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How to cite:

Havemann, Leo (2016). Open Educational Resources. In: Peters, Michael A. ed. Encyclopedia of Educational Philosophy and Theory: Living Edition. Singapore: Springer Singapore.

For guidance on citations see [FAQs](#).

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Version: Accepted Manuscript

Link(s) to article on publisher's website:

http://dx.doi.org/doi:10.1007/978-981-287-532-7_218 – 1

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Accepted manuscript version of:

Havemann, L. (2016). Open Educational Resources. In M. A. Peters (Ed.), *Encyclopedia of Educational Philosophy and Theory*. Singapore: Springer Singapore. http://doi.org/10.1007/978-981-287-532-7_218-1

Open Educational Resources

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Introduction

For many in education, the term Open Educational Resources or OER probably translates functionally as ‘free resources on the internet’. But this shorthand provides only a partial definition which obscures some of the key features and questions of interest that drive the ‘OER movement’, as the community of practitioners and scholars who are engaged with OER are often described. For example, how can educational resources be ‘free’? What is the significance of their ‘openness’? How do they get on the internet? Also, what should we make of the fact that there is a ‘prehistory’ of openness in education which predates current digital versions?

Along with their parent category, Open Education, OER belong to a pantheon of technology-enabled ‘opening’ movements, including Open Source Software and Open Access, that act as drivers for openness, collaboration and transparency, yet tend to operate as ‘silos’, with each aiming to act upon a specific domain of knowledge and practice. Adoption of open approaches can make an enormous contribution in education, but challenges, barriers and threats abound. While the sharing and reuse of open resources is widely accepted as a ‘good idea’ (and promoted by prominent international organisations such as UNESCO and the OECD), this has not yet led to widespread adoption. Education rests upon the communication, exchange and critique of ideas, so to advocate for ‘openness’ in this space is, in a sense, rather uncontroversial. Yet, although few would say they are against openness in principle, specific forms of openness can struggle to gain traction, and OER has arguably been one of these.

Research into the use of OER by educators and their students also suggests engagement can be hampered in various ways, for instance by inequitable access to connectivity and bandwidth; technical and skills barriers; restrictive or unclear institutional policies; and lack of time or reward (Atenas, Havemann, & Priego, 2014; Browne, Holding, Howell, & Rodway-Dyer, 2010; Havemann, Stroud, & Atenas, 2014; Rolfe, 2012; Schuwer, Kreijns, & Vermeulen, 2014; Windle, Wharrad, McCormick, Laverty, & Taylor, 2010). While awareness of these issues and concerns is important, they are not the focus of this entry. Instead my aim is to contextualise and then closely examine OER, so as to provide an overview both of what they are and why educators should take an interest in them.

Educational openness

Openness in education is not fundamentally digital, although increasingly in the current era, educational practices labelled as *open* are technology-enabled. Yet it is worth noting that discussions of 'open learning' and initiatives to make education more accessible did not originate with the OER movement. As Peter & Deimann (2013) indicate, popular movements to democratise access to knowledge have taken historically specific shapes. They trace the roots of what we might today refer to as 'open education' back to the late Middle Ages, when the rise of literacy kindled a public desire for access to knowledge, and discuss a series of historical phenomena, including the development of correspondence schools, which can be understood as precursors to today's digitised forms of open education.

Educational adoption of the term *open* came into common use in the second half of the 20th century, when institutions such as the UK's Open University were created specifically with a mission to open up access to formal higher education qualifications. Such institutions have tended to waive or relax the usual pre-requisite entry requirements, and typically offer programmes through distance and part-time modes, making study accessible to groups such as working adults, stay-at-home parents and caregivers, and those who live far from campuses. By offering the option to attain a traditional qualification via non-traditional routes, these institutions have played a key role in widening access and participation, thereby fostering the intellectual development and economic opportunity of their students (Peters, Gietzen, & Ondercin, 2012).

Following the development of the World Wide Web, the idea of being *open* (in education and elsewhere) has increasingly become associated with digital content and practices. Through the 1990s, Open Source Software (which the web itself had been built upon) began to challenge the pre-eminence of the business model of the corporate software vendor. In academia, an emergent Open Access movement was beginning to question why research outputs, particularly those from publicly funded institutions, should be locked away behind publisher paywalls. The Budapest Open Access Initiative (2002) summed up their position as follows:

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds.

Meanwhile, the idea that educational content could be digital and freely available had been trialled in the form of Reusable Learning Objects (McGreal, 2004). At the same time, the new ubiquity of desktop computing (at least, in First World academic institutions) enabled rapid expansion in the production of digital content by individual educators, as well as institutional initiatives, which potentially might be easily shared online.

In 2001, one such institution, the Massachusetts Institute of Technology (MIT), took the bold step of announcing it would be releasing much of its digital learning content, packaged up as

self-study 'courseware', under the auspices of the MIT OpenCourseWare (OCW) initiative. While OCW was widely characterised as 'putting courses online', MIT made it clear that OCW is content only, and does not include 'teaching' (communication with, or assessment by, MIT staff). This content was simply being made freely available for non-commercial use by students, teachers, and anyone else with an interest, anywhere. This, more than any other single phenomenon, provided a template for OER.

OER definitions and debates

In 2002, UNESCO convened a 'Forum on the Impact of Open Courseware for Higher Education in Developing Countries' to discuss how MIT's approach could be scaled up into an international network of open content redistribution that would be inspired by, but not restricted to, OCW. The delegates at this event coined the phrase 'Open Educational Resources' and stated this term should be understood to mean:

The open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes (UNESCO, 2002, p. 24).

The OER movement was thus officially born, and has since been making the case for educational materials to be available 'to all', and assisting educators to locate content which they can freely adapt without 'reinventing the wheel' (Caswell, Henson, Jensen, & Wiley, 2008; OECD, 2007; Smith & Casserly, 2006).

Significantly, the concept of OER that the UNESCO forum participants defined encompasses much smaller-scale forms of content, as well as the OCW model of whole courses' worth. Weller (2010) has usefully characterised and contrasted these subsets as '*Big and Little OER*'. This expanded scope is significant. Larger-scale projects such as OCW and, more recently, Massive Open Online Courses (MOOCs) and Open Textbooks, typically are made possible through provision of dedicated institutional resourcing and expertise. Conversely, individual educators, often lacking both the significant time and technical skills necessary to develop larger-scale resources, nonetheless produce a wide array of learning resources. The decision to include such small-scale resources therefore reflected a large-scale ambition: the OER movement would seek to engage individual educators (as well as institutions) in sharing their own resources, and reusing and repurposing those of others. This set the stage for definitions and discussions of the nature and purpose of OER to proliferate.

Each element of the phrase *Open Educational Resources* contains potential for differences in interpretation and emphasis. Working back from the noun *resources*, one can note that OER definitions frequently include lists of examples of the types of things that are considered a resource. Here the main differences hinge upon the question of how inclusive the definition wishes to be; so educator-produced learning materials, such as slidesets, videos or documents are always 'in', but granular-level units of content, such as photographs, may not be. Resources that are primarily provided for the use of other educators such as syllabi and lesson plans are only sometimes mentioned, but probably uncontroversial inclusions. Datasets are rarely listed in definitions, but can certainly be viewed as a type of educational resource, while software and systems, which might reasonably be understood as things of a different kind from *resources*, are also sometimes present. The meaning of *resource* is furthermore contingent on the way the

qualifying term *educational* has been interpreted. Although *educational* can suggest something produced specifically for the purpose of education, in the context of OER it is perhaps more usual, and useful, to include any resource that is put to educational use: therefore, any list of examples can never be exhaustive.

Notwithstanding OER scholars' propensity for generating new definitions, there is widespread agreement with the key points of the original UNESCO definition. That is, it is generally understood that the term OER should refer to *freely available digital resources*, which have been released under some form of *open licence* (in practice, almost always one of the Creative Commons licences) that explicitly grants permission for both *use and adaptation*.

Assuming then that OER is best understood as a diverse category, we could say its contents are united by both educational use and *openness*. But openness itself is not an entirely obvious attribute. As Pomerantz & Peek (2016) note, the polyvalence of the term *open* has experienced rapid expansion in the late 20th and early 21st centuries. Consequently, the meaning of *open* in any given usage tends to be both contextual and contested. The particular use of *open* in OER reflects deep concern with good practice in intellectual property and authorship, and therefore in licensing resources and granting of non-restrictive permissions. The use of such licenses removes the ambiguity of permission that occurs when resources are simply made available without explicit licensing - which may or may not confer tacit permission to link to, or re-upload elsewhere, but cannot be assumed to imply any permission to adapt, translate, or mash up.

Open therefore, crucially, does not equate to completely unrestricted; and what it means in the context of a given resource will depend on exactly which open licence is in effect. Wiley's (n.d.) Open Content Definition has been highly influential in this regard. Wiley proposed that open content such as OER should permit the '5 Rs':

1. *Retain* - the right to make, own, and control copies of the content (e.g., download, duplicate, store, and manage)
2. *Reuse* - the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
3. *Revise* - the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
4. *Remix* - the right to combine the original or revised content with other material to create something new (e.g., incorporate the content into a mashup)
5. *Redistribute* - the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend).

From this perspective, *open/closed* is best understood as a continuum rather than a simple binary; the greater the restrictiveness of the licence used, the fewer permissions are granted, and therefore the less open a resource becomes (Wiley, 2009).

The Creative Commons (2016) licensing framework has become the gold standard for the OER community as it provides a comprehensive range of options, from completely open (public domain), through open but *requiring attribution*, and various combinations of attribution with the addition of one or more of the further restrictions *non-commercial*, *no derivatives*, and *share-alike*. In accordance with Wiley's principles, content released under licences which include the *no derivatives* restriction are not seen as truly open, as this

restriction prohibits revising and remixing. The widespread acceptance of Wiley's 5 Rs and adoption of Creative Commons licensing together provide a 'fleshed out' sense of exactly how openness should operate across the OER lifecycle.

Although broad agreement has therefore been reached in the OER community on how openness applies in the context of OER, this has not, as yet, effected truly widespread transformation of educators' practices. This is not to deny that educators frequently do share resources online, but this is often done without explicitly licensing, or else applying the default licence (typically, 'all rights reserved') when using social sharing platforms. Assuming their intention is for these resources to be reused or adapted by others, this perhaps reflects a need for greater awareness of copyright and licensing practices. But this also may reflect a tension around the nature of openness that the OER movement has found difficult to resolve.

Educators who share or reuse 'without a licence' are, arguably, already aligned with the wider purpose of the OER movement, and yet are seen as operating outside of it. For Amiel & Soares (2016), there are two notions of 'the commons' in play here: the legal and the social. While it is true that open licenses provide a robust solution for contributing works to a legal commons, this is not the primary motivation for sharing. Perhaps (in addition to the challenges associated with selecting licenses and platforms that sometimes make licensing complex or unclear) sharing is more likely driven by a commitment to the social commons. This issue, amongst others, points to the need for a greater understanding of educational practices in relation to OER, and potentially, for more fluidity in the way we understand and discuss openness.

The turn to 'Open Educational Practices'

Much of the discussion about OER in its initial decade has tended to be 'resource-focused'. Perhaps inevitably, as a movement for opening content, OER has tended to put content at the centre of the discussion. Thus, much attention has been paid to practical questions regarding the wider resource lifecycle: sharing; storing; discovery; enabling use and reuse; leading on to subsequent sharing of the repurposed version, and so on. Another significant strand of research has considered the quality and sustainability of open resources and how these might be ensured.

While these are important topics, and pose questions that are by no means resolved, this resource focus has, at times, tended to obscure the complexity of human endeavour involved in resource creation, discovery, modification and consumption - and indeed, in the process of education generally, which after all, consists of much more than resources. While enrolled students undeniably benefit from access to a variety of copyright and open resources via their library (and indeed, Google), curriculum, context, assessment and credentials also matter; as do conversation, collaboration, and the forging of relationships with intellectual peers and mentors. In response to these concerns, OER scholars have argued for adoption of the term 'Open Educational Practices' (OEP), in order to place the focus on the open educational activities of individuals and communities (Andrade, Caine, & Carneiro, 2011; Cronin, 2016; Ehlers, 2011). However, this new concept is perhaps even more slippery than OER to define, as OEP gives rise to the same issues with the polyvalence of the term *open*, only more so.

The turn from OER to OEP is less of a question of licensing, and more one of ethos. This does not represent a radical break with the OER movement; indeed, OEP is often discussed in close relation to OER. However, the value of OEP as a concept is in its more wide-ranging remit. An influential definition has been given by Andrade et al. (2011) who state:

OEP are defined as practices which support the (re)use and production of OER through institutional policies, promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path (p.12).

This suggests OEP is most usefully understood as a lens for looking at practice rather than an itemised list of relevant activities.

OEP consist not only of creating and reusing OER, but also of other forms of transparency around academic practice, such as blogging, tweeting, presenting, and debating scholarly and pedagogic activities, in ways that promote reflection, reusability, revision, and collaboration. OEP can be tactics for developing and strengthening communities of practice, and disseminating positive ways of working, as well as leveraging open resources and innovative pedagogies. The initial wave of MOOCs provide an illustrative example, as they were driven by a connectivist pedagogy, which assumes that learning should be driven by interaction, debate and reflection amongst participants (McAuley, Stewart, Siemens, & Cormier, 2010). Assessment practices can also be opened, for example by asking students to create work to be shared beyond the usual audience of the assessor(s), and sometimes classmates, and thereby 'adding value' to the wider world (DeRosa, 2016; Hendricks, 2015; Wiley, 2013). In inviting us to revisit educational openness in all its forms, OEP helps us to understand and leverage the benefits specific forms of openness confer, to seek synergies between them, and to ask: 'why not open this?'

The concept of OEP therefore constitutes more than a fresh take on working with OER. It seeks to frame considerations of how and why people choose to author and learn with open resources, and the practices involved in their selection and modification; but also, importantly, to direct attention to practices that are less about resources; that instead act to open educational spaces, or open other spaces *for* education.

Conclusion

In attempting to build a bridge into a future where educational resources are freely and openly available to all who seek knowledge, whether this might be for the purpose of self study, for learning collaboratively with others, or for teaching, the OER movement has presented us with an important vision. But a resource-focused vision of education can only see pieces of a larger puzzle. Without integrating a sense of the complexity of practice, and of the history and commitments underpinning forms of educational openness, there is a risk that advocating for resources to be open is seen as an end in itself. That said, articulating the overarching goal of the OER movement is not straightforward.

Certainly, the argument has been made that educational resources in digital form can and should be made openly and freely available, and that this contributes towards a wider project of opening access to education. But it is important to recognise that providing access to OER, in itself, increases access to educational material, rather than 'education'. The recent shift of focus to consider *practices* is recognition that it is not only resources that can and

should be opened. Licensing and resource lifecycle management concerns must not overshadow the more fundamental discussion about why resources should be open in the first place. Returning to Weller's distinction between big and little OER: big OER continues to thrive, even if OCW has ceded its place in the spotlight to MOOCs and Open Textbooks. But mainstream adoption of sharing and reuse of little OER has proven a tougher nut to crack. To achieve its desired ends, there needs to be wider recognition that openness in education is not a movement for the emancipation of resources, but of people and practice. Through this improved understanding, it is hoped that the cause of open education - to disseminate knowledge, strengthen communities of practice and promote innovative pedagogies - can be further advanced.

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