and development. In addition, a survey of Australian higher education institutions is currently being undertaken to ascertain the extent of development, use and adoption of OERs, this will be followed by a series of telephone interviews with OER stakeholders and practitioners. In Stage Two, the findings of Stage One will provide the basis of a National Symposium, for gathering more information and collecting feedback across the higher education sector. The Symposium is also a key dissemination point for this project. This symposium will include project team members and members of the reference group. Representatives from each Australian university and other related government bodies will be encouraged to attend. The participants will provide feedback on the findings of the survey along with discussion and sharing of practices and experiences around OERs. The final outcome will be the development of a protocol for conducting a feasibility study in the interested Australian higher education institutions to consider how the adoption, management and use of OERs might help to enhance teaching and learning in Australia.

Project aims and outcomes

The major aims of this project are:

- to undertake a literature review to identify key themes in the field of open educational resources
- to undertake a survey and conduct in depth interviews to uncover the state of play of open educational resources in Australia
- to make recommendations to inform and assist the adoption, use and management of OERs within higher education in Australia.

The outcomes of the project are:

- to expand understanding of the OER trend and impacts for Australia;
- to enhance institutional understanding of the issues, barriers, opportunities and successes of OERs internationally through further collation of international experience and the analysis of national data;
- to inform institutional and government policies and practices for OERs within HE in Australia; and
- to develop a Feasibility Protocol for considering how OERs might bridge the gap between non-formal, informal and formal learning through their adoption, management and use in any higher education setting in Australia.

The Feasibility Protocol will provide universities and the wider educational sector with an analysis of current policies and resources and provide examples, alternatives and solutions for institutional barriers to facilitate the potential adoption, use and management of OERs. Developing a Feasibility Protocol will avoid duplication, saving Australian institutions resources and time. The Feasibility Protocol will contain a set of guiding principles with information on:

- policy recommendations for higher education institutions in Australia regarding adoption, use and management of OERs;
- what OERs are and the reasons why higher education institutions have adopted them;
- the issues and barriers involved with the adopting of OERs;
- factors related to the use and management of OERs such as scope, purpose, strategic directions, institutional culture and resource allocation;
- short case studies with examples from institutions that have adopted OERs (Who has adopted OERs and how have they used and managed them? What are the lessons learned?); and
- the impacts on learning and teaching in higher education, as well as on informal and non-formal education.

Where we are up to

The research team has worked collaboratively and extensively in the last months in order to get the project started. At this stage, we have a Project Plan and an Evaluation Plan developed and agreed, including the project's mission and vision (more information on the project and evaluation plan at http://wikiresearcher.org/OER_in_Australia). As required by the funding body, the project team met face-to-face early this year to discuss and finalise matters related to the project plan. Monthly teleconference meetings and frequent emails are now the most common forms of communication amongst team members.

Data collection has commenced through an online survey; following the incorporation of feedback from the reference group into the instrument. The survey seeks answers to a maximum of 33 questions. The number of actual questions is determined by the stakeholder group to which the respondent belongs. Three stakeholder groups, namely higher education management, support service personnel and educators are distinguished. Initial survey questions for all groups focus on establishing the extent of the respondents' knowledge and experience with OERs and the extent of their institutions current involvement in OER projects. Later questions explore opinions related to the benefits and barriers to more widespread adoption of OERs and the perceived need for both public and institutional policies to govern their development and management. The interview instrument is based upon a similar framework to the survey but provides semi-structured questions around each topic and probes for the interviewer to more extensively interrogate the responses of the interviewee. In order to protect the integrity of responses the participants in the survey and interview are

under no obligation to identify themselves individually. The interview concludes with an open-ended question, enabling the interviewee to add any other information they feel may be relevant. The Human Research Ethics Committee (HREC) of the University of New England has approved both the survey and interview instruments. Moreover, the methodology that will be used to conduct the literature study has also been discussed amongst team members and is further discussed in the next section. A thorough approach to the literature will allow others to assess the quality of the work done and enable future replication (Ridley, 2008).

Literature Search Approach

The literature search consists of recent work, no older than ten years. Unless seminal works, preference will be given to recent publications in the last five years. Resources include peer-reviewed journal articles (open and closed), books, conference papers, government websites, reports and policies related to institutional copyright, intellectual property and relevant resources associated with OERs. An annotated bibliography will be compiled of 100 references; it will be a resource for the team members to consult, interrogate and add references to as we progress with the project. The annotations will be peer reviewed by the chief investigator. This process will assist the identification of any omissions or glaring misinterpretations. It is not intended to review the accuracy or validity of annotations. The search has been focused on the international and national literature around the themes already identified in the project proposal and classified above. The team has adopted Zotero, an open source and freely available software to store and manage the references.

The databases used to search the journal articles, books and reports were ProQuest, ERIC, Emerald and JSTOR. The search on government website and related policies was conducted through general search website such as Google, Google Scholar and Yahoo. We have also used WikiEducator, UNESCO, ICDE, OECD and other related websites for policies, framework and guidelines searches. Some of the main keywords used for the searches were: Open education, Open education resources, OER, Open content, Open courseware, Open educational practices, OEP, and Open access

Some of the information incorporated in the annotation includes the purpose of the paper and its findings (if research), the type of research and research methods, the contribution to the OERs movement, relevance to this research project, and relationships to other papers in this annotated bibliography. Both the literature review and the survey also seek to identify existing policy documents with a view to exposing the need for further policy development to assist in furthering the objectives of this research. A policy evaluation approach has been incorporated into the literature methodology. It seeks to obtain policy documents from a minimum of half of the Australian higher education institutions. It is anticipated that most international and national policies will be found in relevant journal articles, books and web sites; while institutional policies are more likely to be focussed on operational issues such as copyright and intellectual property, curriculum development, provision

of appropriate technology and student support, assessment and credit transfer matters. Initial indications appear to show a paucity of policy at institutional level but recognition by some institutions that a policy response will be required very soon. The collection of both international, national and institutional policy, when interpreted and compared, is anticipated to yield a rich data set from which best practice and guiding principles can be drawn to advise both government and institutions on appropriate policy directions.

Conclusion

The project will provide the current context of existing and planned OER provision in Australian higher education. As the project is progressed an exploration of the literature, the analysis of survey responses and the conduct of in-depth interviews with identified experts in the sector, will yield a comprehensive view of the existing 'state of play', the major perceived benefits and barriers and recommendations regarding policy directions which might be considered by government and at institutional level. The social benefits of widening participation to higher education, through the provision of OERs on the internet for little or no cost to students cannot be ignored and will ultimately reshape the way in which the higher education needs of the world will be met. A Feasibility Protocol will assist Australian higher education institutions to ensure they are proactive and at the forefront of these developments.

References

- Bradley, D., Noonan, P., Nugent, H. & Scales, B. (2008) *Review of Australian Higher Education: Final Report*. Commonwealth of Australia, Canberra.
- Daniel, J., Kanwar, A., & Uvalic-Trumbic, S. (2009) Breaking Higher Education's Iron Triangle: Access, Cost and Quality. *Change: The Magazine of Higher Learning*. Retrieved 6th June, 2011 from [http://www.changemaq.org/Archives/Back Issues/March-April 2009](http://www.changemaq.org/Archives/Back%20Issues/March-April%202009).
- Casserly, C. M., & Smith, M. S. (2008). Revolutionising Education through Innovation: Can Openness Transform Teaching and Learning? In T. Iiyoshi & M. S. Vijay Kumar (Eds.), *Opening up education: The collective advancement of education through open technology, open content and open knowledge* (pp. 261 - 275). Cambridge: The MIT Press.
- Fitzgerald, A. M. (2009). *Open access policies, practices and licensing: A review of the literature in Australia and selected jurisdictions*. Brisbane: School of Law, Queensland University of Technology.
- Johnson, L., Levine, A., Smith, R., & Stone, S. (2010). *The 2010 Horizon Report*. Austin, Texas.
- Lane, A. (2008). Widening participation in education through open educational resources. In T. Iiyoshi & M. S. Vijay Kumar (Eds.), *Opening up education: The collective advancement of education through open technology, open content and open knowledge* (pp. 149 - 163). Cambridge: The MIT Press.

- Matkin, G. W., & Cooperman, L. (2009). *The OCWC's Next Frontier - Learning Ecosystems*. Paper presented at the OCWC Global Conference, 23 April 2009, Monterrey, Mexico, Monterrey, Mexico.
- MIT OCW (2009). *2009 Program Evaluation Findings Summary*. Cambridge, Massachusetts: MIT.
- OECD (2007). Giving knowledge for free: The emergence of open educational resources, from <http://www.oecd.org/dataoecd/35/7/38654317.pdf>
- OLnet (2011). About OLnet - Open Learning Network Retrieved 20/06/2011, from <http://olnet.org/node/112>
- OPAL (2011). *Beyond OER: Shifting Focus to Open Educational Practices: Open Education Quality Initiative*.
- Ridley, D. (2008). *The Literature Review : A Step-by-Step Guide for Students* London: SAGE.
- Shuller, T. (2006). *Open University UK: Open Content Initiative. OER Site Visit Report*. Paris.: OECD.
- Suzor, N. (2006). *Macquarie University: A case study in the use and production of open education resources and open source software*. Paris: OECD CERL.
- WikiEducator (2011). *Open Education Resource Foundation*. WikiEducator.org. Retrieved June 16, 2011 from http://wikieducator.org/OERF:FAQs/Open_Education_Resources/#What_are_OERs.3F
- Wiley, D., & Gurrell, S. (2009). A Decade of Development. *Open Learning: The Journal of Open, Distance and e-Learning*, 24(1), 11-21.
- Wolfenden, F. (2008). The TESSA OER Experience: Building sustainable models of production and user implementation. *Journal of Interactive Media in Education*.