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Practising open education

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Education as open (and closed)

> He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature. (Thomas Jefferson, quoted in Lipscomb and Bergh, 1905)

Decades of debate have centred on definitions of openness in higher education (HE) and have considered the potential of open education to align, and even transform, the relationship between knowledge creation and knowledge needs. Proposals and tactics for extending the benefits of access to information and participation in education have a long history. In recent decades, much of this work has taken place under the banner of 'open', a descriptor that has been attached to universities, learning, resources, technology and even practices. Supporters of greater openness in education share the belief and aspiration that, through this route, educational opportunities can be provided to all as a human right and education can be the catalyst for global equalisation in sharing and receiving knowledge.

In practice, there are many 'opens' in education and any use is both contextual and potentially contested. Movements for open access to research outputs and open source software have played significant roles in HE and, in recent years, influenced diversification of open educational practices (OEP). Preceding the arrival of these newer influences, 'open' in an education context has most frequently been coupled with 'distance', as

in open and distance education (ODE) or open and distance learning. Chapter 2 describes the nineteenth-century origins of distance education and the rapid expansion of open universities in the second half of the twentieth century. These new institutions embodied the aspirational concept of extending educational opportunities to all by:

- not disbarring applicants on account of their lack of educational qualifications
- not disbarring applicants on account of their location, by bridging geographical constraints, initially through correspondence courses and now through online courses
- promoting independent learning through appropriate pedagogy and teaching methods.

So, in a real sense, these universities have opened up access for sections of society for whom HE had previously been 'closed'. Nevertheless, as underlined in Chapter 3, this form of openness is far from total and is bounded by economic, social and attitudinal factors. Furthermore, 'open' in this sense does not automatically mean 'free'. The access policies and educational offers of open universities are also shaped by financial considerations. Similarly, a more recent collection of 'opens' (now detached from distance), such as open educational resources (OER), are open in their own specific sense and shaped by initiatives to network, share practices and promote education as a right.

What, then, does it mean to be open, as opposed to closed? An irony of the intense and ongoing debates prompted by the various movements for openness is that it has become easier to identify various forms of open practice than to precisely specify the implicated other of closed education (Havemann, 2020). There is a wide gamut of what can be described as 'closed' practices (usually thought of simply as 'normal' practices), including reliance upon educational materials that are restricted in their use by copyright or password protection, or limiting access to study as a result of either the relative scarcity of provision or the costs of fees or resources, such as textbooks. While 'open discourse' often seems to carry an implication that closed is bad, sometimes closed practices can be entirely necessary and appropriate; for example, the use of password-protected spaces in which students can discuss sensitive topics or even simply feel less exposed as they make tentative steps into new knowledge territories. There are also many practices that exhibit aspects of both openness and closure. For example, a site that showcases openly accessible materials or a course that allows open enrolment may

officially permit both access and reuse of content, but not provide tools or interfaces that allow materials to be easily ported to other sites or remixed (Atenas and Havemann, 2014). Again, there are degrees of openness.

Open approaches in education are probably better understood by the values and aims that drive them, rather than by binary categorisation.[1] They place an emphasis on widening participation, overcoming barriers to engagement with knowledge and promoting equity (D'Antoni, 2009). However, such aspirations are not uniquely held by open educators. Open education is very often practised 'on the side' by educators who work in traditional ('closed') roles and institutions, either by opening up resources and participation to audiences beyond their own enrolled students, or by drawing in open content and practices to become part of students' education (Tur et al., 2020). Educational endeavours are therefore always produced through an interplay of openings and closures, rather than being completely open or closed (Edwards, 2015).

With this in mind, this chapter explores the affordances of a range of current OEP, such as the open licensing of resources and the associated downstream practices that this enables. We would encourage readers to reflect on their own experiences in the context of the opportunities for opening practice outlined in this chapter. It is useful to ask: in what particular respects the practices they are involved in are variously open and closed; why they currently take this form; what future moves towards openness might be possible and desired; and what the making of these moves would require.

OER and Creative Commons

One of the most discussed aspects of open education in recent years is the development of open educational resources or OER. This term, coined by the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2002), represented an evolution from 'open courseware' (an initiative originating from MIT, which referred to the open release of the learning resources of whole courses), towards the more inclusive notion that openness could be applied to content in any form or at any scale. Strictly speaking, the term OER indicates only those resources that have not simply been shared, but have been made legally, technically and practically available online and open, through application of permissive licensing, which enables them to be freely accessed, shared and adapted. Here there is an overlap between OER and open access publications,

although a key point of difference is that open access does not automatically mean open to adaptation.

Central to the conditional openness of OER and their adoption by educators is copyright and a clear understanding of what is legally permitted by various licences. Typically, copyright is asserted to protect a resource from reproduction by parties other than the owner, without express permission, reliance on an exception or, often, payment. However (as in the case of open source software), new forms of licence have been developed in order to confer greater rights on the users of content. Although various forms of licence exist (including open government, general public, software and game licences), the most widely used in education is the suite of Creative Commons (CC) licences. These were developed in 2002 in response to the growing need across education and cultural sectors for an alternative to the binary choice of copyright/free. CC is fast becoming the gold standard that legally enables sharing and collaboration (Smith, 2019).

The CC licence framework provides options that allow the copyright holder to build the most appropriate level of 'openness' into their licence. These include the CC0 licence, which places the work in the public domain, allowing unrestricted use without attribution. Other CC licences require attribution as minimum and further provide creators with a modular range of additional options that set specific constraints on reuse:

- Attribution only (abbreviated as CC-BY), whereby the content can be used and adapted provided that the original creator is attributed, is the second most applied open CC licence after CC0.
- Including the share-alike (SA) agreement within the licence (CC-BY-SA) requires the user to carry forward the same conditions when creating new work that builds from the original content.
- Licences can include the stipulation that no derivatives of the work can be made (ND as indicated in CC-BY-ND and CC-BY-ND-SA) or no commercial exploitation is permitted (NC as in CC-BY-NC and CC-BY-NC-SA). These licences are often regarded as inappropriate for OER due to the restrictions they impose. However, works made available under these licences are still considerably more open than those in which all rights have been reserved.

The evolution of OEP

In some of the literature on open education there has been a tendency to conflate open education with OER, or similarly, to define OEP as practices

involved in the making and use of OER. For us, open education, considered more inclusively, has a longer history than is told in its 'OER chapter' and is inclusive of a broader range of practices. For example, ODE pioneered the use of novel pedagogies and technologies designed to support students' learning at a distance and we can consider these to be OEP even if they emerged before the term gained currency. However, it is true that the terminology of OEP and the development of a distinct community of practice around the concept is the product of recent decades and is linked to the rapid increase in the use of digital technologies throughout HE (including campus based, as well as in the context of distance education).

Digital technologies have changed the way in which learners, teachers and researchers interact and strengthen collaborations and communications within a global community of peers. They have also radically changed the availability and accessibility of learning resources and activities. Examples abound – myriad educational and 'how-to' videos on almost any topic are a mainstay of YouTube. Such freely accessible online resources are not necessarily openly licensed (although they could be). Massive open online courses (MOOCs), usually offered by universities in partnership with platforms, present a case for open learning in which the course content is often, unfortunately, not made available as an OER to be reused elsewhere. These examples demonstrate partially open practices at work, which could arguably be enhanced by extending to open licensing of the resources produced, but there are also open practices that simply have less to do with resources and more to do with community and connectivity.

An example of this latter kind is the set of practices involved in networked participatory scholarship (Veletsianos and Kimmons, 2012), in which educators open up their practices and reflections in order to share, gain feedback or collaborate within loose networks of peers. This kind of activity is typically digital and uses blogs or social media, sometimes also using hashtags or scheduled chat times. The boundary of what gets discussed as open practice is fuzzy in this space. Participation in special interest groups and conferences are more familiar forms of scholarship that can also be thought of as open. These also represent spaces that afford valuable opportunities to connect and share. However, compared with networked participatory scholarship, special interest groups or conferences tend to be more formalised spaces, in the sense that participation involves barriers such as needing to register, pay a joining fee, submit an abstract or be invited to join or speak.

A key subset of OEP are those educational practices designed to facilitate the use of OER. Initial developments in this area of practice were focused on technical developments to support educator practice. Much

emphasis was placed on the creation and sharing of complex forms of content such as reusable learning objects, metadata for describing and discovering them and interoperability between online platforms used for hosting resources. Practice was therefore conceived largely through the lens of digital technology and was thought to require the involvement of specialist educational technologists. However, discussion of OEP has extended rapidly beyond the technological and embraced broader issues of pedagogy and context (Cronin and Maclaren, 2018). Some authors have extended their definition of OEP to include the social context of learners:

> Those educational practices that are concerned with and promote equity and openness. Our understanding of open builds on the freedoms associated with 'the 5 Rs' of OER (reuse, retain, revise, remix, redistribute) promoting a broader sense of open, emphasising social justice, and developing practices that open up opportunities for those distanced from education. (Cannell, 2017: 8)

Within more expansive definitions of OEP, the option to reuse and remix existing material allows for new approaches to design. These new approaches include participation and collaborative methods, in particular that facilitate student engagement and deconstruct the normally binary teacher–student discourse within a learning space. For a detailed example see Chapter 15, which explores the use of OER and MOOCs to scale up global access to specialist health worker training.

The development of a set of communities and practices around OER and OEP is sometimes referred to as the open education movement (Bliss and Smith, 2017), the emergence of which is shaped by initiatives to network and share practices and, simultaneously, is informed by the view that education is not a commodity but a right (Conole and Brown, 2018).

The promise and the drivers

Open education promises a transformation for both teaching and learning, but this transformation requires fundamental strategic change of key attributes (Hodgkinson-Williams, 2010), including:

- technical open formats (connectivity, equipment and platforms)
- legal agreements (open licence knowledge and application)
- cultural relevance (curriculum and context)
- pedagogical framework (student demographic, engagement, assessment and accreditation)
- financial level (sustainable business model).

Open licences ensure that use and reuse of content is legitimate, providing the conditions of the open licence are observed. However, educational content is always contextual – embodying expectations of prior learning, cultural norms and assumptions about the student. As a result, the 'passive option', using good-quality 'found' material, may sometimes be 'good enough', but in other instances may also create barriers to learner participation. Therefore, realising the promise of open education requires a critical awareness that educational materials are created in diverse national and international settings, often characterised by sharp social inequalities, as well as growing awareness of the need to decolonise the curriculum. This is recognised through regional initiatives such as OER Africa.[2]

Developments in OEP are working towards a paradigm shift in HE, away from exclusivist systems that were based on power, privilege and scarcity and towards open and inclusive systems of HE based on justice and human rights and abundance. For example, internationally the Commonwealth of Learning is focused on using OER to meet the United Nations Sustainable Development Goals (SDGs).[3] The Open Education Research Hub has data on the use of OER from more than 170 countries.[4] Perryman and De Los Arcos (2016) have analysed how this is contributing to women's empowerment and the SDGs. In the UK there have been projects that have focused on redefining the boundaries of the academy, focusing on non-traditional learners and involving them in participative design of new courses (Cannell, 2017).

The drivers for OEP are complex. They include socioeconomic factors such as increases in demand for lifelong learning, on-the-job learning and continuous professional development. However, they also include the possibilities created by new digital networked technologies and the personal contexts of participants. We can think of this as an ecosystem – where technology plays a role but is not separated from the social, personal and economic drivers. Political and academic willingness to respond to these drivers by engaging actively with OEP varies across the range of stakeholders – from creators to users and from policy makers to managers.

An example: MOOCs
In HE, MOOCs have gained a celebrated level of success in bridging the transactional distance between experts and learners in a flexible and informal space on a learning platform (see Chapter 15). The initial wave of 'connectivist' MOOCs ('cMOOCs') put into practice the principle that learning and knowledge sharing rest on the ability to define personal and collective learning aims, crowdsource knowledge, share opinions, make

connections and collaboratively construct learning through organic interaction. This idea epitomised the model of the cMOOCs, which placed connectivism at the centre of the learning design, assigning emphasis to self-directed learning, user-generated and OER content and knowledge creation through dialogue. As MOOCs entered the mainstream and were being delivered via commercial platforms, the dominant mode of the later wave of 'xMOOCs' was instructor led, generally video heavy and presented proprietary content with knowledge creation through structured exercises and assessment.

Consistent across this wide spectrum of learning experiences is the fact that students are required to be self-directed and the user experience of the platform plays an integral role in engaging the learner with the content. Therefore, the learning pathway within MOOCs is built around a collaborative partnership, triangulated between the expert instructor, the platform and its business model and then finally the self-directed learner with their own digital capabilities and motivation.

OEP and OER in practice

OEP, as defined by Cronin (2017: 18), emerge from an open mindset as

> collaborative practices that include the creation, use, and reuse of OER, as well as pedagogical practices employing participatory technologies and social networks for interaction, peer-learning, knowledge creation, and empowerment of learners.

Outsourcing to proprietary platforms or third-party publishers, and the contractual arrangements this involves, can restrict this collaborative vision of open practice (Cronin, 2017). Questions of standards, quality and accessibility are critical for academics and educational technologists who wish to make use of OER. Notwithstanding the power of internet search engines, finding relevant, high-quality resources that meet individual specific needs from among the huge number of learning objects and courses that are available online is a challenge. One response to the need for open access across institutions has been the development of online repositories that store and index digital resources such as OER.

Examples of OER repositories include:

- Directory of Open Access Books.[5]
- MIT OpenCourseWare.[6]

A prior example in the UK was the Jisc-funded Jorum repository, which aimed to host openly licensed material from across HE. However, an implicit premise that the availability of material for reuse would encourage widespread uptake proved to be false and levels of engagement with the resources were low. A survey of academics in Scotland in 2015 by the OEPS project found that only around 2 per cent of respondents had made use of Jorum (unpublished report).[7] Jorum and a number of similar sites no longer exist. Open repository functionality is dependent on how easy it is to find relevant, high-quality resources. Enablers for long-term use of repositories rely on the technology, tools and services attracting a community that includes a critical mass of active, engaged users, as well as contributors to create and improve quality of content (Atenas and Havemann, 2014). Institutional repositories designed for particular subject disciplines or professional interests have had greater longevity, providing subject depth and opportunities for collaboration.[8]

UoL's member institutions illustrate a range of approaches to hosting OER, including sites that are subject specific:

- UCL, one of the largest members of the University of London (UoL) Federation, hosts a variety of repositories, including an institutional OER repository (OpenEd@UCL), a video repository containing a substantial archive of publicly accessible material (mediacentral), as well as several topic-specific OER collections such as the online catalogues UCL Archaeology Collections and UCL Ethnographic Collections.[9]
- The London School of Economics (LSE), like several UoL member institutions, prefers to release material that is free to access and share rather than openly licensed material. Its LSE Player hosts regularly released podcasts and videos of LSE's public lectures, seminar series, launches and events.[10]

UoL example: OER repository

Royal Holloway: Early Music Online

Early Music Online (EMO)[11] is a freely available, searchable repository of digital images and catalogue records for more than 10,000 musical compositions from sixteenth-century printed anthologies held by the British Library. EMO was created in over four months in 2011 by a small team that emerged from an existing

relationship between Royal Holloway and the British Library. Funding was provided by a grant of £75,521 from the Jisc Rapid Digitisation Programme.

The project's primary aim was to widen access to the material by HE academics and students and by interested musicians and music lovers outside education. This aim underpinned the decision to release the images and associated metadata under Jisc's Open Education User Licence, so they could be freely copied and adapted for education and research. A secondary aim for the project was to learn how to create a high-quality, easily searchable and sustainable repository for digitised music.

Impacts

- The repository has been well used since its release, especially in the first few years when it was the first of its kind. Professor Stephen Rose, the academic lead at Royal Holloway for EMO, still regularly receives emails from music faculty and musicians about the reuse of its materials.
- EMO material has been recycled by several other open websites and repositories; for example, the International Music Score Library Project, a Wiki site of digitised scores. The digitised images are now also available on the British Library's digital repository, using the Universal Viewer application developed since EMO was launched.
- Finally, the EMO material has been used by a variety of research projects at Royal Holloway and other universities, for example, Royal Holloway's Big Data History of Music,[12] Goldsmiths' F-TEMPO,[13] and the multi-institutional Transforming Musicology project.[14]

In summary/lessons learned

- Working in partnership promoted quality during the project through shared leadership responsibilities and complementary skills.
- To boost discoverability and to avoid creating separate digital silos, the catalogue data was put in existing library discovery systems (the British Library's Explore catalogue and Jisc Library Hub Discover), with links to the digitised repository.

- Institutional investment and a pragmatic approach were key to the initial success and longer-term sustainability of EMO. For example, using Royal Holloway's digital repository meant that the platform has been regularly upgraded as part of the institution's open research strategy.
- Opening up the EMO material did widen access and was used to support teaching and learning by universities and music colleges worldwide in what is an under-funded HE discipline.

It also enabled significant 'second-order' reuse for both education and research. This points up the kinds of broad, long-term impacts this kind of sustainable open education project can achieve within the HE sector.

More recently, many universities have established websites that showcase OER created by the institution. This trend is driven by a desire to enhance reputation and enables the institution to oversee quality. Such sites encourage reuse but rarely include tools for remixing and re-versioning, limiting the potential of collaboration under open practice.

As an example, UCL shares OER course material through UCLeXtend,[15] its free/low-cost course platform, publishes open access academic books through its university press, UCL Press,[16] and hosts a collection of openly available academic and student writing through its blogging platform Reflect at UCL.[17]

The wide spectrum of institutional open practice strategy ranges from 'show and share' to specific support for connective collaborative creation of new OER. Open University UK (OU) is unusual in hosting two OER sites:

- OpenLearn showcases OU OER, some of which is drawn from its mainstream provision, and offers options to freely study short courses. Here, dissemination of OER forms part of a systematic strategy that aims to recruit some users to undergraduate and postgraduate study programmes.
- OpenLearnCreate hosts OER from many institutions and provides open tools for creating new OER.

A number of non-institutional actors have also adopted support for OER and OEP as part of their business models. Wikimedia Commons is an example of a not-for-profit site that includes OER among a much wider

range of openly licensed material. Commercial providers tend to offer a platform to host and showcase OER, while users are supported with design tools for OER creation and OEP if they (or, more often, their institution) subscribe. This is yet another example of the tensions and contradictions that characterise the open/closed matrix. Although they are commercial sites, YouTube and Flickr both include material shared under CC licences. Only some of this material is of relevance to formal education, but a great deal of it addresses the learning needs of people who wish to find out how to read their electricity meter, build a garden shed, fold paper napkins into exotic shapes, repair their washing machine and thousands of other practical skills. There is a blurring of boundaries between dedicated repositories and platforms that host OER and these sites. YouTube and Flickr have huge reach and an enormous user base, but OER coexist within a commercial framework.

When seeking to locate OER, practitioners are faced with a wide range of options and user experiences in the quest to extract the content they require. In navigating this complex landscape, it is worth noting that publishers or platforms may declare their content is open (as in, available) when in legal terms, it is not – a phenomenon sometimes known as 'open washing' (Villum, 2014). For example, Google Maps is often referred to as an open resource even though the data behind it is not openly available. Such content should be fine to use as is but will be harder to contextualise and most likely impossible to adapt.

We list here some interesting examples from within UoL of widening participation, active curation and networked practices. While reading them you may find it helpful to think about these examples through the lens of the 'open' versus 'closed'. What factors define these concepts within the digital arena and the ecology of an institution?

Further examples

The **UCL Centre for Holocaust Education** uses OER and low-cost training materials in its large-scale provision of teacher training to school teachers across England to strengthen commitment to genocide prevention. In the ten years from 2009 to 2019, they reached 12,477 teachers and this number continues to grow. The initiative is managed by an expert team that ensures the materials are based on the latest evidence.[18]

Step up to Postgraduate Study in Arts is a 'MOOC-inspired' Birkbeck College course (originally designed in 2012 and run annually since), which is free to attend for incoming MA students before they start their formal study. The course is mostly, but not completely, online and asynchronous, in contrast to Birkbeck's typical model of evening classes. Bookending face-to-face 'events' emphasise social learning and networking, thereby providing a foretaste of the 'Birkbeck experience', as well as skills development and practice. This example illustrates a role that open practices can play as part of the learning and teaching ecology of an institution, where interleaved open and closed practices are situated in both the digital and physical space (Havemann, 2020).

Teaching translation through editing Wikipedia was a Wikimedia-led 'editathon' for UCL translation studies students. The students translated women's health articles into several different target languages. The open practice involved using the tools correctly, working in edit mode, learning how to make a link and how to reference and Wikipedia etiquette to work within the sandbox of the target language.[19]

Blogs by Birkbeck Arts research students is an archive of freely available blogs, online diaries and podcasts from students on their research interests; for example, production practices in local community radio, the relationship between medicine and visual culture or synergies between thinking and writing in the arts.[20]

Alumni and postgraduate students working together on dissertation and research topic decisions. A database of openly available co-created short videos to enhance users' (future postgraduate students) awareness of how their choice of research questions and methodological approaches will impact successful completion of their dissertation/report.[21]

The Economics of COVID-19 webinar series is free to access and co-organised by the School of Oriental and African Studies (SOAS) Department of Economics and the SOAS Open Economics Forum. The aim of the series is to provide a critical perspective to the recent economic developments related to the COVID-19 crisis.[22]

UoL example of open networked practice: the Bloomsbury Learning Exchange

The Bloomsbury Learning Exchange (BLE)[23] is a digital education centre for six HE partner institutions co-located in Bloomsbury, central London: Birkbeck, London School of Hygiene & Tropical Medicine, Royal Veterinary College, SOAS, UCL and UoL. The BLE exists to share good practice between its partners and enable collaboration on technology-enhanced learning projects. We share two examples of the BLE's use of OER in this analysis.

BLE OER book: *Assessment, Feedback and Technology: Contexts and case studies in Bloomsbury* (Havemann and Sherman, 2017).[24] Through 21 case studies, this book showcases technology-enabled pedagogy and technical development in the use of technology for assessment and feedback by BLE institutions. The book enables BLE partners and the wider HE landscape to see how institutions are using learning technologies to support assessment and feedback in both pedagogic and administrative senses, gain a better understanding of current practices and share good and innovative practices. As the editors noted following publication, although they selected a CC-BY-NC-ND licence to share the book, which allows open access and distribution but does not permit remixing or resale, they nonetheless consider the book a kind of OER, stating: 'part of the ethos of OER is that resources should be adaptable. We felt that here however, in this case of a collection of authored papers, that it is not the book or paper itself we are inviting someone to adapt, but the ideas contained within it' (Sherman and Havemann, 2018).

BLE OER course: 'Digital Skills Awareness'
The Digital Skills Awareness Course (DSAC)[25] is a self-directed OER course to help students new to HE to identify the key digital skills they already have and the ones they need to acquire or improve to succeed in their studies. Based on a CC licence, DSAC is a generic Moodle course available on request to HE institutions to install on their virtual learning environment. A memorandum of understanding is agreed between the BLE and the adopting institution and detailed guidance is shared on how institutions should customise the course for their students' needs and address support mechanisms for them.

A small project team of two ensured quality throughout in several ways:

- Carrying out two needs analysis surveys with tutors and students to guide curriculum development.
- Bringing together a working group from across the BLE institutions to guide major decisions. The working group pulled together the curriculum, found collaborators and reviewed content for the course. This included reviewing specially developed material and already existing OER content from other HE institutions.
- Carrying out informal conversations with various stake-holders throughout the project.

Originally, the course was to be made available only to the six BLE partners. However, the team decided to apply a CC-BY-NC-SA licence to the course and guidance materials to 'share back' with the wider HE community that had contributed OER material. DSAC was originally launched in late 2019 and a small annual budget has enabled the BLE team to regularly update the curriculum and materials and keep adopting institutions informed of the changes. In the year since its release, more than 50 UK HE institutions have requested a copy of the course so far, many more than the original scope of the six BLE institutions.

The project has also led to several additional outputs and new opportunities for the BLE; for example:

- Presentations by the project team to the Association of Learning Technologies conference, the UK Heads of e-Learning Forum and the Jisc Digital Capability Community of Practice in 2018 and a paper presentation at the Research in Distance Education conference in 2019.
- A new collaboration with a MOOC provider to adapt the course for a large-scale international audience.
- A request from BLE members for a similar OER course for teaching staff. This has been developed and is initially being implemented as part of UoL's postgraduate certificate in learning and teaching before being made available to other institutions.

In summary, 'opening up' DSAC and ensuring the quality during project development and after launch have already led to it having a significantly larger and wider set of impacts than originally anticipated. In 2021, the team was presented with the Roger Mills Award for Innovation in Teaching and Learning for the open approach they took.

Challenges in OEP

Thus far we have discussed the aspirations of the open education movement and illustrated some of the progress made with examples of OEP and OER from a range of organisations. However, OEP is not universally understood, let alone accepted as core to HE, despite various supranational and government initiatives and a large volume of supportive research findings. We turn now to consider the challenges faced by OEP and ways of meeting those challenges.

Widening access

Widening access is not just about overcoming situational barriers. Kahle (2008: 35) explains that the practice of openness in education 'is measured by the degree to which it empowers users to take action, making technology [and content] their own, rather than imposing its own foreign and inflexible requirements and constraints'. Open education pre-supposes the participation of the learner and the educator. Self-determination, lifelong learning and personal agency take centre stage, defined by personal goals and outcomes, but also by how the process empowers them to take the action.

Evidence from an OER impact study (Masterman et al., 2011) found that engaging students with open content necessitates raising awareness and appreciation of copyright, intellectual property rights, plagiarism and information literacy. The study also highlighted that academics engaging with OER need to reconsider existing practices and appraise developing content that can be used across different settings through collaborative networking. Using OER can initiate new conversations about the learning experiences and how best to facilitate them.

In thinking about access, it is important to stress that the connection between the learner and the learning resource is neither simple nor linear, but shaped and reshaped by the context and history of both across

spatial, temporal and process dimensions. Spatial access goes beyond geographical or physical barriers as access to digital devices becomes more widely available and affordable. Traditional distance learning models provided access, but opportunities for participants were often restricted to subject-specific or mono-disciplinary learning. Crossing these barriers through an open approach creates the opportunity to examine the potential of interdisciplinary approaches and rethink the constraints of traditional qualification frameworks. Providing learner contexts are integrated into the design process, OER that are created for one location can be adapted, shared and applied to another.

Digital resources and digital communication technologies enable both synchronous and asynchronous contact between students and between students and lecturers, which are driven by participants rather than a predetermined lecture timetable. In principle, open courses enable learning engagement and interaction through a personalised time framework – a utopia of participation and equity. This challenges the formal timetabled practice in education and provides a shift in practice as it empowers users to take control through technology. However, it also sets new challenges in developing collaborative pedagogies, which make space for student participation in design and delivery.

While the earliest MOOCs conformed to the cMOOC model, most of the subsequent MOOCs adopted pedagogy based more on the principles of an extended classroom, with plans to support a high level of student – content interaction but limited student – teacher interaction (xMOOCs) (Miyazoe and Anderson, 2013). Although most MOOC platforms offer a range of options for both synchronous and asynchronous student-to-student interactions such as discussion fora, chat, video conferencing and screen sharing, most of this is optional and take-up often depends on student motivation. Many of the MOOCs set up as 'runs' within set points in time within a year have started to develop an on-demand approach to enable personalised participation.

Collaborative networks start with educators but also invite learners to engage as participants and contributors. Both lecturers and students operate in a digital environment where online educational resources are ubiquitous. Recognising this requires a cultural shift for institutions and individual faculties. Democratising education through an open approach requires shifts in roles and boundaries and relocates traditional programmes into the broader setting of lifelong learning. The process and networked partnerships behind MOOCs have been a catalyst for change within the HE sector and for the involvement of a wide range of stakeholders from universities teaching online, with

governments in countries including India, France, Mexico and China taking on active and investment roles around MOOCs and even edtech and industry. As the MOOC markets evolve, these collaborations and services are likely to require partners outside the HE sector and growing partnerships with technology companies. Governments correlate education with development and MOOCs offer the potential of large-scale, low-cost opportunities to increase the pace of innovation, social mobility and even social inclusion for target groups. In response, by way of an example, the European Association of Distance Teaching Universities' MOONLITE Hague Declaration in 2019 clearly set out MOOCs as a tool for social inclusion for refugee populations (Read, 2019).

The extent of institutional involvement in widening access through the use of OER is varied and dependent on motives ranging from altruistic (often subject specific or for the wider good), strategic adoption enabling cost-effective content development (sharing and using) or as means of innovative revenue generation (Hylén, 2002).

Ensuring quality

The sharing of accumulated knowledge through appropriately developed resources, which go on to support and strengthen teaching and learning, is central to open education. Open pedagogy defines the framework for the transaction of sharing within which open principles and practice can be developed by practitioners.

Global developments in the use of digital resources are likely to affect curriculum, pedagogy and assessment directly or indirectly, whether or not institutions have developed formal policies (for more information on this see Chapters 8, 11 and 12). This is likely to accelerate in the field of personalised and independent learning. It is therefore important that concerns about the quality of OER are addressed through rigorous quality assurance processes. Measures of quality are highly debated. Traditionally, there is an assumption that it resides within the confines of exclusivity and distinctiveness (Harvey and Green, 1993). Educational institutions (particularly 'elite' universities) have built their reputations based on this notion. Open education challenges this definition.

Thinking about quality in a context where OER are freely available via the web and can be reused, revised and adapted requires a more expansive definition. There is a growing emphasis on evaluating quality through a framework that includes:

- an academically sound body of knowledge, ideally supported by research
- the creation of a pedagogically structured learning experience as a participatory process, involving local support and cultural contextualisation
- recognition of learning achievement through rigorously controlled assessment, accreditation and certification.

Bulathwela et al. (2019) propose five quality verticals when looking at the quality of open resources:

- understandability (includes language and cultural context)
- topic coverage (considers document or content entropy and broadly how the topic is considered)
- freshness of information (recognition of knowledge decay and validating content by date)
- presentation (video, audio and language)
- authority (academic authorship and reliability).

Beyond these criteria and the formal quality systems that may accompany them, students will need help to develop and bring to their studies their own critical standards and approaches.

Affordability and business models

For more than two decades, digital technologies have been reshaping the traditional lecture-classroom approach to HE. The global impact of the COVID-19 pandemic, including the need for social distancing, has accelerated this process. Had open resources and practices already been ubiquitously distributed throughout the HE sector, the challenges of the pandemic should have been easier to mitigate, both in terms of staff time spent grappling with technology, pedagogy and sourcing e-resources to support learning at a distance and the cost to institutions (for example, to bolster holdings of e-resources). Encouragingly, though, educators do seem to have embraced networked sharing and discussion and a tolerance for experimentation and iteration in response to the uncertain and evolving situation (Havemann and Roberts, 2021). At the time of writing, the long-term impact of what many still see as temporary departures from 'normal' practice are not yet clear. However, the experience of the pandemic, combined with the ubiquity of online educational resources and a continuing growth in global demand for HE suggests that 2022 has

proved to be a catalyst for change, enabled experimentation with innovation in modes of delivery through online, blended, hybrid curriculum designs, platforms, software and the potential to scale up flexible options.

In a largely marketised global HE system, paying for the exclusivity of the institution and faculty is being reshaped by the abundance of alternatives on the internet. Models of MOOCs that started as informal learning, where certification was not the central driver but rather the OEP and opportunity to learn, are being replaced by MOOCs with a different purpose.

The main question around sustainability of MOOC business models is centred on accreditation value for the career of the lifelong learner. Recognition for learning has been the key driver of the move towards 'freemium' models, such that access to content remains 'free', but certificates or badges need to be paid for at a level sufficient to cover fixed costs.

Major MOOC providers are now providing routes to accreditation through 'Nanodegrees' on Udacity, specialisations on Coursera and credit-bearing MOOCs and micro-credentials via FutureLearn that enable transfer of credit towards degrees. In India and Malaysia, MOOCs are being blended into university degrees. Swayam, an Indian platform, is fast becoming one of the largest MOOC providers and distinctively integrated into the Indian educational framework, simultaneously overcoming faculty shortages and geographical barriers.

Depending on the purpose of a MOOC, its development may be funded via grants or companies, especially if tailored to specific target groups. FutureLearn entered into a partnership with the British Council to pay for certification for MOOC participants from non-OECD (Organisation for Economic Co-operation and Development) countries, facilitating indirect benefits to both consumers and providers of MOOCs. Institutional benefits from investing in MOOCs may include an increased public profile that acts as a marketing tool for their on-campus or online courses, thereby potentially attracting more informed and motivated students and supporting improved retention and success rates.

Increasingly, institutions are required to rethink how and what they offer. Hitherto, at least in the view of many academics, it was high-quality content and accreditation. If content is free, then potentially the institutional focus will shift to the quality of teaching, effective pedagogy and strong support systems, while for the learner it will shift from just taking exams to acquiring relevant knowledge and skills.

More than a decade ago, an OECD report on the potential of OER argued that the case for their use was based on:

> Altruism, leveraging taxpayers' money; efficiency in cutting content development costs; providing a showcase to attract new students; offering potential students a taster of paid-for content; and to stimulate internal development and innovation. (OECD, 2007)

This list was extended by Stacey (2012) who suggested that the benefits to institutions adopting OER include:

> Increasing access to education; providing students with an opportunity to assess and plan their education choices; showcasing an institution's intellectual outputs, promoting its profile and attracting students; converting students into fee paying enrolments; accelerating learning; adding value to knowledge production; reducing faculty preparation time; generating cost savings; enhancing quality; and generating innovation through collaboration.

These early attempts to define the business case for open education, together with more recent developments, suggest the need for a radical change in approach from the traditional model of paying for exclusivity of the experience. Open education offers the possibility of increasing the number of learners but also of lowering the cost to learners. However, the need to attain high quality in OER means innovating.

There is much to be learned from the models established by open universities in the twentieth century – in particular, the importance of systemic approaches to organising education at large scale. However, these models largely pre-dated the internet and there is still enormous scope for combining established distance education models with the power of digital communication technologies, artificial intelligence and the affordances of OER. Current business models remain immature and more work is required to understand the balance between the immediate and lifetime institutional costs of producing, installing and maintaining support to users of the content and the cost to learners to acquire, upgrade, adopt and use it.

Overcoming the skills gap

The ongoing digital and network revolution continues to put new options and tools at the disposal of educators, driving opportunities for new

developments in OEP. The global growth of OEP includes sharing content (open papers and open publishing), sharing resources (all forms of OER, including structured courses, videos and data), as well as broadening opportunities for sharing views and opinions through blogs and social media.

Digital technology allows the expression of multidirectional openness. This can extend the relationship between teachers and students and involve wider collaborative experiences within the social and material context in which learning happens. Such approaches are sometimes referred to as post-web fusion pedagogy (Fawns, 2019), combining andragogy (adult learning) and heutagogy (self-directed learning) within the formal and informal curriculum.

Example: EU project for open-source educational gaming

Open learning and its practice through technology provides a wide range of opportunities within the classroom setting (blended learning) and in wider informal spaces, enabling self-driven learning on MOOCs, discussion boards, peer-to-peer learning and even learning from gaming.[26]

As we become more dependent on the use of technology in education and shift from participatory to collaborative openness, there are new challenges for educators and learners. There can be a gap between digital content creators and the digital learning skills required to receive online content, engage with it and become an active participant rather than simply a consumer. Overcoming this gap demands support for educators and learners alike to develop pedagogical and learning skills appropriate for these new environments. Freely available content on the internet can also lead to misinterpretations and lack of awareness of the role and application of intellectual property rights, open licensing and permissions to correctly use and reuse the content. Operating in an 'open' world offers new freedoms but also demands new skills. It is necessary to teach and support learners in the competences needed to extract the knowledge appropriately and apply it.

Conclusion: the adoption of OEP

Environments and infrastructures that enable collaboration, as well as funding to support the development of OER and OEP, are essential if we

are to foster the transformation and innovation that is required for equitable education. Adoption of OEP across universities is slow and entangled with:

- motivations to share or adopt resources and perceived uncertainty regarding quality
- the work of fostering collaborative cultures for content creation and understanding of licensing
- recognition from stakeholders and policy makers that business models are needed to support sustainability (Harvey and Green, 1993).

Enabling factors for the adoption of OEP and OER by individual academics are likely to include institutional or departmental 'norms', as well as their broader cultural and social context to accept and engage with OEP. The need for educators to accept and use OER within their teaching highlights that it is the individual who is the 'agent of change' that develops practice rather than the technology being used (Littlejohn and Hood, 2017). Academics often engage very deeply with their content and may feel that it is somehow wrong or inappropriate to use educational resources and practices developed by others.

The OER adoption pyramid from Cox and Trotter (2017) succinctly captures social norms, institutional strategic commitments and individual values that define OER readiness, and includes the following six factors:

- Access to appropriate infrastructure, such as the internet, computers, software and stability of electricity supply, which is relevant for many low-resource settings.
- Awareness of the conceptual difference between OER and other forms of free or copyright educational materials.
- Permission to license, which many academics lack under their institutional contract-linked intellectual property right policies. Academics will need to hold the copyright in their own teaching materials in order to make them OERs.
- Capacity, which is based on legal knowledge. At the individual level, this requires familiarity with the CC licensing and technical skills needed to apply it to one's own work, as well as for reusing and adapting OER content. At an institutional level there needs to be policies to recognise and enable public access to content.
- Availability of high-quality resources, which have local relevance and anticipated utility for local needs. This requires awareness of

the growing number of repositories but also a willingness and confidence on the part of the academic to make their own content available. Branding and sharing OER can add value to an institution and gain recognition as a collaborator.

- Volition to adopt open practices, as the use and creation of resources for sharing is driven by the individual academic's beliefs and teaching style. At an institutional level these are guided by strategic policies and educational philosophies.

In a collection of essays on OER in Asia (Dhanarajan and Porter, 2013), the contributors, from a wide range of different countries, find significant similarities in the challenges facing the further development of OEP. Prominent among these is a disjuncture between institutional policy and staff practice, with a strong culture of individual academics wanting to retain ownership and control of resources that they have developed. These examples suggest that wider adoption of OEP requires policy changes that support systematic development of the new skills needed to engage in the digital environment and build on existing best practice to develop new pedagogy.

Open practices promote a shift towards collaboration in education. This is a move away from the familiar idea of the lone teacher who develops and delivers content in isolation. Co-creation is an exchange that can involve the blurring of the boundary between the roles of students and educators. In the unprecedented disruption it has caused across HE, the COVID-19 pandemic has provided overwhelming evidence that the need for open practices and resources is great. One of the few silver linings of this traumatic period has been the collective responses of educators who have shared experiences and resources, supported colleagues and students and opened up new discussions about pedagogic success, failure and uncertainty through webinars, blogs and working groups. The good news, then, is that colleagues are already engaging in open practices; the challenge is to ensure that its potential and expansion can be supported and sustained at an institutional level.

Notes

1 Cape Town Open Education Declaration, 2007, https://www.capetowndeclaration.org.
2 See https://www.oerafrica.org.
3 See https://sdgs.un.org/goals.
4 See http://oerhub.net/.
5 See https://www.doabooks.org/doab.
6 See https://ocw.mit.edu/index.htm.

7   A survey by the OEPS project of academics in Scotland in 2015 found that only around 2 per cent of respondents had made use of Jorum (unpublished report).
8   A rich resource is maintained by one UK academic: https://mickhealey.co.uk/resources.
9   See https://archcat.museums.ucl.ac.uk/; https://ethcat.museums.ucl.ac.uk/.
10 See https://www.lse.ac.uk/lse-player.
11 See http://www.earlymusiconline.org.
12 See https://www.royalholloway.ac.uk/research-and-teaching/departments-and-schools/music/research/research-projects-and-centres/big-data-history-of-music/.
13 See https://f-tempo.org/.
14 See https://tm.web.ox.ac.uk/.
15 See https://extend.ucl.ac.uk/.
16 See https://www.uclpress.co.uk/.
17 See https://reflect.ucl.ac.uk/.
18 See https://www.holocausteducation.org.uk/teacher-resources/.
19 See https://www.ucl.ac.uk/teaching-learning/case-studies/2015/jun/teaching-translation-through-editing-wikipedia.
20 See http://blogs.bbk.ac.uk/research/about/.
21 See https://www.ucl.ac.uk/teaching-learning/case-studies/2018/nov/alumni-and-postgraduate-students-working-together-dissertation-and-research.
22 See https://www.soas.ac.uk/economics/webinars/.
23 See https://www.ble.ac.uk/.
24 See https://www.ble.ac.uk/ebook.html.
25 See https://www.ble.ac.uk/digitalawareness.
26 See https://opengame-project.eu/.

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