2019 Open Education Global Conference
Selected Papers
Editorial policies

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www.openpraxis.org
http://dx.doi.org/10.5944/openpraxis
ISSN 2304-070X

Journal history


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Introduction to selected papers on Open Education for an Open Future

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This Open Praxis publishes 10 selected papers among those presented in the 2019 Open Education Global Conference, hosted by Politecnico di Milano (Polimi) and held in Milan (Italy) from November 26 to 28, 2019 (https://conference.oeconsortium.org/2019). It is a result of the partnership between Open Praxis and the Open Education Consortium (now Open Education Global), which has led to the publication of special issues related to the conference for six consecutive years.

The Open Education Global Conference 2019 Program Committee, among the proposals that had been accepted for the conference and which had also stated an interest in the publication opportunity in Open Praxis, highlighted 45 for the next stage. The best-rated proposals by the program committee, a total of 14, were then recommended for potential publication in this special issue. Ten of them accepted the invitation and submitted the full paper to Open Praxis, following the usual submission guidelines. Each paper was peer-reviewed by two experts. Finally, the 10 papers were accepted for publication once they had addressed the additional revisions requested to authors by the reviewers.

The Open Education Global Conference theme in 2019 was “Open Education for an Open Future - Resources, Practices, Communities”, and the contributions were related to three main tracks: pedagogy, roles and strategies. The selected papers cover various topics in relation to these tracks, and were presented at the conference as follows.

Pedagogy, reflections and policies for an open future

The first two papers were included in this conference track, specifically in the “Open education research” topic.

In the first paper (Are MOOCs Open Educational Resources? A literature review on history, definitions and typologies of OER and MOOCs), Christian M. Stracke, Stephen Downes, Grainne Conole, Daniel Burgos and Fabio Nascimbeni, from different countries in Europe and Canada, contribute to the conceptual debate about open education. After presenting definitions and evolution of both OER and MOOCs, they focus on quality as a key aspect, and introduce this study as a first article in a series about open education they are preparing. The abstract of the presentation at the conference can be found here: https://sched.co/ULWs.

In the second paper (Assessing the Impact of “Open Pedagogy” on Student Skills Mastery in First-Year Composition), Matthew Bloom, from the USA, reports on an experience where renewable assignments were used with a group of students, instead of traditional or ‘throwaway’ assignments. He explains, in detail, the process undertook in the course and the results obtained in the study, highlighting both the strengths and difficulties of this pedagogical shift. The conference presentation abstract is available at https://sched.co/ULWm.
Roles and practices to enact open education

Papers 3 to 5 were included in this track, the first one in relation to the topic “Tools, technologies, and spaces that enable, support and spread open education” and the next two related to the topic “Open Educational Practices and curriculum design”.

Kris Joseph, Julia Guy and Michael B. McNally, from Canada (Towards a Critical Approach for OER: A Case Study in Removing the ‘Big Five’ from OER Creation), reflect on the role of proprietary software big companies in the production of OER. Their contribution to a critical approach to technology goes through literature review and a case study about an OER project they are involved in; they clearly explain the challenges they have faced when removing the Big Five from OER production and distribution. Their analysis can provide a valuable insight and complexity to the debate about open vs closed technology. The abstract in the conference website: https://sched.co/ULW0.

In the next paper, Tannis Morgan, from Canada (Instructional Designers and Open Education Practices: Negotiating the Gap Between Intentional and Operational Agency), explores the role of instructional designers as key agents in the collaboration with faculty in course development. She does so through a qualitative study based on interviews in 7 institutions. The results show relevant ideas about the profile of instructional designers, such as their role as OEP advocates or the limited resources and time they have for OEP. The presentation abstract is available at https://sched.co/ULTv.

Ada Czerwonogora and Virginia Rodés, from Uruguay (PRAXIS: Open Educational Practices and Open Science to face the challenges of critical Educational Action Research), report on a project focused on exploring teaching practices and the integration of digital technologies, which was developed within a community of practice that worked both face-to-face and online. They describe the project dynamics and extract some lessons that can be useful for other academic professional learning communities. The abstract can be read at https://sched.co/ULTX.

Strategies for the further development of open educational resources, practices, and communities through cross-boundary collaborations

The last 5 papers were presented in this track. Papers 6 and 7 relate to the topic “Open education meets Sustainable Development Goals”, whilst paper 8 addresses the topic “Open education to bridge the gaps beyond curricular education”. Articles 9 and 10 are innovative practice papers related to the topic “Open connections and collaborations”.

James Brunton, Orna Farrell, Eamon Costello, Lorraine Delaney, Colum Foley and Mark Brown, from Ireland (Duelling identities in refugees learning through open, online higher education), present a qualitative study about the narratives of six refugees and asylum seekers who received a University of Sanctuary scholarship for open, online higher education programmes. The interviews lead to a rich set of discourses, and the authors focus particularly on the identity the participants construct as online students, as opposed to the one built as refugees. The presentation abstract can be read at https://sched.co/ULSN.

The second paper in relation to SDGs (Open Education for a Better World: A Mentoring Programme Fostering Design and Reuse of Open Educational Resources for Sustainable Development Goals) is authored by Tanja Urbančič, Anja Polajnar and Mitja Jermol, from Slovenia. They report on the process and results of the OE4BW, and international online mentoring program for capacity building to use, reuse and deploy OER on topics with social impact according to the UN Sustainable Development Goals. After two implementation rounds, they provide data and reflections on the program, that can inform future implementations. Abstract available at https://sched.co/ULSH.
Janet Small, Andrew Deacon, Sukaina Walji, Tasneem Jaffer and Jeff Jawitz, from South Africa *(Building capabilities: Using MOOCs to make transitions in work)* present an interview-based study in order to explore the motivations and expectations of African adult learners who had completed one of the MOOCs the University of Cape Town offers. The authors identify different profiles of learners in relation to the work situation: those who expect to change their job, those who search for development in their current work, and future-oriented MOOC takers. The findings contribute to the visibility of the value of MOOCs and online learning for adult workers. The abstract is available at [https://sched.co/ULT0](https://sched.co/ULT0).

In the first innovative practice paper, by Urooj Nizami and Adam Shambaugh from the USA *(Open Pedagogy through Community-Directed, Student-led partnerships: Establishing CURE (Community-University Research Exchange) at Temple University Libraries)*, the authors present the first steps of a Community-University partnership aimed at facilitating access to information and research services to community organizations. They put an emphasis on the project principles (agency, openness, etc.) before setting some useful guidelines for establishing similar programs. The conference presentation abstract can be read at [https://sched.co/ULRV](https://sched.co/ULRV).

In the last paper *(Establishing a MOOC quality assurance framework – a case study)*, Antonella Poce, Francesca Amenduni, Maria Rosaria Re and Carlo De Medio, from Italy, report on a virtual mobility project that included the development of a MOOC focused on the skills needed to participate in virtual mobility. The authors explain the process how the MOOC was designed to ensure quality. The abstract is available at [https://sched.co/ULRb](https://sched.co/ULRb).

We expect you will enjoy these readings. We would like to thank the authors and the reviewers for their contributions, and both the Open Education Global and the OE Global 2019 Conference Committee for the partnership and collaboration in the preparation of this special issue.

Also, being this the last issue in 2019, we specially thank all the reviewers who have collaborated in volume 11. Their names and affiliations are included in the full issue and in the journal website ([http://openpraxis.org/index.php/OpenPraxis/pages/view/reviewer](http://openpraxis.org/index.php/OpenPraxis/pages/view/reviewer)).
Are MOOCs Open Educational Resources?
A literature review on history, definitions and typologies of OER and MOOCs

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Abstract
Open Education gained more visibility as a result of the emergence of Open Educational Resources (OER) and Massive Open Online Courses (MOOCs). This article discusses whether MOOCs should be considered as OER. Open Education and OER can be treated as two strands with different historical roots even though, in theory, OER are an aspect of Open Education. Different OER definitions and typologies are analyzed in relation to their dimensions and categorizations. Furthermore, the four conditions and two original categories of MOOCs are discussed, leading to a debate on their quality. It turns out that there are two perspectives on MOOCs: from an OER perspective, MOOCs as a product can be called OER. From an Open Education perspective, MOOCs are going beyond OER as enablers of Open Education and are understood as an innovative way of changing education. These perspectives are reflected by the OpenEd Quality Framework. The short answer to our leading question is: sometimes, and it depends on your perspective.

Keywords: Open Education, Open Learning, Massive Open Online Courses, Open Educational Resources, literature review, OpenEd Quality Framework

Introduction
The topic of Open Education has become increasingly complex in recent years. The first of a series intended to contribute to a better understanding of that complexity, this article considers whether Massive Open Online Courses (MOOCs) should be thought of as Open Educational Resources (OER). This question is important because it addresses the distinction between a conception of Open Education as based on open content and Open Education as based on open and innovative pedagogy.

Open Education is a broad concept with a lively history (Nyberg, 1975; Stracke, 2018). Unfortunately, there is no stable and commonly shared definition of Open Education. This has led to differences of opinions and to a certain confusion regarding the term (Cronin, 2017). The meaning of Open
Education has changed over time. In the last century, characterised by the rise of institutions such as the Open Universities, Open Education was associated with open admissions and distance education (Weller, Jordan, DeVries, & Rolfe, 2018). More recently, Open Education has been thought of in association with the introduction of OER and MOOCs (Gaskell & Mills, 2014; Stracke, 2015). Thus, the current focus of Open Education is different from the past (Mulder, 2013; Nascimbeni, Burgos, Campbell & Tabacco, 2018).

Within the broad field of Open Education, MOOCs and OER are both quite new concepts, though they correspond to elements of the original definition: the course itself, and the course resources (or course package). As a starting point, the authors follow the UNESCO definition of OER as “teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions” (UNESCO, 2012, p. 1). Meanwhile, the first MOOC was offered in 2008. Since then, the number of MOOCs, MOOC providers, and the number of MOOC-taking students have continuously increased (Hilton, Fischer, Wiley, & Williams, 2017).

In this paper, the authors consider both the historical and contemporary roots of OER and MOOCs. This paper has three major parts. In the first part, different definitions and typologies of OER are analyzed and compared in relation to their dimensions and categorizations. Following this, definitions and usages of the term MOOCs are presented and related to the standard definition of OER. Furthermore, the quality of MOOCs is discussed – introducing the OpenEd Quality Framework as a theoretical basis. Finally, the leading question “Are MOOCs Open Educational Resources?” is debated and answered from the two perspectives of OER and Open Education.

History, Definitions and Typologies of OER

The concept of OER is based on a long history with multiple roots. On the one hand, OER is associated with the trajectory of Open Education and Open Learning that can be traced back for several thousands of years (Nyberg, 1975; Stracke, 2019). Thus, the nature of OER has its roots in the principles of instructional design for open and distance learning and education. On the other hand, OER has more recently been associated with the idea of open content (e.g., as defined by Wiley, 2007), which in turn was based on the idea of free and open source software. Hence, there is a more recent emphasis on licensing in OER that was not reflected in the original Open Education movement. Thus, Open Education and OER can be seen and treated as two strands with different developments (and their own citation circles) even though, in theory, OER is an aspect of Open Education. In the following pages, we describe the rise and history of the OER movement starting at the beginning of our century and compare proposed definitions and typologies of OER (Downes, 2007; D’Antoni, 2009; McAndrew, 2010).

The origin of OER is based on the common and widespread practice of creating and sharing learning resources. While MIT’s OpenCourseWare project is often described as the first instance of OER (e.g., by Knox, 2013), it is a relative newcomer, having been launched only in 2001, and was preceded, among others, by shared lesson plans, libraries of resources available through Gopher, early websites (such as Downes, 1996), open software documentation, and more.

The commonly accepted origin of the term OER is the 2002 UNESCO Forum on the Impact of Open Courseware for Higher Education in Developing Countries. Its Final Report defines Open Educational Resources as “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).
In 2007, a revised definition was proposed in a report to the William and Flora Hewlett Foundation, which had funded many early OER initiatives (Atkins, Brown, & Hammond, 2007). This OER definition includes non-digital resources and focuses on different types of OER:

“OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge” (Atkins, Brown, & Hammond, 2007, p. 4)

In the years that followed, several declarations and guidelines were developed to support the spread of the OER movement, such as the Cape Town Open Education Declaration (2007), the Dakar Declaration on OER (2009) and the Guidelines on Open Educational Resources in Higher Education (2011) published by Commonwealth of Learning and UNESCO.

A milestone was the first World OER Congress organized by UNESCO. It approved the 2012 Paris OER Declaration (UNESCO, 2012) with its broader OER definition:

“teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work” (UNESCO, 2012, p. 1).

It is worth underlining that two restrictions of the earlier OER definitions from UNESCO (2002) and from the William and Flora Hewlett Foundation (Atkins, Brown, & Hammond, 2007) are not considered in current versions: the non-commercial purposes and the enabling by information and communication technologies. Thus, any purposes and any resources (digital as well as non-digital) are covered by the term OER today, according to UNESCO (2012).

The second World OER Congress organized by UNESCO took place in 2017 and led to the Ljubljana OER action plan (UNESCO, 2017). This ambitious policy calls for the development of OER as enablers of Open Education and changes towards innovative education and pedagogical strategies and has resulted in the production of a UNESCO Recommendation focusing on OER to all its member states. The Recommendation focuses on five objectives: 1) building capacity of stakeholders to create access, use, adapt and redistribute OER; 2) developing supportive OER policy; 3) encouraging the development of inclusive and equitable quality OER; 4) nurturing the creation of sustainability models for OER; and 5) facilitating international cooperation on OER. In this recommendation, OER are defined as “teaching, learning and research materials in any medium that may be composed of copyrightable materials released under an open license, materials not protected by copyright, materials for which copyright protection has expired, or a combination of the foregoing” (UNESCO, 2019).

With regards to the typologies of OER, there are many proposals (see Conole & Brown, 2018). One early popular proposal was Wiley’s 4R framework, based on the four usage types of OER: reuse, revise, remix, and redistribute (Wiley, 2007). He later amended it to the 5R framework adding a fifth usage type: retain (Wiley, 2014). Another categorization was proposed by Tuomi (2013) that defined four hierarchical types of OER: type OER I guarantees access, OER II adds usage rights, OER III adds adaptation rights and OER IV finally adds re-distribution rights (Tuomi, 2013). These categorisations of OER focus mainly on the legal and operational dimensions and do not address other dimensions such as open recognition, methodologies and innovations (Stracke, 2018).
For the application and re-usage of OER, several frameworks were developed for the learning design and quality development of Open Education:

- Tuomi (2013) analyses learning with OER as being based on the four pillars for holistic and learner-centered education and learning defined by the UNESCO Report (1996).
- Puentedura (2013) employs the SAMR model focusing four levels of technology integration for the learning design: substitution, augmentation, modification and redefinition.
- The ICAP Framework by Chi and Wylie (2014) underlines the importance of four modes for the learners' engagement behaviours: Interactive, Constructive, Active, and Passive.
- Conole (2015) introduced the 7Cs of Learning Design Framework: Conceptualise (for vision building), Create, Communicate, Collaborate, Consider (as five key activities), Combine (for synthesis building) and Consolidate (for implementation).

Concerning the overall benefits of OER, Butcher and Moore (2015) distinguish three main aspects of OER:

1. “Increased availability of high quality, relevant learning materials can contribute to more productive students and educators [...]”
2. The principle of allowing adaptation of materials provides one mechanism amongst many for constructing roles for students as active participants in educational processes [...]”
3. OER has potential to build capacity by providing institutions and educators access, at low or no cost, to the means of production to develop their competence in producing educational materials and carrying out the necessary instructional design [...]” (Butcher, & Moore, 2015, p. 13).

The OpenEdOz project identified six key benefits of Open Education (OpenEdOz, 2016): 1) economies of scale by the collaborative co-production of learning resources, 2) quality of learning can be raised at decreased time and financial cost, 3) OER are richer and more appropriate to the learning contexts and styles of an increasingly diverse student community, 4) learning opportunities for disadvantaged communities globally and for remote and regional areas, 5) greater collaboration between learning providers through peer review and collegial development of learning materials, and 6) facilitation of greater levels of transparency into the educational processes. Furthermore, the United Nations’ Sustainable Development Goal 4 (SDG) calls for actions to “Ensure inclusive and quality education for all and promote lifelong learning” and promotes OER for the realization and implementation (United Nations, 2015).

We have seen therefore that since the introduction of OER in 2002 several categorizations have been proposed, based on usage rights, applicability to learning design, and benefits. These typologies speak not only to the applicability of OER, but also to the changing conception, over time, of what OER are.

**History, Definitions and Typologies of MOOCs**

The history of open online courses did not begin with Massive Open Online Courses (MOOCs). Arguably, open online learning began with e-mail-based courses in the 1990s (Smith, Whiteley, & Smith, 1999; Abdolrasulnia et al., 2004; Hodges, 2008). Additionally, open online learning in the form of self-paced web-based courses began almost as soon as the web was popularized in the late 1990s and early 2000s (Wiley & Gurrell, 2009). Thus, MOOCs were preceded by both open online courses as well as by OER movement.

The first open online course to be called a ‘MOOC’ was “Connectivism and Connective Knowledge” (CCK08) organized by Stephen Downes and George Siemens in the year 2008 (Bozkurt, Kilgore, & Crosslin, 2018). CCK08 was not content-focused; instead it emphasized network formation among
participants and the sharing of resources and contributions across those networks. This type of MOOC, based on a ‘connectivist’ pedagogy, was later called a ‘cMOOC’.

A second type of MOOC emerged in 2011. Called the ‘xMOOC’, its design emphasized traditional educator-led instruction with the focus on providing content to a massive public audience (Downes, 2007; Stracke, 2017a). The first xMOOC is widely thought to have been Norvig and Thrun’s ‘Artificial Intelligence’, which attracted more than 150,000 participants, though some educators have subsequently made their own claim to being the first (Davidson, 2013).

Since then, the number of MOOCs has continually grown (Gaskell, & Mills, 2014). A highlight of MOOC development was the calling of 2012 as the “Year of the MOOCs” by the New York Times. At the same time, the concept of MOOC was criticized as the “educational buzzword of 2012” (Daniel, 2012, p. 1). In the years that followed, educators evaluated and debated the quality of MOOCs and their educational value (Liyanagunawardena, Adams, & Williams, 2013; Veletsianos, & Shepherdson, 2016; Stracke, 2018; Zawacki-Richter, Bozkurt, Alturki, & Aldraiweesh, 2018). Despite some misgivings, the number of registered MOOCs (9,400 as of 2018), participating MOOC learners (81 Million) and MOOC providers (800+) have been continuously increasing, according to the MOOC aggregator website Class Central (Shah, 2018).

Any definition of the concept ‘MOOC’ will start with the four components that make up the abbreviation: massive, open, online and course. But questions have been raised about each of the four terms and their definitions and interpretations:

1. MOOCs as “Massive”. The term ‘massive’ may be thought in terms of impact, that is, a course is a MOOC if (and only if?) it enrolls massive numbers of students, or in terms of design, where a course is a MOOC if it could enroll massive numbers of students, even if it actually fails to do so. cMOOCs and xMOOCs create mass differently, the former through the use of decentralized networks, and the latter through scalable cloud services and automation. As a quantity, the term ‘massive’ is open to multiple interpretations, though as a starting point a threshold of 150 learners may be considered, based on Dunbar’s (1998) number, signifying the point at which a MOOC graduates from being a ‘group’ where everyone knows each other, to a ‘network’ characterized by interactions. As the number of MOOCs is growing and as a result of international competition, the number of registered MOOC learners per course is decreasing, but most MOOCs are still register far more than several hundred participants.

2. MOOCs as “Open”. Openness can be considered the biggest challenge for MOOCs and their quality. On the one hand, openness means open access (no requirement to sign up, no admission requirements, no fee, etc.) but some courses called ‘MOOCs’ are not freely available and so it was argued they should not be labelled open. Critics argued that the courses offered by Coursera and Udacity should not be called open because the contents are not openly licensed. Disagreement in the MOOC community about the meaning of “open” deepened with the development of MOOC-based business models that, for example, often charge certification fees for having completed a MOOC. Further, “Open” does not mean necessarily “Universal”. A MOOC can be open for a whole learning community (e.g. a university), counting thousands of users, but restricted for outer login. In addition, others argue that openness should be related to open methodologies, i.e., to innovative approaches for learning and education (Gaskell & Mills, 2014; Stracke, 2017a).

3. MOOCs as “Online”. This condition is almost always met and easy to achieve: MOOCs have to be offered and provided online as otherwise they cannot reach the masses of interested MOOC learners and participants. That means that there should be no requirement for offline activities for full participation in the MOOC, even though from the moment the first MOOCs appeared there were initiatives like MeetUps organized by local learners’ groups. But there are also a few MOOCs distributed for offline usage by learners that are lacking online internet
connectivity. In addition, some institutions employed the concept of ‘wrapped MOOCs’ which limited participation to those registered for an associated in-person course ‘wrapped’ around the MOOC content (Zawacki-Richter et al., 2018, Jaffer, Govender, & Brown, 2017).

4. MOOCs as “Courses”. The term ‘course’ can be defined specifically to mean a series of events with a fixed start date, a fixed end-date, and a common theme in the middle. The original cMOOC was based on the old model of ‘a course of lectures’, which would be organized by students and offered by a professor, but without the trappings of what we now call a ‘traditional’ course with assignments and grades, etc. xMOOCs, meanwhile, resembled the traditional model of educator-led instruction. Today, most MOOCs are offering a blend of different models and are offered over a short period of time, normally between five and eight weeks.

Following the popularity of MOOCs, many different models of MOOC-like courses were proposed, often with the intention of addressing perceived shortcomings in the original MOOC model. Some examples include the SPOC (Small Private Online Course), developed to meet the need for more personal contact in courses next to many other proposed combinations and acronym inventions leading to a rather diverse landscape of current MOOC practices and raising the overall quality of MOOCs (Daniel, 2012; Gaskell, & Mills, 2014; Reich, 2015; Stracke, 2019).

The Quality of MOOCs and OER

If we are asking whether MOOCs are OER, then it matters what MOOCs and OER are intended to be. One way to consider what MOOCs are intended to be is to ask what would constitute quality in a MOOC. That is the approach we take in this section.

Since their introduction, the quality of MOOCs has been challenged and questioned by numerous researchers (Stracke, 2017a, 2017b). For example, Weller et al. (2018) argue that many MOOC designers and providers have largely ignored previous literature on quality in distance and e-learning. Additionally, some early studies (e.g., the University of Pennsylvania study by Christensen et al., 2013) focused on metrics like student demographics and course completion.

More recently, an organization called the MOOQ Alliance developed a Quality Reference Framework (QRF) for evaluating and improving the quality of MOOCs (Stracke et al., 2018a). It addresses the adoption, the design, the delivery and the evaluation of MOOCs in order to better enable MOOC designers, facilitators and providers to support the benefit of the learners. The QRF is based on a mixed methods research methodology and included a Global MOOC Quality Survey (GMQS), literature review, interviews, and MOOQ presentations and workshops, at regional, European and international conferences involving more than 10,000 MOOC learners, designers, facilitators and providers. Initial findings suggest that a gap exists between MOOC designers’ perspectives and learners’ preferences on interactions (Stracke et al., 2018b; Stracke & Tan, 2018).

With respect to OER, the OpenEd Quality Framework (Stracke, 2019) can serve as an additional instrument (figure 1). Research supporting the OpenEd Quality Framework (Stracke, 2018) is based on the transfer of the three generic dimensions of quality (‘potential’, ‘process’, ‘result’) to educational applications. These dimensions are derived from Total Quality Management (TQM) with a continuous improvement cycle introduced mainly by Deming (1982; 1986) and Juran (1951; 1992). Their implementation here is similar to the way Donabedian (1980) implemented them in health care. Here they are adapted to Open Education such that they can be combined with the three educational levels (macro, meso, micro) and represented as ‘objectives’, ‘realizations’ and ‘achievements’ (Stracke, 2019).
Does the research and literature on the quality of MOOCs support the idea that the OpenEd Quality Framework could apply to them as well as to OER? This is what we examine in the next section.

**From a Quality Perspective: are MOOCs a Special Type of OER?**

We suggest that whether a MOOC is considered to be a type of OER will depend on the perspective that we take.

If we look at MOOCs from a *resources* point of view (having in mind Wiley (2014)’s 5 Rs, for example), that is, if we consider them as content-based courses, the value of which is based mainly in the quality of their content, then in many cases MOOCs are not OER, since they are much more difficult to re-use and redistribute by virtue of their size and complexity or even cannot be re-used and redistributed due to restrictions in their licensing. From this perspective, MOOCs are normally not thought of as OER, except in rare cases. These rare cases are those in which the MOOCs are licensed to allow re-use and adaptation. Such MOOCs could be categorized either as a single OER, which would create a specific sub-type of OER due to their typical large size, or they could be considered as collections of multiple OER, raising the question of how easily MOOCs could be opened up to provide access to these resources (Nascimbeni, 2018).

If we look at MOOCs from a *learning innovation* point of view, they are potentially much more than merely OER as they include not only resources but also pedagogical methods and pathways (even though as many MOOCs are less innovative than one might hope for). If Open Education is primarily understood as way to include innovative concepts and methodologies for the creation of collaborative and supportive learning experiences, then MOOCs can go beyond OER as a strong instrument to transform and improve the educational quality with a focus on peer learning and online communities.

Normally, MOOCs are not understood as static, as in the first perspective, but as involving lively processes and contents over several weeks that encourages communication and collaboration with other learners and are supported by moderation and tutoring, as in perspective 2. This is especially the case for the cMOOC, though we observe that students develop their own collaborative and supportive elements also in xMOOCs. Additionally, MOOCs offering and benefitting from re-used
and adapted OER can be labelled as OER if considered and addressed as a whole and a product. Furthermore, some MOOCs are licensing all their materials as OER and curating them outside the MOOC platform for easy re-usage and adaptation.

Also, the intent of the possible MOOCs intermediaries (i.e., teachers, facilitators and tutors) is key. It mainly depends how an educator (or a learning community) is using a MOOC, whether using parts of MOOCs as content nuggets, embedding a full MOOC in a course or laboratories, recommending MOOCs as additional course content or using MOOCs as triggers for international collaboration or virtual mobility experiences. These are all ways of using MOOCs that can support their function as OER.

Conclusion and Outlook

In this paper we examined the history and nature of both OER and MOOCs. We found that in both cases their nature can be understood by taking a quality-centred perspective. The quality of these resources, in turn, depends and can be represented in both cases according to the objectives, realizations and outcomes of the resource.

If one takes an open resources perspective, the quality of the content per se is insufficient to establish quality of process and outcome, since quality content by itself supports neither licensing for reuse and adaptation, nor does it support innovation in learning experiences. Thus, many MOOCs (and especially, many xMOOCs) are not OER. However, depending on the intent of the educational intermediary, MOOCs could indeed be considered to be a category of OER.

If one takes an open learning innovation perspective, we can state that MOOCs go beyond OER and they can be seen as enablers for innovative learning processes and experiences. In this understanding, MOOCs are indeed not resources but learning opportunities and environments for self-regulated as well as collaborative learning.

To summarize, the terms Open Education, MOOCs and OER need a clear basic definition of their meaning and perspective for their usage. We hope that this first article of our series on Open Education contributes to better understanding and broader application of MOOCs and OER and of Open Education in general to improve our future learning and education.

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*Open Praxis*, vol. 11 issue 4, October–December 2019, pp. 331–341


Are MOOCs Open Educational Resources? A literature review on history, definitions and typologies of OER and MOOCs


Weller, M., Jordan, K., DeVries, I., & Rolfe, V. (2018). Mapping the Open Education Landscape: Citation Network Analysis of Historical Open and Distance Education Research. *Open Praxis, 10*(2), 109–126. https://doi.org/10.5944/openpraxis.10.2.822


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Assessing the Impact of “Open Pedagogy” on Student Skills Mastery in First-Year Composition

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Abstract
This article presents the results of a 2016 classroom research study assessing the impact of open pedagogy on student skills mastery in English 101, a first-year undergraduate composition course at a two-year community college in North America. Ninety-two students in five sections used the same free OER course materials, but two sections were given traditional assignments (i.e. formal essays and grammar exercises) and the other three sections were given “open” assignments that involved designing and remixing open resources. Assignment results and other course metrics used to investigate the impact on student skills mastery yielded no statistically significant differences in performance between the student groups, which suggests that there may be no harm in shifting away from the traditional “disposable” assignment.

Keywords: Open Pedagogy, OER, First-Year Composition, Renewable Assignments

Introduction
‘Open educational resources’ (OER) are digital teaching materials that are either in the public domain or explicitly licensed for certain kinds of reuse, remixing, and redistribution. ‘Open pedagogy’, on the other hand, refers to the broader practice of redesigning the educational experience to be more meaningful by leveraging the permissions of open content to involve students in a more engaged learning experience via assignments that include curation and remixing. In recent years, while scholarly research into the impact of OER adoption has deepened, the open content movement has begun a shift towards examining the ways that open pedagogy may or may not impact student success.

One of the core principles of ‘open’ pedagogy is the desire to transition away from what David Wiley (2013) calls the ‘disposable assignment’, which “students complain about doing and faculty complain about grading” and ultimately “add no value to the world”. A ‘disposable’ (or what some are now calling ‘throwaway’) assignment can be understood as anything a student is asked to do in an educational context that has no lasting value to anyone beyond a given grade in the limited context of a single course (or even a single module in a course). ‘Disposable’ assignments are graded and then nobody ever looks at them again. Conversely, an ‘open’ assignment provides renewable value outside of the individual educational context, either to other students or to the public. For example, if students in a history class need to be assessed on their knowledge of the factors leading up to the Second World War, an instructor might assign any number of projects to demonstrate this knowledge, including (to name only a very few) a timeline of events, an oral presentation, or even a simple written report. In each case, the project may very well serve as a delivery mechanism for the student’s mastery of the subject and, if desired, the project could be shared with other students. However, without 5R permissions associated with the content of these projects, the work would not necessarily be possible to share digitally and publicly in a manner consistent with existing copyright laws. Student projects usually include many types of copyright-restricted content, from quoted passages to images,
and the use is easily defensible under ‘fair use’ guidelines as long as the work remains in a limited educational context and is not published. That’s where the value of the ‘disposable assignment’ ends. If, on the other hand, the assignment is designed with 5R permissions in mind, the work can exist publicly beyond the individual educational context and be built upon by future learners within and without the institution.

It is important to note that recently, Wiley and Hilton (2018) connected the use of the term ‘open pedagogy’ back to exploratory and collaborative learning practices dating back decades, and argued for the use of the term ‘OER-enabled pedagogy’ to describe the practices “only possible or practical in the context of the 5R permissions which are characteristic of OER,” such as those outlined above.

**Context**

*From OER to Open Pedagogy*

Since the beginning of the relatively young open content movement in education, scholarly studies about OER have focused primarily on models of institutional adoption and/or the efficacy and perception of open resources as replacements for traditional textbooks. There is presently very little research on in-practice ‘open pedagogy’, possibly because the term itself has only been around for a few years, but most likely because the OER movement has been primarily focused on establishing that open content is at least as good as traditional content. In the last few years, however, the discussion of what possibilities emerge for teaching and learning when students are able to interact with remixable open content has begun to occupy the core of the OER movement and, notably, there are few studies that look at the efficacy of these pedagogical practices in the same form and scale as much of the extant OER research.

In recent years, pedagogical practice has become central to the open education movement. Knox (2013) rebutted dominant discussions about the value and efficacy of OER in shifting focus on the capacity of learners by arguing that “the mere removal of perceived barriers to access” does little to disrupt the structures of power—in education and beyond—from which the movement claims to free the students (p. 827). Among other things, Knox is saying that the movement has ignored the role of pedagogy in student learning, focusing instead on freedoms from restricted access and burdensome cost while simultaneously claiming that OER empowers students to self-direct their learning experiences without any kind of evidence that such a thing is actually happening or is even possible. In other words, coupling this criticism with the focus of OER-related studies outlined above, ‘open education’ does not mean much in terms of a transformation of pedagogy if studies only look at what impact an open textbook might have versus that of a traditional publisher textbook. Later that year, Wiley (2013) articulated the idea of ‘open pedagogy’ in a post on his blog at opencontent.org by providing an analogy to describe the use of OER in the way that traditional textbooks are used:

“It is like driving an airplane down the road. Yes, the airplane has wheels and is capable of driving down on the road (provided the road is wide enough). But the point of an airplane is to fly at hundreds of miles per hour—not to drive. Driving an airplane around, simply because driving is how we always traveled in the past, squanders the huge potential of the airplane.”

The point is that, around 2013, interest in the pedagogical potential of open content used in education had begun to congeal—if only theoretically. The ability to retain, reuse, revise, remix, and redistribute content, the argument goes, allows for a more interactive and meaningful learning experience because students can contribute to the very creation of classroom learning tools that may be shared with peers and even the world.
Still, a broader pedagogical groundwork for understanding the potential for open pedagogy was needed. Hegarty (2015) proposed a theoretical model for use of OER in open pedagogy, in which four of the “eight attributes” of effective OER use relate primarily to student activity at the center of the educational experience: “Learner Generated,” “Participatory Technology,” “Innovation and Creativity,” “Sharing Ideas and Resources” (p. 4). Basically the idea is that students are involved in high-impact learning strategies when they become active participants in the generation of course content rather than passive consumers of course content.

Recent scholarly research suggests that open pedagogical practices can provide additional resources for students to use, whether as optional or extra-credit assignments. Scott, Moxham, and Rutherford (2014) described several case studies of what they term ‘shadow modules’ that exist alongside the course’s traditional content but contain student-generated and openly-licensed materials that are made available to subsequent student groups. These were upper-division anatomy courses and the model employs a volunteer student module leader to help “arrange group meeting and tutorials” in shadow module sessions (p. 288). While only 20% (on average) of students actually attended these optional sessions, the materials they developed were shared with and used by all the other students (p. 291). Similarly, Wiley, Webb, Westin and Tonks (2017) demonstrated that student-created OER may actually be correlated to student skills mastery and that extra credit serves as some incentive to get students to make their work available under an open license. Additionally, Grewe and Davis (2017) concluded that the enrollment in an OER course correlates to greater student learning outcomes when compared to prior academic performance.

**Level- and Discipline-Specific Concerns**

Whether or not successful applications of ‘open’ pedagogy in upper division and graduate courses translate to the first-year composition classroom at the community college remains to be seen. Drawing from my own experience advocating for OER across my district and facilitating OER faculty workshops, I can report that many instructors of first-year composition (if not all 100-level courses) are reluctant to leverage 5R permissions to transform their classrooms for fear that the introduction of a vastly-different pedagogy would risk further destabilizing the already precarious place in which first-year community college students find themselves. In other words, faculty may suspect that giving first-year students too much ‘freedom’ (to choose how they will complete an assignment and with what materials) is a bad idea because students at that level are not yet ready for the responsibility. Regular attendance, submission of traditional assignments, and in-class participation are constant struggles in the first-year composition classroom at the community college; introducing students to an ‘open’ pedagogy that is largely foreign to them (as it is not practiced in most elementary and high schools) can be seen as too much of a risk.

Furthermore, English faculty may be reluctant to eliminate the ‘throwaway’ assignment. Part of the purpose (with stress on part) of first-year composition is to prepare students for the kinds of closed-form writing they will likely be expected to do in other courses and possibly (depending on their field of study) in the professional world. Shifting away from ‘throwaway’ essay assignments to ‘open’ pedagogy, the skepticism goes, is likely to leave the students underprepared for other college courses (and maybe beyond).

**Research Question and Method**

The primary research question for this study was: Does switching to ‘open’ assignments from ‘throwaway’ assignments have a significant impact on student skills mastery?
In pursuit of an answer to this question, the students in five sections of English 101, all taught by the same instructor in the same semester and with access to the same openly-licensed course materials, were split into two groups. The control group was given the traditional assignments and the treatment group was given some ‘open’ assignments. Because of the experimental nature of the research, the number of student participants impacted, and the introductory level of the course, only a few relatively small adjustments to course content seemed appropriate for the treatment group. Changes were made only to two of five major course assignments, one at the end of a module on rhetorical analysis and the other involving individual writing improvement plans (Fig. 1). Course materials and instructor-student interaction were consistent between the control and treatment groups with the exception of these two assignments.

<table>
<thead>
<tr>
<th></th>
<th>Control (Traditional / &quot;Throwaway&quot;)</th>
<th>Treatment (&quot;Open&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor, Course, and Semester</td>
<td>Same instructor, English 101, Fall 2016</td>
<td></td>
</tr>
<tr>
<td>Content / Course Materials</td>
<td>QM-certified online course in Canvas, licensed under Creative Commons;</td>
<td></td>
</tr>
<tr>
<td>Modality</td>
<td>Flexible attendance courses (students may choose to complete coursework via Canvas or by attending in person)*</td>
<td>Reflective Essay</td>
</tr>
<tr>
<td>Writing Assignment 1: Reflection</td>
<td></td>
<td>Rhetorical Analysis Essay</td>
</tr>
<tr>
<td>Writing Assignment 2: Rhetorical Analysis</td>
<td>Rhetorical Analysis Essay</td>
<td>Rhetorical Analysis ‘Learning Tool’</td>
</tr>
<tr>
<td>Writing Assignment 3: Narrative</td>
<td>Narrative Scene</td>
<td></td>
</tr>
<tr>
<td>Writing Assignment 4: Argumentation</td>
<td>Argumentative Essay</td>
<td></td>
</tr>
<tr>
<td>Writing Improvement Plan</td>
<td>Grammar and Mechanics Practice Exercises</td>
<td>Personalized Grammar and Mechanics ToolKit</td>
</tr>
</tbody>
</table>

Figure 1: Comparison of Course Delivery.
*Note: Some sections were listed as hybrid and met for 100 minutes per week and some sections met for 150 minutes per week. The control group included one 100-minute section and one 150-minute section. The treatment group included two 100-minute sections and one 150-minute section.

**Measure 1: Rhetorical Analysis**

**Formal Essay vs. Learning Tool**

The rhetorical analysis module began in the fourth week of the semester and its primary learning objectives were to identify and evaluate the rhetorical components and appeals in a given text. The null hypothesis was that changing the major assignment at the end of the module from ‘throwaway’ to ‘open’ would have no effect on the students’ mastery of the learning objectives—students would simply be communicating their analyses in a different form.

The traditional summative assessment, which was assigned to the control group, asked students to demonstrate skills mastery by composing a unified, long-form essay containing a rhetorical analysis of a political speech of their choosing. This formal rhetorical analysis essay would easily qualify as a ‘throwaway’ assignment because it has no value to anyone beyond the demonstration of skills.
and subsequent receipt of a grade (not to mention that it is not particularly interesting to write or evaluate).

On the other hand, students in the treatment group were asked to identify a rhetorical situation common in their daily experiences (whether academic, professional, or personal) and then design a “learning tool” that could be shared to help others in that discipline or interest group understand the functions of rhetorical components and appeals in that specific situation. The actual form of their “learning tool” was not prescribed; students were encouraged to consider what form would be most appropriate for the context and audience they had identified. The tool was expected to contain all original content or appropriately-used open content, so that in either case the final product could be itself licensed and shared publicly. Students were encouraged, but not required, to openly-license their work. Some suggestions included designing an informational flyer, recording a brief video, and creating a slideshow. The course also contained an “Applied Rhetoric” wiki page to which students could choose to contribute if they were having trouble coming up with a general design. Any students contributing to the wiki did so with the understanding that the content would be licensed CC BY-SA.

**Assessments and Results**

A total of 92 students spread over five course sections participated in the study; 32 (in two sections) of the control group and 60 (in three sections) the treatment group, but not all students completed the measured assessments. Because the researcher was teaching five sections of the course at the same time, it was not possible to split the students into equal groups. The differences between the groups were measured using the following metrics:

- Quality and number of examples provided in the analysis to illustrate the use of rhetorical components or appeals
- Performance on end-of-module “Concept Quiz” about rhetorical components and appeals
- Performance on an unrelated end-of-semester Argumentative Essay

The last of these metrics was not aimed at their performance on the rhetorical assignment itself, but their performance on the course’s final critical assignment, a long-form argumentative essay. While the measures of examples and quiz performance sought to gauge student mastery of rhetorical analysis skills, the third measure intended to determine whether or not there would be a difference in performance on a major essay assignment later on, when the control had gone through the experience of composing an additional essay during the semester and the treatment group had not. This was in response to the concern outlined above that transitioning from ‘throwaway’ to ‘open’ might debilitate students in a course where one of the objectives is to compose just such a closed-form essay (as disposable as it may be).

**Use of Examples**

In the course of reviewing student submissions, the researcher tallied the number of examples used to illustrate claims about rhetorical components or appeals, as well as how many of those examples were (by my estimation) accurate in their use. In the case of the control group, examples were provided in the form of paraphrases or quotations from or observations of the political speech chosen by the student. In the treatment group, paraphrases or quotations of hypothetical or suggested speech were common, but there tended to be more abstract descriptions of how a certain rhetorical component
would work in a given situation. In the treatment group, a vast majority created the rhetorical examples themselves, since they were asked to invent a relevant rhetorical situation to analyze.

The number and accuracy of provided examples were used to calculate mean accuracy. In other words, instead of focusing on how many examples were given, the focus was on how many of the given examples were determined to be accurately illustrative of a particular rhetorical component or appeal (Fig. 2).

<table>
<thead>
<tr>
<th></th>
<th>Avg. # of Accurate Examples</th>
<th>Avg. # of Total Examples</th>
<th>Mean Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4.3</td>
<td>5.8</td>
<td>74%</td>
</tr>
<tr>
<td>Treatment</td>
<td>3.4</td>
<td>4.9</td>
<td>69%</td>
</tr>
</tbody>
</table>

Figure 2: Comparison of mean accuracy of examples used between control and treatment groups.

While students tasked to write a ‘throwaway’ essay did average a greater number of given examples and relevant examples overall, and averaged a full 5% higher on accuracy, the statistical tests identified this difference as not significant.

**Concept Quiz Results**

At the end of the rhetorical analysis module, students were given a thirteen-question quiz worth a total of twenty-five points. Quiz questions were all multiple choice or matching, and all focused on the basics of definition and identification of rhetorical components and appeals. As with the rhetorical analysis assignment itself, not all participating students completed the quiz. In the control group, 22/32 participated (i.e. took the quiz) and the mean score was 19.77. In the treatment group, 43/60 participated with a mean score of 20.42.

The boxplots in Figs. 3 and 4 illustrate the range and distribution of student scores in the treatment and control groups.

Figure 3 and 4: Boxplots illustrating the range and distribution of student concept quiz scores in the treatment and control groups.

*Open Praxis, vol. 11 issue 4, October–December 2019, pp. 343–353*
While the treatment group, given the ‘open’ assignment, demonstrated a tighter performance and a slightly better mean quiz score, a Wilcoxon Rank Sum test determined that the difference was not significant.

**Final Argumentative Essay**

In the course’s final module, students were assigned a closed-form argumentative essay in which they were expected to argue a position about language usage in response to an issue raised in one of the module’s three primary texts. Nothing was particularly ‘open’ about this assignment, though the texts they had to read were freely-accessible (to them): the first pages of Italo Calvino’s novel *If on a Winter’s Night a Traveler* (available for review via Google Books), sections of David Foster Wallace’s essay “Tense Present” (available through the institution’s subscription to *Academic Search Premier*), and Toni Morrison’s speech at the 2008 PEN Literary Gala (video available via YouTube and also published in *Burn This Book*). All students were provided with the same links and assignment details.

Again, not all participants submitted the assignment. From the control group, 22 of 32 participated with a mean score of 165.7 (83% / B). From the treatment group, 38/60 participated with a mean score of 167.3 (84% / B). The difference was marginal and a Wilcoxon Rank Sum test yielded that it was not statistically significant, illustrated in Figs. 5 and 6.

[Figure 5 and 6: Boxplots illustrating final essay scores in the treatment and control groups.]

**Analysis/Discussion of Measure 1 Results**

Qualitatively speaking, a major confounding factor for those in the treatment group was that they were expected not only to demonstrate skill at rhetorical analysis but asked to apply their rhetorical skill in their choice of form and design for the tool. Put briefly, some students in the treatment group found the task exceedingly difficult. After discussion with several students in the treatment group, the researcher concluded that the assignment was more difficult not only because they’d largely never been asked to an assignment like that, but because it required higher-order cognitive tasks. Rather than “simply” explaining their rhetorical analysis in the (relatively) familiar closed form of an essay, students in the treatment group were making their own decisions about form and content. The response to this additional challenge was unsurprisingly various.

Some students met the task with great interest, in part because they did not have to write an essay and in part because the learning tool assignment permitted the creative use of students’
individual skills. By far, the most common choice of form for the learning tool was a set of slides in MS PowerPoint, often including detailed explanation in the slide notes. Some students recorded and edited videos and some simply made videos using mobile devices. One student used his knowledge of Wix web design software to create a well-structured website. For many students, the opportunity to demonstrate their analysis in a form with which they were already familiar seemed a pleasant alternative to a full length formal essay. Considering that the two groups fared the same on the final essay in the semester, it seems that there was no reason to burden them with yet another essay assignment when the same skills mastery could be displayed in a more familiar form.

Of course, many students found this confounding factor frustrating, either out of outright resistance to the idea of doing something different or (more often) because of the extra considerations required by the very same freedoms afforded by the open assignment. To clarify, ‘outright resistance’ was not common; most students accepted the task in the typical range of first-year composition student reactions to assignments, from tired resignation to energetic motivation. However, a small few students were vocally opposed to the very concept of the ‘open assignment’ during lab-time consultations. One student literally threw up her hands and asked why she couldn't just type out her analysis in MS Word like she does with homework in every other class. A couple other students in the treatment group insisted on writing essays. Fortunately, this kind of insurgency was rare. When students found the task difficult, the researcher was often able to help brainstorm ideas and provide feedback during lab time. Not unlike the process of drafting an essay, several student projects went through multiple phases of transformation before they were anywhere near finalized. In some cases, students were unable to answer one of the assignment’s fundamental challenges: create something that might have actual value outside the classroom. It was a tricky challenge that sometimes puzzled the researcher, too. It did not always work out. One interesting example of this was a student intending to pursue medicine who had elected to create a tool to inform ER employees about how the principles of rhetoric may be applied when communicating with tense, scared, and impatient patients. He insisted on making a set of informative slides, but when pressed about what real-world value a set of slides would have to ER employees, neither he nor the researcher had any idea. After some discussion, it was determined that a medium-sized informative poster would be appropriate, the kind of thing one might find in a break room. He liked the idea but did not, in the end, submit the assignment.

It may be that some of this difficulty stemmed from a dearth of models by which students would have been able to see examples of various successful projects. A version of the assignment had been piloted in two sections of English 102 the summer preceding the study, so many issues of prompt and instructional clarity had been worked out (these sections did not participate in the study). However, students in the treatment group had only two models left over from this pilot, and both were handouts designed by students for students but with different learning objectives in mind (one was about plagiarism and one the "red herring" logical fallacy). As this learning tool assignment is used in subsequent semesters, the number and variety of quality models will likely grow.

**Measures and Results: Grammar and Mechanics**

**Practice Exercises vs. Personalized Toolkit**

In the first week of the semester, students were given a grammar and mechanics diagnostic consisting of ten 10-question quizzes focused on some of the more common types of errors that students writers make (e.g. comma splices, misuse of semicolons, subject-verb disagreement). Additional feedback related to grammar and mechanics was given to students in the form of marginal comments on the
first and third writing assignments when necessary. Approximately three-quarters of the way through the semester, students were assigned different versions of a “Writing Improvement Plan”. Both the control and treatment groups were asked to look back at their diagnostic results and also consider any additional feedback they’d been given on their essays. If a student scored 6/10 or less on any of the ten quizzes in the diagnostic, they were expected to work on that specific error. The control group was provided access to free, online (but copyrighted) exercises at chompchomp.com and owl.english.purdue.edu and expected to complete and submit exercises corresponding to the errors that they needed to work on. The treatment group, on the other hand, was given four openly-licensed resources to explore: two full courses (Saylor’s ENGL001 and Lumen Learning’s English Composition 1), an open composition textbook (McLean’s Writing for Success), and a mechanics primer and workbook (Aragona’s Sentence-Level Essentials). Students in the treatment group were told to find content in those resources that would help them improve in the areas indicated by the diagnostic and encouraged to remix the content to be personalized to their needs. They were then asked to submit a description and explanation of this “personalized toolkit,” including what content from which sources they might use and an explanation of why they chose that content. They were not required to actually assemble the toolkit, but told that, if they did, they would receive feedback. In other words, the control group did no exercises; rather than grammar drills, they reviewed a variety of open content and made evaluative decisions about how they might remix that content to best facilitate their growth.

Assessment and Results

The diagnostic module students completed at the beginning of the semester was exactly replicated at the end of the semester: they took the same test again. The only difference was that students in the control had been assigned to drill prescribed exercises, whereas students in the treatment had been assigned to review and evaluate the open content and explain how they’d use it. Students in both groups had access to the open content, but only the treatment group was required to actually view the content (and the researcher suspects that very few, if any, students in the control group utilized the linked open content when it wasn’t required that they do so). Only 8/32 (25%) students in the control group took both the pre- and post-tests, compared to 20/60 (33%) in the treatment group. Both groups saw statistically significant (p=.000) gains in skills mastery over the semester (using a nonparametric Wilcoxon Rank Sum test), illustrated in Fig. 7.

Figure 7: Graph comparing improvement in scores on the grammar diagnostic tool in treatment and control groups.
Interestingly, while the treatment group began almost a full ten points below the control, they improved much more than the control and ended at almost the same average. However, multivariate tests comparing the effects of time and treatment between the groups determined that this difference was only “approaching” significance (p=.071).

**Conclusion**

Future sections of these courses given the same assignment will have more models as examples, which may help to mitigate the confounding factor of designing the tool from the ground up. Furthermore, future sections will also have the option of improving on the content in the “Applied Rhetoric” course wiki, which may have unforeseen consequences. In any case, this study’s results indicate that the open assignment may be an option in the pursuit of student skills mastery.

While the shift to a renewable assignment in this study yielded no significant difference with respect to student skills mastery, it is possible that the failure was of the study’s design itself. As noted above, the renewable assignment given in the module focused on the topic of rhetoric was considered to be more difficult than a traditional essay would have been, and that may be because rather than being presented with a familiar form (i.e. an essay) and told to fill it with a demonstration of their knowledge, students were expected to identify a real-world situation and design a tool that could be used in that situation to explain the concepts of rhetoric in context. These are arguably tasks that are much more complicated, and the summative assessments used to compare the impact of the differing pedagogies focused on simpler skills, such as the ability to identify and describe a concept rather than apply it directly to the real world. Future iterations of this research should consider ways to design the assessments so that more complex skills are measured.

While more challenging, the renewable rhetoric assignment nonetheless provided students the opportunity to use prior knowledge and extracurricular skills in the demonstration of their rhetorical prowess, which some students found exciting and others found frustrating.

One arguably significant finding in this study was the statistically insignificant difference between performance on grammar quizzes between students in the treatment group, who were literally just given a few open resources and told to explore, and the control group, who were assigned practice drills on error types they were not able to identify in the pretest.

Despite the experiment’s many flaws, the results show that, in this semester with these students sharing the same OER and the same instructor, moderate shifts toward open pedagogy had no impact on skills mastery. In other words, in this case it may be true that I did no harm by disposing of the ‘disposable assignment’.

**References**


Toward a Critical Approach for OER: A Case Study in Removing the ‘Big Five’ from OER Creation

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Abstract
This paper examines the role of proprietary software in the production of open educational resources (OER). Using a single case study, the paper explores the implications of removing proprietary software from an OER project, with the aim of examining how complicated such a process is and whether removing such software meaningfully advances a critical approach to OER. The analysis reveals that software from the Big Five technology companies (Apple, Alphabet/Google, Amazon, Facebook and Microsoft) are deeply embedded in OER production and distribution, and that complete elimination of software or services from these companies is not feasible. The paper concludes by positing that simply rejecting Big Five technology introduces too many challenges to be justified on a pragmatic basis; however, it encourages OER creators to remain critical in their use of technology and continue to try to advance a critical approach to OER.

Keywords: open source software, proprietary software, critical approaches to open educational resources, critical theory

Introduction
“The enemy is proprietary software,” wrote Richard Stallman (2002), a key figure in the early days of the free software movement. Wayner (2000) echoes this view, arguing that copyright, licensing, and patent laws gave a level of control to the software companies that was unmatched by any other industry. The disdain for proprietary software on the part of free software advocates like Stallman (2002), Stallman and Papatheodorou (2012) and Wayner (2000), stemmed from the unprecedented power it gave companies over both developers and end users alike.

Critical literature has identified a number of problematic power imbalances in Open Educational Resources (OER) development - from concerns over the use of free labour and the failure to address academic precarity (Almeida, 2017; Crissinger, 2015), to arguments that open educational resources serve as a form of academic neocolonialism (Almeida, 2017; Amiel, 2012; Rhoads, Berdan & Toven-Lindsey, 2013; Weiland, 2015). However, reservations over the use of proprietary software specifically, and reliance on ‘big technology’ (including Apple, Alphabet/Google, Amazon, Facebook and Microsoft—hereafter referred to as the ‘Big Five’) are often less starkly and morally framed as Stallman’s approach.

In an effort to expand the critical literature on OER, the following case study aims to problematize the role of Big Five technology in OER production. Drawing on critical approaches to technology and Stallman and Wayner’s moral arguments against proprietary software, the paper addresses two important questions - what are the implications of removing Big Five technology and software from OER production, and does eliminating Big Five technology meaningfully advance a critical approach to OER?
The paper addresses these questions beginning with a review of the literature on OER and proprietary software, and then examining some of the theoretical literature on critical perspectives of technology. Using a case study of the University of Alberta's (2019) *Opening Up Copyright* instructional module series, the paper proceeds to analyze how Big Five technology, particularly Microsoft, Google and Amazon, embeds itself in OER production and the challenges in relying on open source alternatives. The paper concludes by suggesting that simply avoiding Big Five technology does little to advance a critical approach to OER, and offers several alternatives.

**Literature Review**

Literature on OER often emphasizes the natural connection between open resources and open source software; however, many scholars also suggest that preferences for open software be tempered by considerations around usability. Hilton III, Wiley, Stein and Johnson's (2010) ALMS (Access to editing tools, Level of Expertise required to revise or remix, Meaningfully editable, and Source-file access) framework for OER notes that both proprietary and open software can be used for OER creation, though more importantly they emphasize that the adaptability of the resource is diminished if there is a significant training/learning curve required for end-users to edit materials. Specifically, they suggest OER creators “choose the simplest tool possible” (Hilton III et al., 2010, p. 41), rather than privilege open source tools. Expanding on the ALMS framework, Wiley (n.d.) in his “Open Content Definition,” emphasizes four important points about open design and technology (access to editing tools, level of expertise required, meaningfully editable, and self-sourced), but does not advocate for an outright rejection of proprietary technology. Abeywardena (2012) calls for more free and open source software to support OER development, but similarly does not advocate for a complete elimination of the use of proprietary software in OER. In related work Abeywardena, Choy and Raviraja (2012) applied a desirability measurement for OER and found resources relying on proprietary software are lower ranked than those using open software, but they too do not call for outright avoidance of proprietary software in OER. The ALMS framework’s recommendation for prioritizing simplicity over open is also reflected in the framework proposed by Christiansen and McNally (2018) and McNally and Christiansen (2019), which notes that open file formats increase openness; however, McNally and Christiansen (2019) caution that file format is only one of eight factors influencing openness and that maximizing openness is not always ideal.

One of the most significant benefits to OER is their accessibility for use. The UNESCO definition of OER specifies adaptability as a key factor (2002, p. 24). In spite of this, existing work suggests that most OER material is created on a context-specific, as-needed basis, without downstream reuse in mind (Richter & Veith, 2014). Hilton III et al. (2010) emphasize the importance of the ability to “unlock” OER for adaptation and evolution. The authors provide a number of recommendations to OER creators, advocating that source files should be provided in open formats that content reusers and remixers can edit with a wide range of free or low-cost software programs. Most OER content must be customized before it can be applied in a new context (Dichev & Dicheva, 2012), yet Wiley, Bliss and McEwen (2014) note that little empirical evidence exists for the revision and remixing of OER materials. The accentuation of practical considerations such as usability and accessibility of OER appear to mitigate against concerns around the use of proprietary software.

While usability, reusability and accessibility are three important elements emphasized in the literature on OER technology, a fourth important consideration is the sustainability of OER. One heavily discussed element of OER sustainability has been the range of business models that can be used to support production (Dholakia, King, & Baraniuk, 2006; Downes, 2007; Wiley, 2007a;
Koohang & Harman, 2007; Lane, 2008; de Langen, 2011, 2013; de Langen & Bitter-Rijkema, 2012). While a complete review of business model literature is beyond the scope of this paper, two important considerations arise in the connection between OER sustainability and business models. First, several authors suggest that OER production processes be made efficient as a means of controlling costs for production and maintenance (Downes, 2007; Schuwer, Wilson, van Valkenberg, & Lane, 2010; Schuwer, Lane, Counotte-Potman, & Wilson, 2011; Nikoi & Armellini, 2012; Annand, 2015). While controlling costs through efficient production processes underscores an important element of OER design, the literature on whether costs can be best minimized by relying on proprietary software (emphasizing ease of use and lower production costs) versus free or open source (which may have higher creation costs for creators and modification costs for downstream users) is underdeveloped. A second key element of sustainability discussed by Downes (2007), Koohang and Harman (2007) and Stuurman, van Eekelen and Heeren (2012) is ensuring successful OER by developing a community of practice or community of users. Thus, OER creators must consider the software tools used for production in addition to the tools required to foster and sustain user communities.

Finally, there exists a crucial body of literature problematizing several key aspects of OER. Bayne, Knox and Ross (2015) highlight that the lack of critical understanding around the term ‘open’ leads to a lack of consideration about what closures are implied through the uncritical championing of openness. This concern is reflected by several authors who have highlighted the lack of consensus about what ‘open’ actually entails (Farrow, 2017; Knox, 2013a; Pomerantz & Peek, 2016). In examining open educational technologies, including OER, Selwyn (2013) argues that social relations around open production processes are under- scrutinized, and posits that open technologies in education reflect a view of the dominant individualized, neoliberal capitalist ideology. Similarly, Almeida (2017) and Falconer, Littlejohn, McGill and Beetham (2016) note the underlying neoliberal aspects of OER. Although OER literature underproblematizes the role of proprietary technology, and in particular the role of technology and services from technological giants (who have become the world’s largest corporations by market capitalization), there exists a rich and extensive literature on approaches to technology that can illuminate the importance of critically examining how social and power relations are bound into and obscured by technology.

**Theoretical Foundations**

While the literature does express concerns over the reliance on proprietary software in OER projects, and there are calls for “critical” approaches to OER/open education, there is a need for further consideration of the political economy of technology in OER production. The earliest work in a critical political economy of technology can be traced to Marx and later the Frankfurt School (Feenberg, 2002). Feenberg (1995, 2002) posits technology is inherently biased toward preserving hegemony, and that the more technology is used the stronger its hegemonic power. This assertion aligns with Winner (1986), who referred to technologies as a means of building or reinforcing order and advocated a more in-depth examination of technology’s impact on the distribution of power and authority. More importantly, and in alignment with Stallman’s observations, Feenberg (2009) suggests that technology is a source of power. It follows that the use of technology in an educational context is deeply political, and the impact of technology selection is worthy of examination. Mercado (1998) warned of institutional dependencies created by the adoption of rapidly-advancing information technologies in libraries and related institutions, and the free-market approach to technology noted by Winner (1986). Large platform providers have been very successful in establishing themselves in the educational technology market (Barwise & Watkins, 2018) leading to significant reliance on
integrated platforms for education. For example, recent data shows that more than half of the United States’ primary and secondary school students use Google’s education suite in the classroom (Singer, 2017). As noted by Arthur (1990), these integrated platforms create feedback mechanisms that may disadvantage more efficient technologies, reinforcing the incumbent choice through vendor lock-in and path dependence. Although a critical approach may not entail an outright rejection of technology, careful consideration is necessary to determine how technology can improve rather than simply maintain existing social relations (Dyer-Witherford, 1999).

Many of the software platforms used for educational content authoring—from Microsoft Office products to Google collaboration suites—support file formats that can be used for open interchange, but unique application features still rely on the use of proprietary file formats that are not readily interpreted by competitive products. Transformation of content from proprietary to open formats typically results in the loss of application-specific features and, in some cases, the corruption of content. Moreover, ongoing media concentration efforts have now blurred the line between content and creation and distribution (Noam, 2009). The prevalent tools used to create educational material, the file formats used to store created content, and the platforms used for “free” content distribution construct and reinforce a reliant relationship with commercial products that contradict the “four R’s” of OER as articulated by Wiley (2007b): reuse, redistribution, revision, and remixing [“retain” was later added as the fifth “R” (Wiley, (n.d.),]. It is therefore worth examining if a fully-open approach to OER authoring and distribution, using free and open-source software (FOSS) tools and open file formats, can foster the creation of effective and engaging open educational content.

While focusing on the role of proprietary tools and Big Five technology companies in OER production is arguably reductive, it does serve as a useful starting point for considering what a critical approach to technology in OER may look like. Selwyn and Facer (2013) urge critical researchers to question who benefits from educational technology, arguing “the political economy approach encourages an interest in the ways in which structures and processes of power are embedded within digital technology” (p. 13). Knox (2013b) has criticized the tendency of technological neutrality in OER literature, suggesting that such discourse masks the impact of technology. It has been suggested that the corporate power of the Big Five makes them more akin to governments with respect to the degree of control they have over society (Manjoo & Gross, 2017; Taplin, 2017). Given their dominance it is unsurprising that there are growing calls to reduce dependence on usage of the services provided by the Big Five (Akinyemi, 2019; Taplin, 2017), and there are recent, anecdotal experiments of individuals attempting to forgo any use of the Big Five’s technologies or services (Oberhaus, 2018; Hill, 2019). Drawing inspiration from these individuals’ attempts, and in an effort to advance a critical approach to technology in OER, we present a case study of examining the impact of removing Big Five technology from an OER project.

The Case Study

To examine the impact of disembedding the Big Five technology companies from OER work, we have chosen to focus on a case study of an OER project the authors are involved in creating: the University of Alberta’s Opening Up Copyright (OUC) instructional module series (University of Alberta, 2019). Each module is a six- to ten-minute YouTube video on a specific topic, supplemented by interactive pop-ups and quizzes in H5P’s free, open-source HTML5 format. The underlying files used to generate the MP4 videos uploaded to YouTube are created in PowerPoint, and Google Docs is used to prepare scripts for narration in the videos. Users can download the PowerPoint slides or transcripts in Google Docs to adapt the modules for their own institutions, but the raw audio of the narration is not made available. The content of the videos and underlying slides is a mix of original
text, quotations (most commonly from the Canadian Copyright Act and academic sources), and visual content that is often sourced from open content sites such as Wikimedia Commons, and some original images. The OUC project is also supported through a series of open Google Docs that allow anyone to provide input on the module series. Though all of the modules are made freely available under a Creative Commons Attribution 4.0 licence, their production relies on use of tools and platforms provided by Google and Microsoft, with more-limited and indirect connections to Apple and Amazon.

While single case studies are not uncommon in the OER literature (for example: van der Merwe, 2013; Oliver, 2015; Wang & Wang, 2017; Alpi, Cross, Raschke, & Sullivan, 2017), relying on a single case is not without limitations (George & Bennet, 2004; Yin, 2016). Although the proximity to the work by the authors is a source of bias (Flyvberg, 2004), such closeness facilitates a more intimate understanding of the technology and processes involved in the creation of the materials that is necessary for the analysis that follows. Case studies, such as this one, are particularly well-suited for the study of individual programs or initiatives (Leedy & Ormrod, 2005). Single case studies are not well suited for testing hypotheses but are useful for providing deep understanding and generating hypotheses to be tested in future work (Gerring, 2007). Case studies in education (both single and multiple) are particularly valuable for examining educational innovations (Merriam, 1988). Merriam (1998) further argues that the value of the case study lies in its focus on processes, context and meaning rather than outcomes. This approach is reflected by the analysis, which illuminates the depth of integration of Big Five technology rather than contrasting the quality of OER produced by proprietary versus open software. Yin (2016) specifically notes the value of single case studies in contexts where researchers have access to unique information sources. As the creators, we are well situated to provide insights into the decision making process around technology use for the development of OER. Our bias is hopefully tempered by a willingness to be critical about our use of this technology.

Since work on the OUC project has been ongoing since 2017 and there is existing material to work with, the emphasis here is on removing reliance on functionality and features provided by software and systems from the Big Five. Another approach, not examined in this case, would be to reboot the project with an emphasis on selecting collaboration, development, publishing and dissemination tools that do not rely on Microsoft, Google, Apple, Amazon, or Facebook platforms.

**Removing Microsoft**

As implicated by the description of Opening Up Copyright, two products are immediately implicated: the generation of slides using Microsoft’s PowerPoint, and the use of Google Docs for collaboration, transcripts and solicitation of external contributions. Removing PowerPoint is straightforward enough, since it can simply be replaced with OpenOffice Impress, but even the simple process of converting existing PowerPoints into Impress creates problems. While the majority of graphics and timing for slide effects do transfer, there is considerable loss in the overall quality of the slides, with some images rendering in a completely unrecognizable manner.

Use of OpenOffice Impress also presents a learning curve. At the project outset, the choice to use PowerPoint was guided by the fact that, despite being proprietary, it is a commonly-used and well-understood tool. Furthermore, the only means of exporting Impress’ rendered slides to video involves creating an Adobe Flash (.swf) file, a format that Adobe plans to phase out by 2020 (Adobe, 2017), and whose proprietary nature has been long-criticized for its poor accessibility and vendor-dependence (Meyer, 2008; Nielsen, 2000). The Impress Video Converter extension does remedy the .swf problem to a degree by allowing the creation of AVI files (Apache, 2019).
While PowerPoint has been a primary technology used in OUC, its removal is certainly not untenable. Creating modules in Impress would result in some degree of limitations around visual effects and impose a learning curve (both on the project team developing the modules and on adaptors) but is not an insurmountable problem on its own.

**Disembedding Google from the Module Production Process**

Removing Alphabet/Google’s impact on the project produces more intractable problems, especially since Google products are implicated heavily in both the production of the modules and in project communication. Google, more than any other software provider, is heavily incorporated into OUC because the University of Alberta has an institutional subscription and reliance on Google Apps Education Edition. Stemming from the University’s use of Google services, OUC has also relied on Google Drive and Google Docs for both internal coordination and facilitating external participation in the project. On the internal side, the Opening Up Copyright team uses Google Drive for document management and Google Docs for script creation. Replacements for Google Drive include open source document management providers such as LogicalDOC CE or OpenKM and web-based multiple-author systems like MediaWiki or GitHub. To facilitate synchronous editing of documents for internal collaboration Google Docs could be replaced with open source alternatives such as Etherpad or OnlyOffice.

While open alternatives could easily handle the requirement for text-based collaboration, Etherpad does not allow the inclusion of images in collaborative documents, a feature sometimes used in Google Docs by the project team. OnlyOffice presents a considerably more complicated option. While OnlyOffice provides features comparable to Google Docs, without the image limitation of Etherpad, it presents another challenge in relation to eliminating the Big Five from OER production - the web based version relies on Amazon Web Services (Ascensio System SIA, 2019a). A downloadable version of OnlyOffice exists and collaboration on the OnlyOffice cloud requires a paid subscription; however, educational institutions may qualify for a free cloud based version. Still, this comes with its own limitations including the requirement of a website banner and promotion of OnlyOffice on social media networks (Ascensio System SIA, 2019b). Given OUC has not used social media (whose tools are also dominated by the Big Five), it isn’t clear whether OnlyOffice is a viable alternative. Thus, to effectively remove Google Docs and Drive as a means for collaboration involves either forgoing functionality or jumping through several additional hoops.

A much more significant barrier to Google’s replacement can be seen in OUC’s current use of YouTube for video hosting, and as a foundation for adding interactive features to videos. YouTube allows simple and direct mechanisms for integrating timed text pop-ups, interactive links, and quiz questions built on the open H5P architecture. The use of H5P-based features contributes to the project’s ability to foster engagement, so ideally we would aim to remove reliance on YouTube without compromising our ability to benefit from the H5P platform. Currently, H5P can only support externally-hosted videos when a direct video link is provided. YouTube provides this feature natively, but alternative platforms such as Vimeo require a paid account to accomplish the same task. The easiest alternative to YouTube would be local hosting of video files, but this introduces significant challenges for considerations of file storage. Given that the project aims to create upwards of 50 video modules, with the file sizes for some videos approaching 1GB, the shift to locally-stored video files could result in significantly-increased project costs for storage and network bandwidth.

The other added benefit of YouTube’s use for the project is its facilitation of content discovery. Even with the introduction of additional techniques for search engine optimization, locally-hosted
video files and alternate video hosting platforms would result in decreased discoverability of project content.

OUC also uses Google’s advanced search function to locate open content. The new Creative Commons search engine (currently only capable of image searches) holds promise, and the project could rely on other open repositories such as Wikimedia Commons or Pixabay, but the loss of Google as a general-purpose content search tool presents the project with a slight handicap.

Dislodging Google from Project Communication

Google’s influence on the OUC project eclipses the production process because it also significantly impacts the project’s internal and external communication. OUC relies on Gmail based communication for collaboration, which stems from the University of Alberta’s institutional use of the Google suite of services. Although independent mail providers such as Tutanota and ProtonMail are viable alternatives, switching emails would require all the creators to take on secondary email address and do all project communication outside of their primary, Gmail based, university email addresses. As with the removal of PowerPoint, such an approach is not ideal, but nor is it infeasible.

A core value of OUC’s current incarnation is external collaboration and feedback from colleagues and peers. This is currently done by providing public access to a series of “Community Pages” based in Google Docs. Each instructional module has its own Community Page that encourages contributions to the project by providing feedback. The project solicits a wide range of input from the broader community including story ideas for scripts, creating learning objectives or test questions, or highlighting useful resources related to the module content. As with internal collaboration these could be replaced with open alternatives; however, the same limitations apply. The most reasonable alternative for this functionality might be to forego simultaneous collaboration software all together, and just direct contributors to an online forum.

In summary, while some of the dependence on Google is reflective of an institutional decision to rely on Google products, a complete disembedding of the Google platform requires new approaches for many facets of the project. Barriers to Google’s removal are complex enough that a “reboot” approach, relying on an entirely-different set of open source collaboration platforms, may be less problematic.

Untangling Apple, Amazon and Facebook from Opening Up Copyright

Although the project is most immediately impacted by Google and Microsoft, removing the Big Five also involves some consideration of the role of Apple, Amazon and Facebook. The first of these warrants more discussion than the other two, but there are implications for all three.

Apple’s presence in the project is most visible with the use of MacBook hardware and MacOS software tools. The most notable aspect of this entanglement is in post-production, which employs built-in MacOS tools to transform PowerPoint slides into high-quality video files. Though neither the computers nor the software is essential to OUC workflow and could be displaced, removing Apple introduces new challenges if one also wants to exclude reliance on Microsoft software. Simply put, to avoid both Apple and Microsoft, OUC would be compelled to use Linux-based operating systems on generic computing hardware. Although this could be done, it would impose switching costs by, minimally, forcing most members of the project team to familiarize themselves with a new operating system. On the upside the decision to use Linux-based computers for content creation would not create any new dependencies for students, or for downstream adaptation of content from the project.
At first glance, avoiding Amazon and Facebook might seem relatively straight forward. As an OER project, Amazon’s large online retail presence is not directly implicated (though in the spirit of full disclosure, at the outset of OUC a microphone for recording narration was purchased through Amazon), and Facebook has not been used as a social media platform to promote the project. However, truly cutting out Amazon is more challenging than first envisioned because it means cutting out all websites that use their AWS (Amazon Web Services) infrastructure. Eliminating sites that rely on AWS involves not using about 30% of all sites on the Internet (Digg, 2018). With the inclusion of Google’s and Microsoft’s cloud services, the total grows to 54% (Preimesberger, 2018). As with removing Google as a search tool, cutting off access to any sites hosted on AWS or Microsoft Azure architecture creates barriers: Flickr, for example, has recently moved all of their services to the AWS platform. A committed and thorough removal of Amazon’s tools and services, then, would handicap the project by foreclosing the use of significant open content providers. Furthermore, eliminating sites supported by AWS (and similar cloud services from Microsoft and Google) would introduce a new painstaking step of determining the cloud service provider for any website connected to the project. This tedious analysis could be overcome by predetermining list of open content providers that don’t rely on Big Five web services and relying on content located at those sites.

The Entangled Nature of Big Five Technology and Internet Services

The implications of removing AWS (or other Big Five) hosted sites raises one final consideration related to the more-hidden and ubiquitous ways these platforms are embedded in online interactions. If the goal is to truly remove any and all presence of Big Five technology, then every aspect of a website’s technology—from email hosting providers and content delivery networks, to JavaScript and code libraries, to the locations of freely-available online fonts and graphics used in website design—must also be considered. Sites such as Built With (https://builtwith.com) can provide this information with a reasonable level of detail, and they reveal just how embedded the Big Five technology companies are. For example, according to Built With (2019a, 2019b), Wikimedia relies on Google Apps for Business for email hosting and makes use of the Apple Mobile Web Clips Icon, and the Creative Commons site uses an array of Google products including Google Analytics, Google Website Optimizer, and Google Font API.

The deep presence of the Big Five presents a two-fold problem for the OUC project if any use of the Big Five were to be avoided. In terms of developing the modules, it would require the project to effectively create all of its own images, avoiding platforms and tools provided by the Big Five; it would also likely circumscribe the ability of the project to make use of existing, effective, openly licensed imagery. Dissemination would be hindered by the requirement that OUC’s output and distribution should eschew any hosting provider that relies on the Big Five’s cloud-based service platforms. Most importantly, however, avoidance of the Big Five would undermine the spirit of Opening Up Copyright. Rather than using and combining existing open content to make more effective OER, a wholesale avoidance of the influence of Google, Amazon, Apple, Microsoft, and Facebook would introduce an ideological rejection of all content in any way touched by the Big Five, suffocating the larger objective of creating and providing effective, accessible and reusable educational content on Canadian copyright.

Discussion and Conclusion

As indicated by the above conceptual experiment, removing the Big Five from OER production and distribution produces a series of challenges. Many of these challenges are surmountable through
simple changes, but others present more significant degrees of complication. In the aggregate, taking all the steps to untangle the Big Five from an existing OER project results in a series of impractical decisions and extreme switching costs that push up against the limits of reasonableness. A newly-conceived OER project, aiming to avoid the use of Big Five technologies from the outset, would not fare much better. A series of smaller decisions, such as using Open Office and OnlyOffice, could effectively remove the majority of the Big Five’s presence in an online OER project. However, an absolute rejection of the Big Five (including any web-based technology relying on their cloud services frameworks) would significantly stifle the project. Rejecting any website that makes even incidental use of Big Five technology represents a theoretical breaking point at which complete removal seems unfeasible.

Some of the challenges outlined in this case study may be more specific to the nature of OUC’s outputs. Creating online instructional videos is different than creating an open textbook, and accordingly it is possible that other OER projects would face fewer barriers than the project studied here. In much the same way Oberhaus (2018) and Hill (2019) found that it is possible but highly challenging to remove the Big Five from one’s personal life, disentangling Apple, Amazon, Alphabet/Google, Facebook and Microsoft completely from an OER project can be done: it is just painful. Recognizing that online instructional videos are only one form of OER, we suggest that future work be done to examine whether Big Five technology is more or less prominent in specific types of learning materials and OER production processes.

Given the complications of disembedding the Big Five from OER work, it is worth questioning whether or not such an approach is even useful. From a purely pragmatic perspective, it is not. While proponents of free and open source software have marshalled both practical and moral arguments against proprietary software, the only argument for complete removal of the Big Five from OER work appears to be a moral argument of what ought to be.

The revelation of the case example is that OER creators are responsible for critically reflecting on their use of technology, and its possible impact on education, rather than ideologically reject ‘big technology.’ OER creators should be concerned about the potential exploitation of free labour and the role such resources play in furthering academic neocolonialism, but arguably the removing the Big Five does not, in itself, meaningfully advance a critical approach to OER. A critical approach to OER must explicate the social relations and power imbalances embedded in OER design, development, dissemination, and engagement and not only make content available but do so in a manner that is easily adaptable by a variety of users. With specific reference to the project in question, as of the time of writing, the authors are aware of multiple institutions linking to the instructional modules, thus demonstrating the usefulness of the materials to other institutions; however, there is no evidence of the modules being adapted by other institutions. The lack of adaptations of the instructional modules likely stems from the challenges of altering video, including the time (and thus cost) of re-recording narration, even as the underlying materials to create the videos (the PowerPoint slides and transcripts) are made openly available.

Given that simply avoiding Big Five technology or attempting to use only open source software, at whatever cost to reusability and accessibility, does little to further a critical approach to OER, what alternatives exist? In addition to further exploration and scholarship on issues of precarity, neocolonialism and neoliberalism in OER, scholars could return to the rich conceptual tool bag provided by a range of critical perspectives (not only Marxian and more traditional schools of critical theory but also feminist, Indigenous and other approaches). To advance a critical approach to OER future work could explore the role of OER in alienation, reification, and counter hegemonic struggle, among others. While sufficient pragmatic arguments exist for tolerating Microsoft, Google, Amazon and others in the aim of advancing open education, OER creators who choose to use such
technologies must accept that their usage contributes to the creation and further embeddedness of these technological giants’ platforms.

Acknowledgement
The authors wish to acknowledge the University of Alberta’s Centre for Teaching and Learning, which funded this research through a Teaching and Learning Enhancement Fund grant.

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Instructional Designers and Open Education Practices: Negotiating the Gap Between Intentional and Operational Agency

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Abstract

In their role as support to faculty in the course development process, Instructional Designers (IDs) can play an important part in alleviating some of the well-known barriers of open education practices (OEP): faculty time, institutional or faculty resistance to change, and institutional support for faculty (Annand & Jensen, 2017; Barker et al., 2018; Jhangiani et al., 2016). This study examines how IDs negotiate OEP in the course development process or in the process of working with faculty. The findings suggest that IDs are negotiating institutional constraints while attempting to be OEP advocates in their work. To use Campbell, Schwier and Kenny’s (2009) framing of intentional and operational agency, the IDs in this study described a high level of intentional agency, but their operational agency could be enhanced with greater clarity of expectations with respect to their role, resources and capacity to engage with OEP, clarity of directives and support from senior leadership, as well as a broader awareness of the moral and practical affordances of OEP within their institutions.

Keywords: Open education practices, instructional designers, open education resources, higher education, agency

Introduction

Instructional Designers (IDs) –alternatively referred to as Learning Designers, Instructional Developers, among others– occupy a unique position in higher education as a support to faculty in the course development process. As an awareness of open education resources (OER) grows in higher education in Canada and the US, and a body of research pointing to the benefits, barriers and challenges in implementing OER more broadly emerges, it is important to shed the light on the role of instructional designers in relation to open education practices (OEP). In their role as support to faculty in the course development (and often delivery) process, IDs can play an important part in alleviating some of the well-known barriers of OEP: faculty time required to find appropriate OER to adopt or remix, resistance to change, and institutional support (Annand & Jensen, 2017; Barker, Jeffery, Jhangiani, & Veletsianos, 2018; Jhangiani et al., 2016). Yet little is known about how IDs engage with OEP in the course development process and how they see their role in relation to OEP. Therefore, the purpose of this study was to explore how instructional designers negotiate OEP in the course development process or in working with faculty more broadly. This article focusses on some of the key findings from the first phase of a two-part study.

The context for this study is British Columbia (BC), Canada, a province that has a well-established government-supported OER initiative that began in 2003 and subsequently became an open textbook initiative in 2015. The 25 public post-secondary institutions in BC are supported by BCcampus, a provincial government agency which administers OER grants, provide a variety of professional development and event support, as well as as well as supporting open textbook publishing through a Pressbooks publishing platform. However, while there is good momentum in the province with faculty, librarians, and student advocates, less is known about how IDs and teaching and learning centres are engaging with OEP.
Literature Review

Defining OEP

OEP have been 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. OEP address the whole OER governance community: policy makers, managers/administrators of organisations, educational professionals and learners (Andrade et al., 2011, p. 12).

In a review of the theoretical and empirical research on OEP Cronin and MacLaren (2018) explain that a more expansive view of OEP acknowledges that OEP may in fact “emerge independently of OER and may in fact lead to OER use – rather than the reverse being the case” (p.137). Part of the conceptual confusion around OEP seems to lie in the fact that OEP—whose roots lie in open education more broadly—can also encompass open scholarship, open teaching, open pedagogy, and other OEP related concepts (p. 133). This is an important acknowledgement in considering how faculty and IDs within higher education institutions come to understand what might constitute OEP in the context of their work.

The Role of Instructional Designers

There is general agreement that the role of IDs in higher education in general is complex and not always well understood by peers in the institution (Ren, 2019). This has led to some studies that dive more deeply into the role of IDs in their work in their contexts. For example, Kumar and Ritzhaupt (2017) state that the role of the ID is complex and varied, ranging from course development, faculty development, project management, research and evaluation as well as inherent technical skills and knowledge required to undertake those activities. Schwier and Wilson (2010) point to the unconventional roles and skills of IDs that go beyond an instructional design education. Dicks and Ives (2008) delve into the negotiation process between subject matter experts, designers, students in the ID process, while Campbell, Schwier and Kenny (2009) adopt a sociocultural lens to examine the role of IDs as change agents and conclude that IDs exhibit multiple dimensions of agency—interpersonal, professional, societal and institutional. More recently, Richardson et al. (2018) point to the lack of understanding of the contributions that IDs can make, noting resistance from faculty to work with IDs, and the perception by faculty of an unbundling or devaluation of the faculty role. Therefore, despite the observation that instructional designers are well positioned to be key leaders in the transformation of higher education (McGriff, 2001), and possess a valuable set of skills and expertise, they may face challenges in their higher education contexts to leverage this expertise.

Instructional Designers and OEP

The topic of OEP and IDs specifically is limited in research and can be extended more broadly to include educators and faculty. In one study, Jung and Hong (2016) examined faculty members’ instructional priorities for adopting OER and found that effectiveness, efficiency, appeal and extension were the most important factors. Kaat rackedoski, Littlejohn and Hood (2017), in examining the tensions experienced by educators as they adopt OEP, note that “previous studies on the use of OER suggest that while educators are slowly adopting Open Educational Practice, there remains limited understanding of breadth of teaching and learning practice that OER enable.” (p. 600). Paskevicius
(2017) provides a model of OEP aligned with constructivist course design and demonstrates how educators can extend their practices with OEP. More recently, Ren (2019) considers that “the success of the OER movement cannot be achieved through relying on individual efforts. There is a need to build partnerships and collaborative communities to promote creating and adopting open educational materials in higher education” (p. 15). For Ren (2019) this includes more awareness by faculty of IDs and more faculty collaboration with IDs. Therefore, in expanding OEP research to include educators more broadly, it is important to recognize the tensions with respect to the various roles.

ID work requires that IDs engage in collaborative relationships across the institution and this boundary work (Akkerman & Bakker, 2011) involving faculty, design teams, and others may surface tensions and contradictions. For example, Richardson et al (2018) examined collaborative relationships between instructional designers and faculty and identified the importance of support from administrators and faculty buy-in as factors contributing to successful collaborative relationships. These themes are echoed in Ren (2019) who underlines the expertise that IDs can bring to these collaborative relationships: “Although IDs have expertise in curriculum development and instructional innovation, they often are ignored or underestimated in producing OER-based courses. It is instrumental to think about what IDs can do to promote OER creation and adoption in higher education” (p. 16). Interestingly, collaborative leadership is also identified as a success factor in institutional transformation research (Kezar & Eckel, 2002) and institutional blended learning initiatives (Garrison & Vaughan, 2013), suggesting that there may be some insights that can be drawn from research that examines OEP as a process of institutional change or transformation. The collective body of research on instructional designer roles and practices suggests that the introduction of OEP to their work likely presents both challenges and opportunities that require negotiation within their contexts (Cronin, 2017).

**Conceptual Framework**

In line with Cronin (2017) this study adopts a sociocultural orientation that views open education practices as situated and negotiated within specific contexts and conditions, which include actors, rules, facilitators and constraints. With respect to OEP, ID work constitutes boundary crossing, defined by Akkerman and Baker (2011) as “sociocultural differences leading to discontinuities in action and interaction” (p.152), involving faculty, design teams that include instructional designers and others. In considering how instructional designers negotiate OEP in their work in the design or working with faculty process, this study leans on Campbell et al’s (2009) view of instructional designers as agents of social change who may hold certain values and identities and chose to act on and embody them. Importantly, the authors distinguish two kinds of agency –intentional and operational– which may surface different tensions in ID work, leading to discontinuities of action. Campbell et al. (2009) define these two kinds of agency as follows:

> By intentional, we refer to those dimensions of instructional design that are related to the intentions, principles or values associated with actions, including personal judgments about what is significant, preferential, moral or ethical. By contrast, operational dimensions include the practical implications or the expression of particular intentions, principles or values. In other words, intentional dimensions deal with what we feel we should do, whereas operational dimensions deal with concrete actions or outcomes (p.16).

Since OEP are a relatively new academic development or initiative, examining how IDs engage with OEP from the perspective of intentional and operational agency may provide some explanatory power to the tensions and negotiations they face in this work.
Research Design

In order to understand how IDs negotiate OEP in their work, this study is framed around the following research questions:

1. How do instructional designers see their role in relation to OEP?
2. How do instructional designers support faculty in relation to OEP?
3. How could instructional designers be better supported in relation to OEP?

The study adopted a qualitative research design using interviews and thematic analysis (Maxwell, 2012). It involved convenience sampling of two samples who met the following criteria: First, a sample of public sector higher education IDs/learning designers who support faculty in the course design and development process working at a BC public post-secondary, regardless of whether they work in a centre or are decentralized; second, a sample of Directors of teaching and learning centres that employ instructional designers. Only IDs who were engaged in OEP in some way were interviewed. Similarly, Directors whose teaching and learning centres were involved in OEP at their institution were interviewed in order to gain a better understanding of the role of IDs who work within and are supported by teaching and learning centres. Research participants were assured that they and their institutions would not be identifiable, which is especially difficult in a small province such as BC. Therefore, the description of the sample is limited to the details provided in Table 1.

Table 1: Interview Sample - Institutional Type and Participants (IDs and Directors)

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>ID Identifier</th>
<th>Director Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Large University</td>
<td>ID 1</td>
<td>D 1</td>
</tr>
<tr>
<td>Medium University</td>
<td></td>
<td>D 3</td>
</tr>
<tr>
<td>Small University A</td>
<td>ID 6</td>
<td></td>
</tr>
<tr>
<td>Small University B</td>
<td>ID 7</td>
<td>D 2</td>
</tr>
<tr>
<td>Large College</td>
<td>ID 2</td>
<td>D 4</td>
</tr>
<tr>
<td></td>
<td>ID 5</td>
<td></td>
</tr>
<tr>
<td>Medium College</td>
<td>ID 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ID 4</td>
<td></td>
</tr>
<tr>
<td>Small College</td>
<td>ID 8</td>
<td></td>
</tr>
</tbody>
</table>

*Size is a measurement of number of student full-time enrollments (FTE).
For Universities: Large > 30k FTE; Medium = 10k-30k FTE; Small < 10k FTE.
For Colleges: Large > 10k FTE; Medium = 5k-10k FTE; Small < 5k FTE.

A total of eight IDs and four Directors across seven BC institutions were interviewed individually by the author via recorded web-conferencing sessions. Semi-structured interviews (Appendix A) lasted between 30 and 60 minutes and were recorded and transcribed. Rather than provide a concrete definition of OEP, participants were presented with examples of OEP that might be engaged with, thus providing a framing that considered multiple entry points, recognizing that “adoption of OEP is often uneven and does not always begin with the use of OER” (Cronin & MacLaren, 2018, p. 137). For the purposes of this study, OEP included:

- Designing with an “open first” mindset
- Considering, adapting or adopting open textbooks, courses, resources

• Helping faculty or programs consider open textbooks for adoption, adaption or creation
• Helping faculty find open education resources (OER) to use in their courses
• Designing or helping faculty innovate or incorporate open pedagogies in their courses
• Helping faculty or designing with consideration open technologies or technologies that facilitate open practices

Analysis of interview transcripts was both deductive and inductive (Miles, Huberman, & Saldaña, 2014). The author used MaxQDA for data analysis, which involved first cycle coding and second cycle coding (Sandaña, 2009). First cycle coding used a combination of holistic and structural coding methods. IDs were treated as a separate set and were coded separately from Directors. Second cycle coding for Saldaña (2009) is “advanced ways of reorganizing and analyzing data coded through First Cycle methods” (p. 149). This step involved collapsing and rearranging first cycle codes followed by pattern coding. This resulted in a total of 430 interview segments coded across 15 primary codes and 22 subcodes. Subcodes were analyzed for additional themes. The major themes are included in the results and discussion.

Results and Discussion

Consistent with Cronin (2017), when working with OEP in the course development or working with faculty process, IDs are engaged in a negotiation that is shaped by the institutional context, the role of the ID, their level of agency and influence, and clarity of expectations and directives.

IDs as OEP Advocates

The IDs in our study described themselves as advocates who leverage the spaces within their role wherever possible. The advocate labels they used to describe themselves included coach, advocate, hands-on guide, practical tour guide, pushy advocate, and suggester of open. The Directors for the most part shared this view of the advocate role of the IDs in relation to OEP. IDs engage with OEP because they are committed to the moral value of open, the potential to improve teaching and learning, and/or the practical affordances that it provides.

ID 5, Large College: … it <open> doesn’t have to be something so moral, right? It could be entirely practical. Even when instructors contribute their whatever to the community, it’s also entirely practical. It’s good for them, right? They gain value. Maybe not necessarily monetary value but they gain identity values from doing that.

ID 6, Small University A: I have all these other institutional needs. I’m the advocate because I feel ethically connected to it. It’s not necessarily that I get any kind of direction or indication from senior leadership that we should be doing it.

As Campbell et al. (2009) stated, IDs are “principled actors whose practices embody core values” (p. 16). However, while IDs are highly committed to engaging with OEP in their work, they often do this with limited positional influence and authority, a point that Campbell et al (2009) also note in their study: “instructional designers feel responsibility for more things than they have authority to influence, and that they regularly find themselves in positions that require them to act beyond their authority, or in a vacuum of authority” (p. 16). Therefore, at times IDs struggle to engage with OEP due to their limited agency:

ID 6, Small University A: There are some, I’d say 10%, that come from institutions that have people with titles with “instructional designer”, and that’s what they’ll call us. Everybody else sees us as technical help. They need to know how to do something in the LMS, something with clickers or all the rest of it. They don’t see us as pedagogues, they see us as technicians.
In addition, in smaller institutions, or in situations where the ID is not part of a central or well supported teaching and learning centre, they may be one of a few, if not the only institutional champion. This is somewhat surprising given the well-publicized success of the BC open textbook initiative that has seen open textbooks adopted in all 25 institutions and suggests that there may be more capacity building required.

**Leveraging the design process and seeking opportunities for collaborative relationships**

The IDs in this study are resourceful in leveraging opportunities to engage with OEP despite constraints. These included hiring subject matter experts who are willing to engage in OEP, attempting to incorporate OEP in the analysis and design phases of course development work, as well as inserting information about OEP in their strategic communications and informal and formal conversations with faculty and via workshops. Directors underlined that OEP work is largely faculty initiated and complexities around intellectual property influence the degree to which OEP work is taken up by centres and by faculty.

Unsurprisingly, given the well documented knowledge and advocacy role that academic librarians bring to the open movement (Okamoto, 2013), both Directors and IDs mentioned the importance of librarians as allies to generate momentum where possible. IDs are also participating in institutional Open Working Groups, and take opportunities provided through participation in committees or in the course development process to educate others in the value of OER and OEP.

**Negotiating Resources, Time and Space in their Roles**

None of the IDs in this study feel like they have sufficient time and space in their roles to work with OEP to the extent that they feel is necessary, with IDs in smaller or more decentralized teaching and learning centres having the least amount of time for OEP. Both Directors and IDs recognize that they are juggling competing priorities and limited resources, as well as unclear and unstated guidelines as to the extent that OEP should be part of their official job role.

ID 1, Large University: *It’s mainly workload... I think I’ve got 20 courses on my plate right now, just as one individual, and I’m trying to weave in constructive alignment outcomes, all of that sort of stuff. And it’s just I don’t have time for it. I wish I did.*

ID 3, Medium College: *I wouldn’t say I’m out front championing it because it’s not officially recognized in my job description. I have to be mindful of that, and I think if it was officially recognized, if my job description said ... It would need me to put a sticker on it, 25 percent of me ... If it said, “Responsible for raising awareness and advocating for open education practices or open education resource creation, or support, whatever.” I think that would be a lot easier, but it’s not.*

Director 4, Large College: *I think resources … everyone who’s doing it, is doing it on the side of the desk.*

ID 8, Small College: *It’s not in my job description. It wouldn’t be ... It’s not a mandate of the college or anything, but when you start to find the people who are the champions of things, that’s where you get the little conversations to make things happen. Yeah, it’s not really part of my role, at all.*

There is also some evidence to suggest that the level of agency an ID has to engage with OEP in their work is a condition of level or stage of maturity of their institution (or even their teaching and learning centre) with open. For example, an ID at an institution with a well-established open learning division described a course development workflow that facilitated—and to some degree normalized—OEP as part of the expectations placed on the faculty members that they work with. This institution also had the largest open education working group with approximately 40 members from across the
institution. Unsurprisingly, the proportion of time spent engaging with OEP, and the number of IDs in the centre actively doing OEP was much higher than for IDs working in institutions where open was less established. However, since stage of institutional maturity with OEP was not a focus of this study, this would require further investigation.

**Importance of Leadership Support**

In his study, Paskevicius (2017) noted that “both leadership and professional development are needed to support a shift to OEP” (p. 134). But where should this leadership come from? One of the more surprising findings that emerged from both the ID and the Director interviews was the importance of senior leadership in advancing and supporting open efforts. While recognizing the importance of open being a grassroots movement, and the importance of faculty leading faculty, all of the interviewees discussed challenges in their work they felt could be alleviated with a clearer, well communicated commitment and leadership from senior leaders.

ID 2, Large College: *I feel that, at the higher level, the leadership level, there’s not a lot of uptake about open, and I don’t sense that there’s a lot of openness for them to learn about open.*

ID 6, Small University A: *There may be teaching centers, and other institutions have a lot more representation, perhaps, at their administration. If you look at XYZ University, I think they actually have an AVP teaching and learning, at a provost level or associate provost level. They’re sitting around those president’s council meetings and stuff, and they’re that voice. We don’t have that voice at our institution.*

ID 8, Small College: *As we say, higher up, there needs to be some ... They need to feel that it’s important.*

ID 4, Medium College: *I think we need champions at the top to make things happen, because I think currently we have this committee, open <ABC institution> committee. And we have a sub-working group. But we’re all doing this off the side of our desk.*

Director 3, Medium University: *I would say the support hasn’t been there from the VPA’s office. That was a request thing. I think they actually have an AVP teaching and learning, at a provost level or associate provost level. They’re sitting around those president’s council meetings and stuff, and they’re that voice. We don’t have that voice at our institution.*

Director 1, Large University: *There’s a lot of people who really believe in sharing openly. However, and the only reason why I’m ‘however-ing’, is because there has been a request to start thinking about it more as a ... this is the way we do things, and if you don’t want to open things up, there needs to be some reason for that. There needs to be some justification. So we haven’t gotten there yet, but there has been a request from some folks in <the Centre> saying, why don’t we make this more of a proactive ... a policy that we generally are open.*

Director 4, Large College: *...right now we have a good grassroots movement of open with some token dollars thrown through support of, here write a book and we’ll pay you $5000. But we really don’t have a center of open, we don’t have a team that comes together. We have an ad hoc grassroots...*
committee that comes together several times here. But it’s more just to keep the lights on as opposed to something that’s really a driving force.

In the meantime, we can turn to Kezar (2012) who provides some insights on the convergence of grassroots and top down leadership around institutional change initiatives through committees or task forces, or to institutional case studies on blended learning (Taylor & Newton, 2013; Lim & Wang, 2017) where successful blended learning initiatives incorporated both top down and bottom up approaches.

**Professional Development, Awareness and Capacity Building**

Research on institutional transformation (Kezar, 2012; Kezar & Eckel, 2002), blended learning initiatives (Lim & Wang, 2017), and OEP in curriculum development (Armellini & Nie, 2013) underline the importance of professional development at all levels of the institution as both an awareness and capacity building effort when undertaking change initiatives. In this study both Directors and IDs felt that their efforts could be strengthened with more awareness and professional development.

ID 4, Medium College: … the opportunity to talk about open, sometimes people will be like, “Oh, I don’t want to use an open education. I don’t want to use an open textbook.” And that’s their go-to. And I have to say, “Well, that’s actually not only what open is, and let me help you kind of explore more of that.” So, I think we’re there. I think we need lots of professional development. And professional development for me too, because I’m pretty new to this. And so, I think just building capacity with myself and with our committee, and then with the new curriculum consultants that we have. That would help.

Director 3, Medium University: Awareness is one of the biggest things… this is one of those conversations where I see right in front of me a lot of faculty members just go blank. We’ve lost them in the conversation.

Director 4, Large College: …we definitely could do a better job on the <professional development> side of things, helping, providing opportunities for faculty, not just the writing of the textbooks, but even understanding the pedagogy side of it. Creating a course, teaching with an open pedagogy mindset…right now I think, we’ve got maybe 5 or 10% of our instructors <who> really understand and embrace it.

IDs and Centres are also engaging with OEP through providing awareness and capacity building via workshops and events. There were mixed perceptions as to how effective these were in achieving the goal of seeing more people aware of and engaged with OEP at the institution. It’s also important to note that within centres themselves, including with IDs and Directors in the centres, there were varying levels of understanding and involvement with OEP on an individual basis.

ID 5, Large College: We have <number removed> instructional designers, and out of all of us, I’d say that maybe <half> keep it front of mind in the work that they’re doing with faculty, but I’m not too sure about the other ones.

In other words, the advocacy role of IDs is a choice, not a directive, and centres aren’t at the point where OEP are threaded throughout their strategy and operations. In Campbell et al’s framing (2009), there is a disconnect between the intentional agency of the IDs and their operational agency, constituting a zone of moral dissonance (p. 17). In this regard, it’s worth reflecting on Conole and Ehlers (2010) who state: “the dissemination, implementation and evolution of open educational practices is influenced by actions, rules and regulations on all levels of stakeholder involvement” (p. 8). While centres may have varying abilities to help influence the culture of the institution, there is a risk to relying on the efforts of a few advocates, and professional development and support “is central
to the development of a culture where open practices are prominent” (Armellini & Nie, 2013, p. 18). Armellini and Nie (2013) provide some key topics to be covered that may be worth considering in developing awareness and professional development for OEP.

**Impact and Institutional Change**

Despite challenges in engaging with and expanding OEP at their institutions, the participants in this study are able to speak to the impacts their efforts have had, however small. Institutional open working groups are seen as a productive way to bring people together to support each other around open, and while they vary in size they serve an important role in the OER grants process, in fostering supportive relationships, and in targeting their open efforts. Institutional OER grants are creating momentum and attracting more applicants every year, and in some cases open is entering the conversation in places where it may not have been previously discussed.

Director 4, Large College: *I really believe, and I don’t think I’m being naive here, but I think we’re getting some momentum now...there’s people that are talking about open or saying ‘hey, you know, how do I get a grant? I want to write something’.*

Assigning a role of an open coordinator is identified as a need at two of the seven institutions in this study. And since the impact of open textbooks on student savings is being closely monitored by BCcampus and is well communicated to the senior leaders, some of the participants pointed to the positive impact this had in creating space for OEP work. It’s worth noting that measuring and monitoring impact is not an established practice at the institutions interviewed, and it was suggested that a sector wide working group that looks at how to measure the impacts of OEP would be helpful.

**Limitations and Recommendations**

This is a small study across a limited number of institutions in a particular geographic area of British Columbia. It does not shed light on institutions who are not doing open or who don’t have neither teaching and learning centres nor instructional designers, or where librarians are the key people working with faculty in the course design process. Importantly, it does not capture IDs who aren’t doing OEP, or who might be resisting OEP and reasons for it. This is undoubtedly an important area for further research.

Despite these limitations, this study captures some important findings on the efforts, challenges, and impact of IDs in the BC post-secondary sector who are engaging with OEP with whatever capacity they have and the ways in which they could be better supported to do this work.

In light of the findings, there are several recommendations for institutions who would like to advance their efforts in OEP:

1. Including OEP as part of the job description and duties of an ID may help to ensure there are resources and an allocation of time to support them in their work.
2. Establishing OEP as integral part of strategy and operations of a teaching and learning centre may help to advance open efforts.
3. Targeting professional development at all levels of the institution to further awareness of what open is and how it aligns with institutional goals may help to build capacity.
4. Importantly, there is a need for senior leadership to be clear on both the ethical and practical affordances of open and to understand the impact that their direction and support could have on advancing institutional OEP efforts.
Conclusion

Cronin (2017) notes that “the use of OEP by educators is complex, personal, and contextual; it is also continually negotiated” (p. 15). This study demonstrates that IDs are negotiating institutional constraints while attempting to be important OEP advocates in their work. To use Campbell et al’s framing (2009), there is evidence to suggest a lag between the intentional agency of IDs working with OEP and their operational agency. The IDs in this study have a high level of intentional agency, as evidenced in how they described their role in relation to OEP and through their efforts to leverage whatever small spaces they had in their design work and work with faculty. However, they also described the limits of their operational agency, which included lack of clarity of expectations around their official job title in relation to OEP, workload capacity and resources to engage with OEP, lack of clarity of directives and support from senior leadership, as well as a broader lack of awareness of the moral and practical affordances of OEP within their institutions. If OEP are a desired mechanism for academic innovation and transformation of teaching and learning, it may be timely for institutions to consider the role that IDs can take in diffusing OEP through their work with faculty while attending to some of the more operational barriers that impede this work.

Acknowledgements

I am grateful for the funding and support of BCcampus during all stages of this study.

References


Appendix A - Interview Questions: Instructional Designers and Directors

Semi structured interview questions for Instructional Designers

1. What do OEP consist of for you?
2. Could you briefly describe what your role is in working with faculty in the course development process?
3. To what extent is OEP part of your work as an ID/learning designer?
4. Could you walk me through the course development process (or the working-with-faculty process), what does this look like? At what points in this process are you working with OEP, or do you think about incorporating OEP?
5. To what extent is open/OEP part of the larger discourse at your institution? Your teaching and learning centre?
6. How do you see OEP as part of your role as an ID at your institution?
7. How could you be better supported to work with OEP at your institution? If professional development is needed, what kind of PD?
8. Is there any OEP work happening at your institution that you would you would like the broader community to know about?

Semi-structured interview questions for Directors of T & L Centres

1. How important are OEP in the context of the work that is done in your centre? What kinds of OEP are important?
2. What is driving the importance? If not important, what are the more critical priorities your centre/institution has?
3. In your centre, in your opinion what is the role of IDs in relation to OEP?
4. How are OEP situated in the workflow of your centre?
5. What would be needed for OEP to be a bigger part of the work in the centre?
6. What kind of impact have OEP had at your institution on teaching and learning?
7. Is there any OEP work that you are proud of that you would like the broader community to know about?
PRAXIS: Open Educational Practices and Open Science to face the challenges of critical Educational Action Research

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Abstract

The paper presents the findings from PRAXIS, an educational action research project developed within academic professional learning communities (PLC) in the context of public higher education in Uruguay. As a strategy towards fostering teaching innovation, we explored the potential and benefits of academic PLC for the reflection and transformation of teaching practices, and the integration of digital technologies in a meaningful way into teaching. The approach was based on Open Science (OS) and Open Educational Practices (OEP) as foundational frameworks to face the challenges of critical Educational Action Research. Key findings of the project emphasise the impact of PRAXIS framework combining OEP, OS, and academic PLC, as well as collaborative and participatory technologies for the transformation of teaching and educational research practices.

Keywords: Educational action research (EAR), professional learning communities (PLC), teacher training, digital technologies (DT), open educational practices (OEP), open science (OS).

Introduction

The paper presents the findings from PRAXIS, an action research project developed within academic professional learning communities (PLC) (Owen, 2014) in the context of public higher education in Uruguay. As a strategy towards fostering teaching innovation, we explored the potential and benefits of academic PLC for the reflection and transformation of teaching practices and the integration of digital technologies (DT) in a meaningful way into teaching. The approach was based on Open Science (OS) (O’Carroll et al., 2017) and Open Educational Practices (OEP) (Cronin, 2017) as frameworks facing the challenges of critical Educational Action Research (EAR).

PRAXIS Project (September 2017 – February 2019) aimed to explore teaching practices and the integration of digital technologies (DT). Moreover, we were interested in exploring the differences (if any) between the processes developed by academics from Universidad de la República (Udelar) and those from practitioners of teacher training from Centro Regional de Profesores del Centro (CeRPC), exploring significant integration of technologies into teaching and teaching innovation.

Previous research (Ertmer & Ottenbreit-Leftwich, 2010; Alonso & Gewerc, 2015) highlights the absence of high levels of effective technology use and significant changes in the practices with DT even when they are developed in environments with high technological availability. In line with these findings, teacher training is considered to be the anchoring point of any innovation proposal that implies a genuine incorporation of DT.

EAR (Carr & Kemmis, 1986; Elliot, 1991) has a strong tradition in promoting teachers as researchers of their own teaching practices for educational change. Latin American education owns an important critical pedagogy school, in which Paulo Freire (1969; 1970) has had an important influence. Latorre-Beltrán (2010) summarises the characteristics of EAR as a participatory, collaborative, democratic and political process based on dialogue, which respects the contributions of all community actors, involving changes that affect people and their organizations. This process is aimed at producing
improvements in own practices, conceptions and attitudes of the people involved, in particular the
teacher and the students. As a reflective practice, it follows a circular and flexible process that includes
several phases: planning, action, observation and reflection. In short, it is a systematic process of
praxis-oriented learning, which requires monitoring and recording the reflections and evidences of
progress, linking theory into practice; in other words, it induces theorizing or building knowledge
through practice. For these reasons it is critical and transformative.

An approach to EAR from the perspective of academic PLC could contribute to educator’s
engagement in action research praxis. This approach has not yet been explored and could subscribe
to a broader research agenda on PLC (Hairon, Goh, Siew Kheng Chua & Wang, 2017).

Teachers’ learning instances, associated with their daily practice, can be individual (collect information,
reflect, find difficulties) or together with colleagues (collaborate, share, participate in extracurricular
activities, etc). This learning with others has been conceptualized in various ways and usually
described within the framework of communities, particularly of teacher communities, defining
different structures in which learning occurs (Vangrieken, Meredith, Packer, & Kyndt, 2017). These
authors point out that these communities seem to hold promise in areas wherein traditional forms of
teacher’s professional development have failed.

Patton & Parker (2017) indicate that educators prefer to work and learn with colleagues and
the benefits of this collaboration are well documented. In this sense, DuFour (2004) explains this
collaboration that characterizes PLC as a systematic process in which teachers work together
to analyse and improve their classroom practice, engaging in an ongoing cycle of questions that
promote deep team learning. Hadar & Brody (2010) describe metaphorically as a “symphonic
harmony” the process held by the community to achieve their goals through collegial discourse and
interaction. Owen (2014) outlines that teacher PLC models are closely aligned to the community of
practice literature, as they relate collegiality aspects, practical tasks with a focus on student learning,
and being research-oriented for the purposes of improving practice. She emphasises that beyond
student learning, teacher professional learning through collaboration is a paramount feature. Avidov-
Ungar (2018) expresses that PLCs have been found as an effective strategy for improving teachers’
capacities and promoting their long-term professional development, while reducing the physical and
psychological barriers of isolation between colleagues.

EAR and academic PLC may be benefited and strengthened from an open perspective, integrating
two areas of the open movement: OS and OEP. The combination results in an EAR approach that
integrates the communal dimension of academic PLC and openness in research activity with OEP.
This fusion of approaches to educational practice and research has not been explored either.

Frameworks have been established that address the analysis of OEP and the way in which
academic staff integrate them into their teaching practices. Cronin & MacLaren (2018) perform
a very exhaustive review of the evolution of the concept of OEP, including the integration of
perspectives from Europe to the so-called Global South and based on an analysis of the state
of the art on empirical studies about OEP for 10 years (2007–2017). They identify three major
categories in OEP: a) OEP studies that specifically focus on practices and policies that support the
creation, use and re-use of open educational resources (OER); b) studies that go beyond a focus
on OER-related activities and, in some cases, recommend considering OEP separately from OER;
c) highly contextualized studies, with a conceptual use of the OEP that precedes and then leads
to a later use of OER.

However, a broader perspective on OEP (Cronin, 2018) allows identifying four dimensions:
balancing privacy and openness, developing digital literacies, valuing social learning, and challenging
traditional teaching role expectations, where the use of OEP by educators is complex, personal,
contextual and continually negotiated. This new conceptualization on OEP guides towards an
approach centered on an open, collaborative and critical practice, which connects very well and also strengthens EAR, academic PLC and OS approaches.

OS proposes all stages of scientific work to be transparent, widely collaborative and accessible. As part of the broader Open Movement, OS incorporates human values such as diversity, inclusion, equity, responsibility and ethics («Open Science MOOC», n.d.) Working in an open way can make scientific practice more effective, and greatly increase the range and extension of knowledge and its access, encouraging research areas for the benefit of the public. Making OS the dominant paradigm for scientific practice becomes a new narrative (Lancaster, Thessen, & Virapongse, 2018).

OS is characterized by the openness not only of publications (Open Access), but also of research data, methodologies, processes and the involvement of citizens in a responsible research and innovation environment. It is about making available in digital format the process and results of research financed with public funds for the scientific community that produces them, as well as for the society in general that finances them, enhancing the reproducibility of science and the appropriation of its results.

This kind of values align with those driven by critical pedagogy (Giroux, 1988) and open education (Farrow, 2017), and it is a challenge to include these perspectives in the field of educational research.

Faced with this challenge, and considering teachers as researchers of their own teaching practices, it is necessary to develop competences related to OS which means, among other aspects, professional behaviour of the researcher, citizen science, learn how to interact with citizens, including the way to communicate with other interested parties that are not members of the scientific and/or academic community, to achieve better user participation and the dissemination of research results (O’Carroll et al., 2017).

In Latin America, an open approach to science could contribute to sustainable development in a variety of social, economic and political contexts, and a critical approach on OS is necessarily focused on how to address social challenges or equip citizens to access their rights (Albornoz, 2019). However, there are still few OS initiatives, with some experiences in Brazil, Colombia and Mexico (Ramírez-Montoya & García-Peñalvo, 2018).

Capacity development and building communities are priorities for the Latin American region to foster OEP, and a strategic approach for OEP in higher education is “one designed around achievable, local aspirational realities, coupled with opportunities for professional learning and support” (Stagg, 2017, p. 370). This led to a vision of the development of OS centered on action research and communities, driven by teacher professional development strategies connected to OEP.

In the next sections we describe PRAXIS research design which combines the aforementioned approaches, and some of the key factors that influenced the deepening of OEP and OS, focusing on the processes developed in the academic community #PraxisUdelar. We present and discuss the results of this academic PLC using Social Network Analysis (SNA), showing the impacts of this design on strengthening reflective practice. Finally, we report an application in progress centered on the redesign of teacher training as a new step towards educational change.

**Methods**

The methodological research design of PRAXIS Project corresponds to an EAR model (Carr & Kemmis, 1986; Elliot 1991) situated within the communities of practice framework (Wenger, 1998). According to a flexible design, the OEP perspective (Cronin, 2017) emerged throughout the development of the action research, which at the same time allowed the generation of OS practices (O’Carroll et al., 2017).
Developing EAR: conformation of academic PLC and burgeoning OEP and OS

#PraxisUdelar community involved 30 senior and early career university educators from very diverse disciplines, such as natural sciences, health, social sciences, engineering and art. They applied to participate on a three months teacher training course named “Analysis of teacher practices with digital technologies”, whose purpose was to develop the academic PLC #PraxisUdelar (Czerwonogora & Rodés, 2019). The course proposed specific goals, aligned with those of the project: 1) develop action research processes within the framework of learning communities, favouring the reflection on teaching practices; 2) on the basis of the analysis of practices, collectively identify the institutional conditions of the teachers that effectively integrate DT and how DT are incorporated in the university classroom and in virtual environments; what is the impact they have on teaching practices; 3) devise, design and implement initiatives to improve and transform teaching practices with DT, contributing to achieve a meaningful integration.

The educators were invited to join PRAXIS research from a personal perspective, experiencing the work within a learning community, reviewing and transforming their teaching practices and analysing the experience framed by an action research process. The course syllabus was organized in three modules: identification, reflection and transformation of teaching practices with DT. A blended design was implemented, alternating face to face group meetings (Figure 1) and reflective writing-blog posts with peer comments in an academic social network.

At the same time, the PRAXIS coordinating team developed OEP strategies, by opening to the interested public the team work sessions originally planned as internal seminars, deepening the OEP approach towards the incorporation of OS practices. These sessions were transformed to open

Figure 1: One of the face to face group meetings of #PraxisUdelar community.
webinars developed using free software BigBlueButton (Figure 2); they involved the participation of the uruguayan team and also collaborators from abroad.

![Figure 2: BigBlueButton capture of one of the open webinars of the project, with C. Cronin.](image)

The open webinars (five in total) had an important impact on the communities of practice of the project and also on the educational sector in Uruguay, and went beyond the limits of the project, spreading the benefits of OEP and OS. They were: “Practice and reflection: an inseparable binomial” (part a, b), “Management of Learning Communities with Social Networks”, “Digital Technologies: Presences and Absences in teacher training in Uruguay”, “Open Educational Practices in higher education: practical and critical approaches”, and “Closing the work of communities of learning and practice”. This last webinar was the closure of the learning communities both at the Udelar and CeRP-C (June 20) in which the results, reflections, impressions and experiences achieved during the process were openly shared.

**Gathering data methods: recording reflections and evidence of progress**

In table 1 we present the details of the course syllabus and the proposed activities. A variety of instruments oriented to (self) reflect on the teaching practices were designed:

- a rubric for the observation of teaching practices with DT, based on the DIGCOMP framework (Ferrari, 2013) and the Technology Integration Matrix (TIM) ([https://fcit.usf.edu/matrix/matrix](https://fcit.usf.edu/matrix/matrix)) for pair-group work, with crossed observation of online / recorded and face to face classes;
- a set of self-enquiry questions (Esteve, 2011) to help analyse in depth both the role of teachers and the students’ reactions in the classroom;
- analysis of Critical Incidents (Del Mastro & Monereo, 2014);
- “Anatomy of teacher action” (based on Domingo, 2011), to promote and contribute to self reflection on teaching practices with DT.
Table 1. PRAXIS “Analysis of teacher practices with digital technologies” syllabus

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting</th>
<th>Module</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 - April 4</td>
<td>Face to face</td>
<td>1. Identification of teaching practices with DT</td>
<td>Introduction to PRAXIS Expectations, Identification of practices with DT</td>
</tr>
<tr>
<td>Week 2</td>
<td>Academic social network</td>
<td></td>
<td>Crossed observation of teaching practices with DT (observation rubric) Co-evaluation of teaching practices</td>
</tr>
<tr>
<td>Week 3 - April 18</td>
<td>Face to face</td>
<td>2. Reflection on teaching practices with DT</td>
<td>Analysis of the observed practices with DT, Self-enquiry questions</td>
</tr>
<tr>
<td>Week 4</td>
<td>Academic social network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 5 - May 2</td>
<td>Face to face</td>
<td>3. Transformation of teaching practices with DT</td>
<td>Teacher thinking and action (Anatomy of teacher action)</td>
</tr>
<tr>
<td>Week 6</td>
<td>Academic social network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 7 - May 16</td>
<td>Face to face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 8</td>
<td>Academic social network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 9 - May 30</td>
<td>Face to face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 10</td>
<td>Academic social network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 11 - June 13</td>
<td>Face to face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12 - June 20</td>
<td>Webinar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All the written exchanges were shared openly in an academic social network based on Elgg free software (Figure 3). This social network includes discussion forums, blogs, micro-blogging in a central space, user profile information, friend lists, an activity screen, personal walls, calendars, bookmarks, and ages. For #PraxisUdelar exchanges we used mainly blogs; in every content uploaded to the platform the participants could select the sharing options, choosing between the following: private, limited, logged users or “all of them”. By selecting the last option, the content was fully open to the social network and the Internet.

![Figure 3: Capture of the #PraxisUdelar space at the academic social network.](image-url)
Analysis methods: Social Network Analysis

To account the impact of the research design that merged academic PLC, action research, OEP and OS, we opted to develop Social Network Analysis approach (SNA) (Borgatti, Mehra, Brass & Labianca, 2009; Newman, 2018) to analyse the written exchanges extracted from the academic social network, as well as the educator’s engagement to examine their personal teaching practices.

As Krebs (2000) points out, social network analysts look at complex human systems as an interconnected system of nodes (people and groups) and ties (relationships and flows), based on algorithms of graph theory. Data from these exchanges were gathered, processed and converted to adjacency matrix to import them to Gephi (Bastian, Heymann & Jacomy, 2009). The graphs and measurements were performed using Gephi 0.9.2. The parameters considered were node centrality and network density.

The centrality addresses the question on which are the most important or central nodes in a network (Newman, 2018). The degree centrality is the simplest centrality measure for a node in a network, defined as the number of edges connected to it. In a directed network each node has two degrees: the in-degree is the number of ingoing edges connected to a node (blog post answers received) and the out-degree is the number of outgoing edges (blog post answers sent). Eigenvector centrality is an extension of degree centrality that measures the influence of a node in the network, but instead of just awarding one point for every network neighbour a node has, it awards a number of points proportional to the centrality scores of the neighbours (Newman, 2018, p. 159). Network density measures how close is the graph to be completed: if we consider the maximum possible number of edges in a simple network, the density of a network is the fraction of those edges that are actually present (Newman, 2018).

Results and analysis

In the #PraxisUdelar community, 127 blog posts that received between 0 and 13 comments were registered along the work period. The total number of comments written on the blogs was 248.

Parameter values obtained from Gephi analysis of the academic social network exchanges are shown in Table 2. The number of nodes connected in the graph augmented from the first until the end of the face to face meetings (June 13), and the same was observed for the number of graph edges. By the time of the webinar closure of the community’s work (June 20) both nodes and edges diminished.

Table 2: Parameter values for SNA from Gephi

<table>
<thead>
<tr>
<th></th>
<th>April 18</th>
<th>May 2</th>
<th>May 16</th>
<th>May 30</th>
<th>June 13</th>
<th>June 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nodes</td>
<td>20</td>
<td>21</td>
<td>23</td>
<td>28</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>Edges</td>
<td>49</td>
<td>60</td>
<td>68</td>
<td>104</td>
<td>109</td>
<td>60</td>
</tr>
<tr>
<td>Degree</td>
<td>2.45</td>
<td>2.86</td>
<td>2.96</td>
<td>3.71</td>
<td>3.63</td>
<td>2.857</td>
</tr>
<tr>
<td>Graph density</td>
<td>0.13</td>
<td>0.14</td>
<td>0.13</td>
<td>0.14</td>
<td>0.13</td>
<td>0.14</td>
</tr>
</tbody>
</table>

As a reflection of a living environment (Gewerc, Montero & Lama, 2014) the #PraxisUdelar network was changing constantly. The graphs allowed to visualise this evolution during the timework of the
community, offering “split second images” of the network. We selected three networks corresponding to three moments from the beginning of #PraxisUdelar on April 4, 2018, that matched with face to face meetings: April 18, May 30 and June 13 (figures 4, 5 and 6, respectively). The last one occurred a few days before the date of closure of communities’ work (webinar, June 20).

In every network, the circles represent the nodes (participants) and their dimensions represent the weight of each node in the graph. The number inside each circle corresponds to the code assigned to each participant for the purposes of visualisation. The edges represent the interactions between participants, considered as responses to posts in the blogs of the participants in the academic social network. The thickness of the edges represents the averaged volume of interactions (weighted degree centrality). The tips of the arrows indicate the average direction of the interactions (who answers / comments to whom). The nodes were coloured following the eigenvector centrality of the network, where the highest values —meaning the most influential nodes— exhibit a deeper tone of blue.

Relationships on the social network started to shape and evolve from the beginning of the course and allowed traceability, identifying movements, contraction and expansion of the nodes within every network represented. Figure 4 shows the graph of accumulated interactions in the community #PraxisUdelar until April 18. It was observed that the removal of the heavier components of the network separately did not cause its disconnection. Besides, the removal of the nodes corresponding to team members of the project (acting as facilitators in the social network, in particular, node 0) did not provoke a significant distortion either.

![Graph of the community #PraxisUdelar until April 18. The numbers 0, 6 and 27 correspond to research team members of PRAXIS Project.](image)

*Figure 4: Graph of the community #PraxisUdelar until April 18. The numbers 0, 6 and 27 correspond to research team members of PRAXIS Project.*
The interactions of the #PraxisUdelar community accumulated until May 30 are shown in Figure 5. There was a large increase in the number of interactions and the disconnected components of the network diminished. In this case, the removal of node 0, which represents the responsible of energizing the academic social network of the community and a team member of the project, involved the loss of an important part of the interactions, although not the disconnection of the remaining portion of the graph. The observed increase in the blog post comments was a consequence of the “Analysis of Critical Incidents” activity developed during May 16 meeting.

Critical Incidents are “events bounded in time and space, unexpected and challenging, that when overcoming a certain emotional threshold, put in crisis or destabilize the teacher; to regain control they may require the review of their own professional identity” (Del Mastro & Monereo, 2014, p. 6).

This encounter constituted an inflexion point for the #PraxisUdelar community: on one hand, the research team remembered the participants (and emphasised) on the significance of the cross-blog postings on the academic social network, both to #PraxisUdelar community and to the research project itself, in order to document the process, share ideas with peers and contribute towards the collaborative construction of the community. On the other hand, the openness of the academic social network and the relevance of OEP were discussed, drawing attention to their repercussion on collaboration and sharing practices, and encouraging OS as a new cultural narrative (Lancaster et al., 2018). It’s worth to mention that the majority of the total blog posts of #PraxisUdelar community were shared openly in the platform (and in the Internet) selecting the option “all of them” (83%).

Figure 5: Graph of the #PraxisUdelar community until May 30. The numbers 0, 6 and 27 correspond to research team members of PRAXIS Project.
From May 16 onwards, the written exchanges augmented substantively. The posted narratives regarding the Critical Incidents experienced by the participants and the solutions they implemented to solve them revealed that the adoption of a particular technology (e.g. wikis) triggered diverse topics: difficulties related to new teaching contexts and possibilities to share information, the ethics of the digital world, authorship, collaboration, participation, how to exercise the role of student in new and changing digital environments. It’s remarkable that the proposed solutions to overcome these Critical Incidents did not imply the abandonment of DT but the transformation of its use and the training in digital literacies to address them better.

Figure 6 presents the network of cumulative total of interactions until the last face to face community encounter (June 13). The edges represent the interactions accumulated up to that moment, that is, they reflect the exchanges made in the social network throughout the entire experience. This network captures the second climax of the community: working with the “Anatomy of teacher action” instrument on May 30 (face to face meeting) and the written reflections and exchanges on this activity, posted from May 30 until June 13.

The “Anatomy of teacher action” considered five dimensions at play in the teacher thinking and action: 1) Implicit theories; 2) Teacher culture; 3) Emotions and feelings; 4) Professional ethics; 5) Professional development. In the face to face meeting, after a brief theoretical introduction of each dimension, we worked in groups (Figure 7), that had to locate each dimension in a teacher’s silhouette, according to their interpretation. The teams proposed very interesting analogies to represent the dimensions as...
elements of the teacher’s body: the implicit theories were placed on the skin, alluding to the fact that this is the largest organ of the body; the academic culture was located in the stomach, “because the content of that organ actually comes from outside” and works as a place for processing; professional development was situated in the thumb, on one hand, as a symbol of the development of the humanity associated with its ability to manipulate utensils and on the other hand, in reference to Thumbelina from Serres (2013) mentioning the incorporation of technology. In addition, the participants pointed out the ethic as a foundation on which they placed the professional development. They mentioned the balance between the dimensions, their interaction and modification over time, and that the evolution of one of them generated changes in the others (Czerwonogora & Rodés, 2019).

Figure 7: Anatomy of teacher action (teamwork).
The teamwork on the “Anatomy of teacher action” was discussed and analyzed in plenary. These ideas were recovered individually and shared in blog posts in the social network. We proposed to center the reflection on three dimensions of the anatomy to focus the transformations, and select one of them to incorporate micro innovations involving DT. The individual work of the participants generated highly creative productions in the graphic representation of the anatomy, with a very high level of self reflection which, in turn, triggered intense exchange and discussion in the platform.

By the time of the last community’s face to face meeting (June 13, figure 6), all the nodes were found connected in the graph. The greater weight (larger circles) of the nodes observed correspond to those teachers who led the exchanges (nodes 12, 14, 18, 22, 26). The removal of any of these nodes individually did not provoke disconnection in the graph, as was indicated for previous moments of visualisation. Among the significant nodes was also included the teacher responsible of dynamising the community (node 0).

Table 3 presents the evolution of the eigenvector centrality values for these nodes, that exhibit the deeper tones of blue in the graph (figure 6). Their distribution seems to “frame” the network, suggesting a “distributed power” in the community relations. Furthermore, it should be taken into consideration that not all the node’s neighbours are necessarily equivalent and a node’s importance in the network might be increased by having connections to other nodes that are themselves important.

For example, the connection from node 14 to node 18 exerts more influence on the eigenvector centrality of the latter than its connection with node 24.

The last column of table 3 presents the accumulated weighted degree centrality for the period (April 4-June 13). Node 18 deserves special attention because reveals the highest participant value, only surpassed by node 0. Its place in the network suggest an emergent leader role, that operated in collaboration with a small group of peers, incorporating the whole group into the discussion. This specific group of teachers were very proactive to participation and generated thoughtful exchanges with all their colleagues, who gave feedback on the ideas presented. They provoked and inspired the peers to engage them in the conversation.

<table>
<thead>
<tr>
<th>Node ID</th>
<th>April 18</th>
<th>May 2</th>
<th>May 16</th>
<th>May 30</th>
<th>June 13</th>
<th>Weighted centrality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>12</td>
<td>0.211</td>
<td>0.10</td>
<td>0.07</td>
<td>0.35</td>
<td>0.48</td>
<td>40</td>
</tr>
<tr>
<td>14</td>
<td>0.36</td>
<td>0.18</td>
<td>0.22</td>
<td>0.59</td>
<td>0.58</td>
<td>42</td>
</tr>
<tr>
<td>18</td>
<td>0.48</td>
<td>0.22</td>
<td>0.16</td>
<td>0.58</td>
<td>0.82</td>
<td>46</td>
</tr>
<tr>
<td>22</td>
<td>0.42</td>
<td>0.28</td>
<td>0.29</td>
<td>1</td>
<td>0.99</td>
<td>29</td>
</tr>
<tr>
<td>26</td>
<td>0.79</td>
<td>0.90</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
<td>43</td>
</tr>
</tbody>
</table>

On the closing webinar of the communities, #PraxisUdelar participants highlighted that “the most important thing was the community work, sharing, seeing what did colleagues from so diverse disciplines do with regard to DT”. The learning community provoked “… thinking in my teaching practice and establish the sense of every action; answering the question: what’s the purpose of
all these things that I’m doing in this course? When these actions are foundational elements of my teaching practices, they remain because they have a function and utility”.

The academic PLC led to the transformation of the participants: “In me there was a transformation, from the point of view that I am capable to identify the need, to find the tools that best fit the response, and to identify if the tool that I chose, was really useful for the objectives that I set for myself”.

The community allowed “to open up, to give my colleagues confidence, empathy, maybe also some catharsis, because I felt that the things that happened to me happened to everyone else, and at the end you realise of concepts like collaborative learning and all that kind of things. That’s what really happened to me here. I learned a lot from the experiences of other colleagues.”

In Wenger, McDermott and Snyder words (2002, p. 115), #PraxisUdelar might be defined as a “distributed community”, in the sense that did not rely on face to face meetings as its primary vehicle for connecting participants. The term “distributed” also highlights the multiple dimensions of distance to bridge. Although it might had been a limitation, participants expressed that the exchanges through the social network operated as opportunities to deepen self and shared reflections and knowledge. They also mentioned the chance to “…craft intimacy—close interactions around shared problems and a sense of commonality” (Wenger et al., 2002, p. 122).

With the reflection on the teaching practices with DT as a common goal, this task-based community (Riel & Polin, 2004) benefited from the diversity within individual members (e.g. multiple disciplines) and had more access to different and alternative perspectives that emerged during the community work, collaborating to find solutions or ideas that might not be available to groups with more in common.

#PraxisUdelar community allowed to open up and develop colleagues’ confidence and empathy, realising of concepts like collaborative and open learning. The virtual interactions of this community allude to the influence of social presence (Garrison, Anderson, & Archer, 2000, p. 94; Garrison & Anderson, 2005), understood as the ability of participants in a community to “…project themselves socially and emotionally as “real” people (that is, their full personality), through the means of communication in use”. The participants generated bonds that reflected trust and their written interactions expressed an affectionate and open communication with their colleagues, which contributed to the group’s cohesion. In this task, the aid of those participants who appear with greater weight in the graphs was relevant, as well the dynamising role of the coordination team promoting the emergence of OEP. Whitcomb, Borko and Liston (2009) mention that respect and trust are essential for a productive PLC. In a safe and supportive environment, teachers are more likely to take risks and engage in challenging discussions that push them to deepen understanding and attempt new practices: micro innovations find a more fertile substrate to emerge and be shared.

Conclusions and future work

Key findings of PRAXIS Project emphasise the impact of combining OEP, OS, academic PLC approaches, and collaborative and participatory technologies as capital strategies for the transformation of teaching and educational research practices. This fusion generated an innovative and critical EAR approach joining the communal dimension of academic PLC with an open perspective that favoured the building of OEP and OS competences through the evolution of educational research practices.

This innovative approach has not yet been explored until the present research. The success achieved by PRAXIS Project showed the strengths of this framework for developing reflective
practices, teacher's engagement in educational research and OEP and OS adoption. This framework will require the development of new experiences to be tested and validated in new contexts and communities.

As a way to start achieving this goal and based on the previous experience, a new EAR project called PRAXIS 2 (now in progress) proposes to deepen PRAXIS framework, following and expanding its design, attending teacher professional development for teacher trainers. The study is centered in the conformation of a new community integrated by teacher trainers from the CeRP, including didactic teachers and teachers of specific disciplines from different areas in Natural Sciences, Social Sciences, Maths and Language.

This research project proposes to promote teaching practices with DT pointing to their genuine integration in different training levels. PRAXIS 2 started from an initial diagnosis of teacher trainers' practices and intends to intervene through a tailored formative plan. For this reason, we expect to generate micro innovations destined not only to teacher training students but also High School students, final subjects of these practices. Besides, due to the OEP included in the framework, PRAXIS 2 will seek to share and build collaboratively among peers, reaching other communities to inspire significant changes.

Acknowledgements

This contribution was possible thanks to the financial support of FSED_3_2016_1_133331 "PRAXIS: Formación pedagógico-didáctica en tecnologías y práctica docente" and FSED_3_2018_1_150973 "PRAXIS2: Rediseño de la formación de docentes con tecnologías digitales" from the Fondo Sectorial de Educación - CFE Investiga – Agencia Nacional de Investigación e Innovación (ANII) from Uruguay.

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Duelling identities in refugees learning through open, online higher education

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Abstract
This paper reports on a qualitative study of the transition experiences of refugees studying through open and online higher education. Online, open education programmes have considerable potential to provide flexible access to education for refugees, who are not well represented within higher education. As part of a wider University of Sanctuary initiative, interview data from six Ireland-based refugees was analysed using a data-led, qualitative methodological framework grounded in discursive psychology. Findings indicate that participants’ transition narratives are typical in many ways as they form student identities while managing their existing identities and begin to feel, or not, that they belong. Participants constructed a stark divide between two duelling identities, between their identity as a refugee and their new identity as an online learner. Identification with the university was emphasised in contrast to disidentification with the ‘asylum world’. These findings indicate that a strategically connected approach to supporting refugees transition into higher education can impact positively on these students.

Keywords: higher education, online learning, refugee, asylum seeker, identity, access initiative

Introduction
The crisis of population displacement is one of the most significant global challenges of our time, with over 70 million people driven from their homes by conflict, climate change, poverty, etc. (Burzynski, Deuster, Docquier, & De Melo, 2018; UNHCR, 2019). Linking to the UN Sustainable Development Goals there is a collective responsibility to ensure that educational systems adapt to the needs of refugees to ensure this vulnerable group is visible and accounted for in educational provision. However, access to and successful participation in Higher Education are key challenges facing refugees and asylum seekers. According to the UNHCR (2015a; 2015b, p. 3) “around 1% of refugee students are enrolled in tertiary education”.

In the Republic of Ireland, a system referred to as Direct Provision was set up in 1999 as an emergency measure to meet the basic needs of food and shelter for people seeking asylum while their claims for refugee status are being processed. The Direct Provision system provides them with accommodation, a minimal living allowance, state-funded medical care, and mainstream access to the primary and post-primary education systems for children (RIA, 2010). Twenty years later Direct Provision remains the system within which those seeking asylum in the Republic of Ireland are contained (O’Reilly, 2018). There were 5,370 refugees and asylum seekers reported as being accommodated in 33 Direct Provision centres in 2018 (RIA, 2018). The living conditions for people living in these centres are cramped, with limited access to cooking, social and transport facilities and little or no access to computers or the internet (O’Reilly, 2018). Direct Provision living conditions have been criticised by human rights groups as inhuman and degrading. Asylum seekers experience
long waiting periods in Direct Provision of up to three years while their cases are processed, and have very limited rights to work (figure 1). All of which impacts their physical and mental wellbeing (Ni Raghallaigh, Foreman, & Feeley, 2016). If they are granted refugee status they can access Irish state financial support for further and higher education. Asylum seekers, however, are not entitled to these supports (RIA, 2018). It should also be noted that the Irish state does not provide financial support for learners designated as part-time, online learners (Delaney & Farren, 2016) and so asylum seekers and refugees studying in that mode have no state supports to access regardless of their status.

Figure 1: An image of Direct Provision accommodation at Lissywollen, Athlone, Ireland in 2013. Braca Karic, Direct Provision centre, Athlone, CC BY 3.0.

The Universities of Sanctuary initiative is made up of a network of universities committed to welcoming those seeking sanctuary into their communities and to providing a safe place within which they can pursue their educational goals (Universities of Sanctuary, 2019). Since becoming Ireland’s first University of Sanctuary in 2016, Dublin City University (DCU) has awarded 23 University of Sanctuary scholarships to refugees and asylum seekers. Sixteen of those scholarships were provided for flexible, open education programmes designed for off-campus adult learners, with ten students studying at undergraduate level, and the remaining six studying at postgraduate level. These online scholarships link to the UN’s Sustainable Development Goal 4, Quality Education, and Goal 9, Industry, Innovation and Infrastructure in the area of digital equity, through enabling access to information and communication technology (UNHCR, 2015b). Central to the DCU online scholarships is not only the provision of access to HE but also the provision of access to the internet, a laptop and the digital skills training necessary to overcome the inequalities inherent in the Irish Direct Provision system (Farley & Willems, 2017). The aim of this initiative is to aid refugees and asylum seekers in overcoming the significant financial, structural, cultural, and digital equity barriers to accessing higher education (Crea & Sparnon, 2017; Traxler, 2018).

For those who do access university, there are further challenges. Students who are asylum seeking or have refugee status often experience challenges in having their prior learning recognised (Hannah, 1999). A lack of staff awareness of these students’ situation, coupled with limited support from the institution, may also impact on them and their studies (Earnest, Joyce,
deMori, & Silvagni, 2010). This situation can be made worse where students feel the need to keep their refugee status a secret (Morrice, 2013). These students are also impacted by socio-cultural issues, regularly experiencing difficulties connecting with other students and staff in the institution, finding group-work, as well as the observation of academic regulations more generally, to be challenging (Kong et al., 2016). These specific challenges are in addition to the fact that for any new student the process of becoming a student is an intense experience that challenges their sense of coherence with regard to their identity (Baxter & Britton, 2001; Kahu & Nelson, 2018). This requires these new students to engage in identity work, defined by Sveningsson and Alvesson (2006) as where people are engaged in forming, repairing, maintaining, strengthening, or revising the constructions that are productive of a sense of coherence and distinctiveness.

New students must engage in the identity work of changing from their old way of being to a new one that has to accommodate their new student identity (Allen-Collinson & Brown, 2012). This is a process that often results in duelling identities as they manage the interaction between their new identity and their existing portfolio of identities (Baxter & Britton, 2001; O’Boyle, 2015). In the context of this paper, the term ‘duelling identities’ is used to mean to those instances where an individual engages in identity work during a time of crisis or transition, also referred to as identity conflict or identity struggle, and draws on the general literature relating to identity as a multidimensional biopsychosocial process (Askham, 2008; McAlpine & Amundsen, 2011; Stapleton & Wilson, 2003; Sveningsson & Alvesson, 2003).

Persistent barriers, for example relating to financial status or digital skills, can also impact on the study experiences of students who are asylum seeking or who have refugee status (Castaño-Muñoz, Colucci, & Smidt, 2018). These students often feel they are not treated equally to other students, leading to perceptions of racism, feelings of isolation (Onsando & Billett, 2009), and of simply not belonging in the institution (Harris, Ngum Chi Watts & Spark, 2013). This lack of a feeling of belonging is significant as a number of authors emphasise the importance that student engagement and a sense of belonging in the institution has on student success (Kahu & Nelson, 2018; Thomas, Hill, O’Mahony, & Yorke, 2017). Feeling that one does not belong will impact on the process of identity formation, perhaps with a resulting disidentification (Kriener & Ashforth, 2004) with the institution. It is also possible that the identity formation process may result in a disidentification with an existing identity as they come to identify more with their student identity. Disidentification can occur with a context in general or with specific elements that exist within the context (Kreiner & Ashforth, 2004). The concept of disidentification raises the issue of nonparticipation, where a conflict or identity struggle exists between an individual’s activity and their identification (Hodges, 1998). For example, when an individual is engaged in an activity, within a context, where they disidentify with the activity, the context or both. For such an individual to remain in the context may be harmful to that context and the individual. Many institutions engage in activities designed to facilitate student transition into higher education (Brunton, Brown, Costello & Farrell, 2018a; 2018b; Cook & Rushton, 2009; Farrell, Brunton, & Trevaskis, 2019; Garder, Siegel & Cutright, 2001), as active support during transitions can develop the skills needed for longer-term success (Nash, 2005; Thomas et al., 2017).

Based on the above literature the programme teams supporting these online scholarship students augmented existing student success practices in order to establish a strategic approach to supporting their transition into online study at higher education level. This approach to student success comprises both pre-entry and on-entry supports with financial, logistical, digital, and programme-specific actions targeted at the early stages of the study life cycle (see table 1).
This paper examines the narratives of six adult University of Sanctuary scholarship recipients in their transition into open, online programmes in Irish higher education and their first year of study on online programmes, facilitated by a strategic student success programme. This examination was conducted in order to explore how these refugees and asylum seekers talk about higher education, and about themselves as higher education students. It is important that such research is conducted in order that an in-depth examination of these transition experiences is available to inform the design or adaption of student success programmes used to facilitate refugee and asylum seeker transition into higher education. This is our response to the UN Sustainable Development Goal that educational systems should adapt to the needs of refugees.

Methodology

A qualitative study was designed to seek a greater understanding of University of Sanctuary scholars’ narratives in the early stages of the study life cycle. This study demonstrates an interpretative, data-led approach to the study of participant discourse, especially around identity, grounded in a Discursive Psychology (Edwards, 2012; Wiggins & Potter, 2008) methodological framework. Discursive Psychology “provides a systematic, empirical analysis of talk and text... using a coherent set of concepts and methods” (Edwards, 2012, p. 427). McLean (2012, p. 99) summarises this approach as a view of identity as “co-constructed, negotiated in everyday interactions, and related to the interaction between forms of structure and agency”. Discursive Psychology underpin this study’s theoretical framework, with language utilised as a resource in analysing the participant’s constructions of their social world. However, beyond these constructions that emerge in participants’ interviews, this study maintains a broad focus on the production of meaning in social life, and we recognise that identity is a multidimensional, biopsychosocial process with individuals having a coherent sense of their general identity over time (Askham, 2008; McAlpine & Amundsen, 2011; Stapleton & Wilson, 2003), albeit one that is challenged during times of transition when an individual must engage in identity work in order to restore that sense of coherence and distinctiveness (Sveningsson & Alvesson, 2003).
Following a review of the relevant literature the following overarching research question was formulated:

*How do asylum seeker and refugee students talk about higher education, and about themselves as higher education students?*

The setting for this research is DCU Connected at Dublin City University (DCU), Ireland. DCU Connected delivers flexible, undergraduate and postgraduate open education programmes through the mode of online learning. Ethical approval for the study was granted by the institutional Research Ethics Committee. Participants were selected based on purposive sampling and are asylum seekers and/or refugees based in Ireland, who have been awarded a scholarship to study online at undergraduate and postgraduate level across different subject domains. The first cohort of participants recruited is comprised of six students of which four are male and two are female. Participants are geographically distributed around Ireland and are primarily living in state-run Direct Provision centres.

As insider researchers, who work in DCU, this has limitations for the study, as issues of power and bias can emerge. The issue of power was dealt through the use of institutional gatekeepers to access the participants, and interviews were conducted by members of the research team who did not directly teach the participants, so as not to exert influence.

The data collection technique was semi-structured recorded interviews conducted online by the research team. Interviews were conducted in real time online using a private Adobe Connect classroom. An interview schedule was created which contained sixteen open-ended questions which were shaped by the research questions. The interview schedule had questions around starting to study, community and social integration, supports and services, experiences of studying online, expectations, and goals.

Transcribed data was inputted into a computer aided qualitative data analysis software package (NVivo 12) and analysed using a methodological framework grounded in Discursive Psychology (Edwards, 2012; Wiggins & Potter, 2008). The analytic process involved a first step of coding by breaking data down into manageable chunks or categories, before moving to a second step of identifying the “pattern within language in use, the set or family of terms which are related to a particular topic or activity” (Taylor, 2001, p. 8). The analysis was data-driven and not structured by prior theory as findings emerged from the iterative identification of patterns within the data resulting in a cohesive and coherent thematic map.

**Findings**

The analysis of participant data indicates that these learners’ transition narratives are typical in a number of ways, compared to other learners studying open and online programmes, as they: form new student identities while managing their existing identities; begin to feel, to a greater or lesser extent, that they belong in the institution; make friends; and establish support networks with fellow students, academic staff and administrators, and in their personal lives. However, these learners also constructed a distinct and stark divide between two duelling identities, describing a struggle or conflict between their identity as a refugee, in particular those going through the asylum-seeking process, and their new identity as an online learner. Becoming an online learner was constructed as a way to escape the stressful ‘asylum world’ that participants otherwise inhabited, connecting higher education study with the potential future identities to which participants aspired. Identification with the university was emphasised in contrast to their disidentification with the ‘asylum world’ (see figure 2).
Direct Provision versus the university

When participants talked about Direct Provision it was with consistent constructions of a space that is a source of stress, anxiety, depression, idleness, and lethargy where conditions were simultaneously cramped and lonely, “life in direct provision is not an easy life. It’s a place where you live with other people with a different nation, with different culture and I share my room with two other people” (Participant 6). There was a strong discourse present in the data of participants seeking educational opportunities but being frustrated by the Direct Provision system and systemic barriers to accessing educational opportunities as refugees:

in Ireland it was very, very difficult for me and getting back to education, you know, education programmes I always wanted to, you know, get back to school, you know. And to access the level of education was fairly impossible. I remember staying in my hostel, you know, having sleepless nights with my computer writing emails to private organisations, churches, you know, seeking for funding because I just felt, you know, education was the only thing which could help in such a stressful situation. (Participant 2)

The consistently negative construction of Direct Provision sits in sharp contrast to the way in which participants built up a picture of the university in their interviews as being: helpful, “It has helped me to be more organised” (Participant 1); prestigious, “I was aware, you know, getting to DCU which is a world class and top level university” (Participant 2); and as a route to a desired future:

I wanted to do psychology at that time and the fact that I’m doing it now and it’s an opportunity that I’ve been afforded by DCU, they’ve helped me so much to achieve my goals. I’ve always wanted to study psychology... I know that this is my goal and this is where I want to be, this is a direction that I want to take so they’ve helped me so much to achieve that. (Participant 3)

In their discourse participants frequently set their construction of the university as a positive against their construction of Direct Provision as a negative:

I used to be idle in the hostel. I didn’t have anything to do as we are not allowed to work, not allowed to study. So when I got the scholarship and I started to study, it was a big achievement. It helped me to come out of my loneliness mood. I was always lonely, I was always idle, feeling depressed all the time, but I now am feeling like I can see the future. (Participant 6)
Duelling identities in refugees learning through open, online higher education

The origin narratives given by participants relating to how they came to study in the university tended to be structured as stories of a journey away from the negative asylum system and towards a brighter future, enabled by entry to the university. The scholarship programme and the open access it provided to online learning for these participants was constructed as a means of overcoming existing barriers to higher education for them as refugees. The following extract shows Participant 5 talking about receiving news on his scholarship application, and how it was associated with a strong, positive emotional response to that news:

Then I waited, like on [date] [month], it actually happened, the way it happened was like a miracle to me because I remember on [date] [month] it was my birthday, 7th September, and it was in the afternoon. That day I had nothing to do, I was in the hostel, I was in bed. Then all of a sudden, I woke up because my phone vibrated like an email came in. Then I read the email. The email was from DCU and the email was congratulating me like to be one of the people that got the scholarship and it also said out of 62 applicants, you were considered to be one of the people that are getting the scholarship. That’s how I ended up at the DCU. (Participant 5)

The university is constructed as a source of support, broadly in terms of the support of the scholarship programme and provision of central services but especially with regard to academic and pastoral support from programme teams. Participants described themselves as being part of a community:

I think it’s, you know, it’s a network, it’s a network of everything, you know, online classroom is a good contact on, you know, on the DCU campus, contacts with the DCU staff, you know. I think all that, it just makes me feel so good. You wake up and you get a mail from, you know, from [Name] or from yourself, you know, this or from [Name] or [Name], you know, it just feels good, you know. You feel like you’re part of, you know, a wealth, educational community. (Participant 2)

The descriptions of the University as Supportive were reinforced by the content of participant discourse around their participation in an organised welcome day at the start of the academic year. The welcome day was part of a strategic student success programme delivering key messages designed to facilitate transition into higher education. Participant discourse around the welcome day and associated student success activities demonstrated internalisation of key messages around success:

Oh yeah, the welcome day, I liked that especially the, okay the message was very encouraging because when I went there I was thinking, well where am I going it’s going to be hard, about the welcoming message and to hear stories from past students who have gone through that and they tell you that yes, there will be challenges here and there but you will make it. It was encouraging and when we went into the second room there were students, some of them were doing second year and there were some that had graduated and they told us that yes the first year will be challenging but as soon as you find your feet you will be fine. That gave me some hope and I carried that hope with me up until the exam. (Participant 1)

Again, the supportive university discourse sits in stark contrast to descriptions of Direct Provision as unsupportive, as a barrier to the pursuit of their educational and life goals:

I always do the research on my own online and as I told you I’m living in direct provision. There is nowhere that it is provided for as a study room or anything, but what I do I always go to the Manager, ask him to provide me one of the entertaining rooms in the hostel by night time, when they are not using the room. I only do my revision during night time. I can’t do it during the day, because there is too much going in the hostel. I can’t find a quiet place to study. (Participant 6)
Discourse on duelling identities

The distinction seen in the section above between participant discourse on the university versus Direct Provision also carries through into their discourse on belonging and identity. Acceptance to the university through this open education, online route was constructed as a personally transformative event with regard to identity, again associated with a strong, positive emotional response:

I got this call regarding, you know, and that was it, they said will you hold on the line and a few minutes after they were like oh congratulations, you got it, then I was there, honestly I can’t express the feeling, you know, I felt this different kind of person inside me (Participant 2)

Participants constructed strong narratives of belonging to, and identification with, the university:

I: do you feel part of the DCU community?
P1: Absolutely 100%, yes.
I: And what made you feel part of the community?
P: I think the services that are offered by DCU. Like it’s like the community within a community that I belong to my own community but then I have the DCU community. Everybody’s welcoming, you are at home (Participant 1)

Within these strong narratives there was some construction of their physical distance from the university, as off-campus online learners, as a point of frustration or disadvantage:

If I was a day student it would be different, you know, I would be part of the community, I would be more involved in the university work but being an online student, you know I am not on the school campus all the time. (Participant 4)

Participant talk around the formation of their new student identity, tied to their strong identification with the university, was frequently set against participants disidentification with their way of being in Direct Provision. Through their discourse participants disconnected their talk about their identity, about who they feel they are, from the negative aspects of Direct Provision that they describe. Direct Provision is constructed as something that negatively impacts on identity, rather than providing a source for identification. The following data extract shows Participant two articulating this identity struggle as their social world is split between these two different contexts, and its impact on their motivation to study:

...this is two different worlds, you know, you have the asylum world and you have, you know, you have the study world. And, you know, you might have, you know, a little clue about what it could be. The asylum world is very, very depressing, you know, you’re constantly anxious, you’re constantly in limbo and then back to the study world it’s where you need, you know, you need to put in that 100% concentration, especially when it comes to third level education you need to put your head down. And so it was a little bit hard because there was times where I felt, you know, depressed and stressed, I wouldn’t even want to go on my computer. But again when I flashed back to the support that DCU is giving me, you know, I tell myself no, I cannot, you know, I cannot let this happen. And so when I think of the support that the DCU family has given me, it gives me, you know, it tells me, it’s like a voice talking to me, [name], wake up, wake up from the bed, go on your computer, you need to get these assignments done, you need to do this, you need to do that and so that was it. So it was a little bit difficult for me. (Participant 2)

Discussion

This section presents a discussion of the findings shown above in the context of the related literature and this study’s research question:

How do asylum seeker and refugee students talk about higher education, and about themselves as higher education students?
The key finding emerging from an analysis of participant data grounded in discursive psychology was the interplay between two social worlds constructed as being in opposition to one another, the university/being a student and Direct Provision/being a refugee. This can be seen in participant constructions of those contexts and in relation to how they construct their own identity within those contexts, and as they ‘move’ (physically, temporally, and psychologically) between them. Participants often employed the discursive device of setting their construction of the university as a positive against their construction of Direct Provision as a negative.

Participant constructions of the Irish Direct Provision system, as well as the negative impact that being in that system has on accessing and being able to study successfully in higher education, align well with existing literature in this area (Harris et al., 2013; O’Reilly, 2018). This finding is further supported by studies from other jurisdictions (Castaño-Muñoz et al., 2018). In contrast the university was constructed in very positive terms, as helpful, prestigious, and as a route to a desired future. Many of the pitfalls experienced by students who are refugees or asylum seekers in the literature, such as socio-cultural issues, regularly experiencing difficulties connecting with other students and staff in the institution, finding group-work difficult, etc. (Kong et al., 2016) did not feature in these participants’ narratives. A possible reason for this that can be seen in participant narratives is that they are University of Sanctuary scholarship recipients entering the institution through flexible, open education programmes designed to be taken online by adults with other time consuming commitments. This open education teaching and learning model facilitated flexible entry into higher education. These participants were also supported by a specific student success programme and received financial, logistical, academic, and pastoral supports. Such active supports during the early parts of the study life cycle can facilitate student success (Nash, 2005; Thomas et al., 2017). This highlights the importance of strategic student success programmes for facilitating transition into higher education for refugees, in order to achieve the UN Sustainable Development Goals of having a collective responsibility to ensure that educational systems adapt to the needs of refugees to ensure this vulnerable group is visible and accounted for in educational provision. Through the provision of these supports for refugees the financial, structural, cultural, and digital equity barriers to accessing higher education may be overcome (Crea & Sparnon, 2017; Traxler, 2018).

The distinction between the social worlds of university and Direct Provision carried through to expressions of participant identity, who they felt they were in each context. Participants constructed a consistent disidentification with the Direct Provision context, or “Asylum World” as Participant 2 describes it (Kriener & Ashforth, 2004), with Direct Provision being constructed as something that causes identity struggle in and of itself as they struggle to hold on to their sense of who they are while living in those circumstances (Hodges, 1998). This disidentification is set against a forceful construction of very much belonging to, and identifying with, the university context, or “Study World” (Participant 2). With regard to the student success literature this strong sense of belonging and accompanying sense of a strong student identity having been formed can be seen as a positive (Allen-Collinson & Brown, 2012; Baxter & Britton, 2001; Kahu & Nelson, 2018; Thomas et al., 2017). This juxtaposition between their refugee identity and student identity paints a picture of two duelling identities with students engaging in identity work during their transition into open, online higher education in order to overcome identity struggle caused by the process of becoming a student.

Conclusion

This paper’s findings further support the literature indicating that a strategically connected student success approach to supporting asylum seekers and refugees transition into online higher education, accounting for the structural, financial, logistical, digital, and social barriers typically experienced can
impact positively on these students. It also emphasises the importance of providing flexible, online, open education study routes at higher education level for under-represented groups. Although limited by the fact this is a small, in-depth, qualitative study, the findings presented above provide useful insights into how institutions can develop and deploy effective policies, practices, and procedures to assist asylum seekers and refugees to integrate into online programmes at higher education level. To conclude, this paper adds credence to the proposition that access programmes such as the University of Sanctuary scholarship schemes can successfully facilitate participation in higher education for asylum seekers and refugees. Further research should move beyond the transition phase and first-year to examine the experiences of asylum seekers and refugees across the entire study life cycle. Further research should also focus specifically on how educational providers can specifically support students with the types of identity struggle between two (or more) duelling identities described in this paper.

Acknowledgement

The authors would like to acknowledge the DCU Educational Trust for their support in the provision of University of Sanctuary scholarships for online study.

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Open Education for a Better World: A Mentoring Programme Fostering Design and Reuse of Open Educational Resources for Sustainable Development Goals

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Abstract
An international online mentoring programme Open Education for a Better World (OE4BW) has been developed to unlock the potential of open education in achieving the UN Sustainable Development Goals. The programme provides an innovative approach to building Open Educational Resources, connecting developers of educational materials with experts volunteering as mentors. The model of the programme has been carefully designed and tested in two subsequent implementations in years 2018 and 2019. Results have proved the model to be useful for building capacities in open education, while producing concrete educational materials with great potential for social impact. Analysis of results has been used to suggest further improvements needed for enabling the program to be used on an even larger scale. The paper presents the development of the OE4BW model, its main characteristics, implementation results and guidelines for the future.

Keywords: Open Educational Resources (OER), Sustainable Development Goals (SDG), Capacity Building, IT for Education, Online Mentoring

Introduction
All United Nations Member States adopted the 2030 Agenda for Sustainable Development with 17 Sustainable Development Goals (SDGs) presented in Figure 1, from ending poverty to a range of social needs including education, health, equality and job opportunities, while tackling climate change and preserving our environment (Griggs et al., 2013). UNESCO has been entrusted to lead SDG4 –Quality of Education– addressing universal primary and secondary education, early childhood development and universal pre-primary education, equal access to technical/vocational and higher education, relevant skills for decent work, gender equality and inclusion, universal youth literacy, ensuring that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy, as well as education for sustainable development and global citizenship.
Figure 1: Sustainable development goals (United Nations, 2019).

Although access to education is a basic human right and has a crucial role in empowering people on their way towards all the other SDGs, it is far from being ensured to everyone. One of the ways for facing this big challenge is through Open Educational Resources (OER), lowering different sorts of barriers, from economical to cultural, social and political. The term Open Educational Resources was coined at UNESCO’s 2002 Forum on Open Courseware as

“teaching, learning and research materials in any medium –digital or otherwise– that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions” (Chiu, 2016).

OER include free materials and courses at all levels of formal as well as lifelong learning processes. Many benefits they offer have been investigated and reported. For example, Hilton (2016) presents studies on OER with the focus on cost, outcomes, and perceptions. They have shown that OER improve student learning while significantly reducing the cost of their educational resources. Studies have also shown that perceptions of OER by students are generally positive, and the availability, amount of information and easy orientation are the most valuable benefits of OER usage. According to Jena (2009), OER help in fostering on-line co-operation among educators and increase the quality of learning resources. According to Hilton (2016), studies on OER with the focus on cost, outcomes, and perceptions have shown that OER improve student learning while significantly reducing the cost of their educational resources. Studies have also shown that perceptions of OER by students are generally positive, and the availability, amount of information and easy orientation are the most valuable benefits of OER usage.

The relation between OER and SDGs was highlighted by Rajiv Jhangiani speaking at the United Nations Headquarters (Jhangiani, 2018). He stated that “one incredibly powerful tool that is being effectively deployed across our world right now in service of SDG4 is Open Educational Resources or OER.” This can be illustrated by concrete examples, e.g. TIDE project (Lane, 2017) bringing together universities in UK and Myanmar to improve the graduates’ employability. More than 500,000 students across Myanmar accessing higher education through distance learning will benefit from these activities. Most of the examples focus on SDG4, while there has been no systematic study or collection of OER for all 17 SDGs from a single entry point so far.

Besides being an alternative to expensive textbooks, many OER explicitly offer a possibility to be changed so as to better suit specific circumstances. As such, they contribute to the affordability and sustainability of education (Urbančič & Orlič, 2016). However, as described in more detail in the next section, there is a lack of opportunities for obtaining knowledge and skills needed to design, implement, use and reuse OER.

To respond concretely to the abovementioned challenges, the authors from the University of Nova Gorica and a UNESCO chair on Open Technologies for Open Educational Resources and Open Learning have developed an innovative model of an online mentoring program, based on a hypothesis
that there is a big not yet explored potential in connecting concrete ideas and needs at one side with know-how about OER development and deployment at the other. This paper presents the developed model and its two subsequent implementations through which the hypothesis has been confirmed.

**State-of-the art in capacity building for OER**

To investigate the global situation with OER, Commonwealth of Learning (COL) in UNESCO carried out two surveys using two questionnaires, the first one being addressed to governments, and the other one to various stakeholders including Secondary schools, Vocational and technical training institutions, Colleges and universities, Research institutes, Non-governmental organisation and Independent consultants worldwide (Open Educational Resources: Global Report, 2017). 102 countries responded to the first questionnaire, and more than 600 responses were received to the other. The study concludes that the development of open educational resources is regionally very uneven, that despite the promotion of cooperation, it is still largely very individual, and that there is still too much emphasis on educational resources, while little attention is given to the practical implementation. Among the benefits, it points out that OER reduce the cost of learning materials (80.88% of responses), that open licensing allows continuous improvement of quality (74.45% of responses) and that OER help developing countries access to quality materials (77.75% of answers). However, among the Gaps and Challenges, on page 62 the study mentions “Support Capacity Building for the Sustainable Development of Quality Learning Materials”, and among the most important conclusions of the study summarized in the Foreword written by Professor Asha Kanwar (page vii) we can read

“A common concern that runs through both the government and stakeholder surveys is lack of users’ capacity to use and integrate OER in teaching and learning. This highlights the need for the continuous capacity building to understand, find and use OER”.

With the aim of fostering substantial further steps on a global scale, there was the Ljubljana action plan adopted in 2017 at the Second UNESCO congress on Open Educational Resources (Second World OER Congress, 2017).

As presented in *Policy Approaches to Open Education – Case Studies from 28 EU Member States* (Inamorato dos Santos et al., 2017), in most EU Member States a number of initiatives in the field of open education are under way, but a long way will be needed to achieve the goals. In most Member States, the vision of open education is set rather broadly and goes substantially beyond open educational resources. Nevertheless, in the concrete policies that should implement the vision, the main focus is still largely limited to educational resources and educational content, while dimensions of cooperation, flexibility and transparency in education are not sufficiently covered. In the same study, the authors also emphasize capacity building as one of the main enablers for open education.

The study carried out by Redecker and Punie (2017) establishes a reference framework for the development of digital competences for education providers in Europe. As defined in its introduction, the aim of the study is to help Member States in their efforts to promote the development of digital competences and to promote innovation in education. The framework is intended to support national, regional and local policies and initiatives. The study defines the key competences relevant to the processes of digitalisation of education. It focuses on six areas according to the different aspects of the educators’ work: (1) Professional cooperation - the use of digital technologies for communication, cooperation and professional development; (2) Digital resources - the creation and sharing of digital resources; (3) Teaching and learning - design and use of digital technologies for teaching and learning; (4) Evaluation - the use of digital technologies and strategies to improve assessment;
(5) Assistance to learners - use of digital technologies to increase the inclusion, personalization and active participation of learners; (6) Enabling the development of learners’ digital competences - to train learners for the creative and responsible use of digital technologies for information, communication, content creation and problem solving.

Developing the OE4BW Model of an Open Online Mentoring Program

The authors have followed the abovementioned reference framework introduced by Redecker and Punie (2017) when deciding to develop a sustainable, affordable model of capacity building for OER. Since there are no formal educational programs dealing holistically and interdisciplinary with open education available at the moment, the goal was to show that the need and motivation for progress in this field has enough potential to start a bottom-up movement, which – carefully guided so as to be in accordance with the top-down visions - can result in a critical mass of people and projects connecting open education and SDGs, justifying future investments into this area.

Since there have been no funds allocated to the presented program so far (except sponsors’ donations for travel), we decided to bring together developers of OER in various topics related to SDGs and experts in OER, willing to volunteer as mentors, highly motivated by the importance of SDGs being approached by as many people as possible through the design, use and reuse of OER.

Mentoring is used as an important resource in professional learning (Tillema & Van der Westhuizen, 2013) and education is one of the fields where it is not only widely used, but also intensively investigated (Anderson & Shannon, 1988; Castanheira, 2016). It can be carried out in different forms, one of them being e-mentoring (Ensher & Murphy, 2007), called also online mentoring. The latter is particularly suitable in contexts like the one in our programme, where mentors and mentees are at different locations and a high level of flexibility is needed for them to cooperate. Benefits, requirements and also limitations of e-mentoring as compared to traditional mentoring are given in more detail by Rowland (2012) with a focus on an organizational setting. Online mentoring is also aligned with the trends in e-learning as presented by Pandey (2018), pointing out, among others, mobile learning, digitisation of instructor-led training and just-in-time performance support for professionals.

The basic idea of focusing on “topics that really matter” has been inspired by the Data Science for Social Good program (Center for Data Science and Public Policy, 2019), but has been put into a more flexible framework, not requiring physical presence for several weeks, and leaving space for an approach as individual as possible, while the results should be available to everyone under an open licence.

Basic idea: Open Education for a Better World (OE4BW) is an international online mentoring program supporting the development and implementation of freely accessible modules and resources for online education on topics with social impact according to the UN Sustainable Development Goals (SDGs). Proposals for the projects of OER development are collected with a global call. Accepted proposals are selected based on (1) their compatibility with SDGs, (2) social impact, (3) maturity of the idea, (4) capacity and commitment of the applicant to make the idea come true. In the continuation, selected applicants are supported on-line for six months by experts in OER design volunteering as mentors. Mentors are invited with a follow-up global call. During the project development, the progress is being regularly followed and advice is given if needed. Developers and mentors communicate online on a weekly (or bi-weekly) basis. There are also two interim checkpoints planned to provide information about the progress to the organizers of the program. At the end of the program, the participants are obliged to prepare a presentation for the final event. They are invited and supported to come to the closing event to attend a workshop on OER design, exchange ideas, meet other OER developers and establish potential future cooperation.

Openness: The program is open to all applicants regardless their professional background, education, origin or any other limiting factor. The scope and the final form of the developed OER
are not prescribed, nor is the platform to be used. This is to encourage participants to find the best solution for their target audience and their specific situation. The only request is the developed educational material to be publicly accessible and to be specified as such by using an appropriate open licence. There is no participation fee.

The OE4BW Model development process had the following steps: (1) designing a model, (2) testing the model through the first implementation, (3) analysing the results of the first implementation and improve the model, (4) testing the improved model with the second implementation, (5) analysing the results of the second implementation and adapting the model to be suitable for a long-term functioning on a global scale. In steps (3) and (5), feed-back was collected with two different questionnaires sent to the developers and to the mentors, respectively. Since the numbers were too small to receive statistically significant results, we complemented the analysis with several in-depth interviews.

We describe the process and the results in more detail in the following sections.

First OE4BW Implementation

The first OE4BW calls for developers and mentors respectively were launched in October 2017. Fourteen developers were chosen out of sixteen to be guided online towards the design and implementation of their openly available educational materials. The call attracted over forty mentors. The response was truly global, as we had developers and mentors from all around the globe, namely from Brazil, Canada, China, Ecuador, Ethiopia, Fiji, France, India, Italy, Kenya, Liberia, Nigeria, Malaysia, Malawi, Mauritius, Netherlands, Nigeria, North Macedonia, Peru, Romania, Slovenia, South Africa, Spain, Taiwan, United Kingdom, United States of America and Uzbekistan. There was no requirement for developed materials to be in English, so we were pleased to receive also a submission in Portuguese.

The proposed projects were in the field of public health, infrastructure, ICT, cultural heritage, education, statistics, comparative literature, language education, multiculturalism and library sciences, reflecting the diversity of developers’ expertise and background. The level of developers’ education was high. 6 of them had PhD, 7 MSc and 1 BSc. 8 of them came from educational institutions, while the others were from governmental sector, NGO and research institutes.

The application form required from the developers the information related to the maturity of their proposal. 4 were at the level of an idea only, 5 had an idea and the structure of the course, 3 had an idea, the structure and some materials, while 2 had a course already partially developed. We carried out a skype interview with all of them, and although the differences in their capacity for OER were noticeable, all but one explicitly mentioned the lack of capacity for building a broadly visible, ready-to-use open educational material.

The mentors were assigned to the developers based on identified needs in each particular case. After the mentors confirmed the choice, we connected them with their mentees and the project development took place from January to July 2018.

Results of the first implementation

In most of the projects, the initial idea presented in the application evolved into concrete educational materials. The developed materials were very relevant and in compliance with SDGs, covering titles like Booklets for midwifery developers in Low and Medium Resources Countries and Catalyzing Change: Diversity, Equity, and Inclusion in a Global Perspective, to mention just a few. Descriptions of all projects are available at http://oe4bw.ijs.si/projects/#2018. Results of all projects were presented at the final OE4BW workshop held in Vipava, Slovenia and recordings of all presentations are available at http://videolectures.net/educationdesign2018_vipava/.
In the final session of the workshop, there was a thoroughly prepared and professionally moderated discussion in which all participants exchanged their observations, challenges, suggestions and recommendations and thus contributed to evaluating and further developing the program. Additional feedback was collected with questionnaires and complemented with in-depth interviews with several developers and mentors for a subsequent analysis. The survey was carried out 6 months after the end of the programme. Two versions of questionnaires, one for mentors and one for developers, are presented in Appendix 1. Only the main facts revealed by the survey are presented below, so as to keep the focus on the contribution of the programme to capacity building of developers and on issues most relevant for the development of the programme. Please note that after presenting the results of particular parts of the investigation, a summary and an analysis of the results is given in a separate section, where partial results are compared and connected.

Results of the Questionnaire for Mentors in 2018

Eleven (11) out of twenty-seven (27) participating mentors responded to the questionnaire.

Results show that mentors were mainly satisfied with the program as the average grade was 7.7. They were also satisfied with the choice of their mentee as the average mark was 7.8. The scale was 1 to 10, where 1 represents the lowest mark and 10 represents the highest mark of satisfaction.

On average mentors agreed that their mentee’s OER project developed well and raised a reasonable level of maturity. Mentors mainly agreed that technical knowledge of mentees increased during the program. The majority of mentors also agreed that after the program their mentees would be capable of implementing new OER in the future, while this was not the case for most of them at the beginning of the programme.

Most of the mentors strongly agreed that it was rewarding to help a project for social benefit. Almost all of the respondents (90.9%) applied as mentors also for OE4BW 2019. All respondents stated they would recommend participation to their colleagues and friends.

Results of the Questionnaire for Developers in 2018

Seven (7) responses out of fourteen (14) participating developers were received.

The developers were mainly satisfied with the program as the average grade was 8.4. They were also mainly satisfied with the choice of their mentor as the average satisfaction mark was 8.14.

The majority of developers agreed that their technical knowledge increased during the OE4BW program. The majority strongly agreed that they felt more capable of implementing new OERs in the future after the OE4BW program (see Figure 3).

The majority of respondents (86%) had the opportunity to use what they learned from time to time and in their everyday work. All respondents recommended participation to their colleagues or friends.

Improvements introduced into the model for the second implementation

We carefully investigated the results of the survey and combined them with more concrete individual feedback provided at the closing event by developers and mentors. In particular, we investigated the cases were the outcome was not as expected. It turned out that in these cases, mentors were prepared to contribute more, but there was an issue of poor time-management or –in one case– even misunderstanding of the goals at the side of developers. We identified that we should have mechanisms for earlier detection of problems and for better expectation management. Consequently, we introduced some changes into the model of the program, complementing it in several aspects as follows:
Managing scaling-up through hubs: During the first implementation of the programme, the importance of programme coordinators being in touch with all development teams (developers with their mentors) has revealed. As also for programme coordinators this was a voluntary work on top of their regular duties, this was at the edge of our capacities and it would not be feasible to follow a higher number of teams with a sufficient attention to deal with time management issues and early detection of problems. Therefore, as the biggest novelty in the programme, hubs were introduced to enable a larger number of development teams being involved. Experts with experience in OER development and deployment were chosen to act as hub coordinators. They contributed to the promotion of the OE4BW program in their regional and professional “ecosystems”. When project development phase was in place, they regularly followed the progress. That way, it was easier to detect problems in time and to provide advice when needed. Based on the number of received applications, three hubs were established, one covering Africa and Europe, one covering Asia and Oceania, and one covering North and South America. Hubs were responsible for well-defined organisational tasks, while following the methodology developed by the initiators, and closely cooperating with them. Projects were allocated to hubs by the program initiators. Experience shows the advantages of international teams of authors and mentors, thus territorial principle was not the main criterion when choosing projects for hubs. After the hubs confirmed the projects allocated to them, they followed the steps of well-defined methodology through which they made sure that the developers and mentors were informed with the rules of the program. Also, they were checking the progress of each project regularly, provided additional information to developers and mentors if needed, informed the program initiators about the progress of the projects and communicated with them in the case of unpredicted problems.

Allocating mentors to projects: In the first implementation, the matching between developers and mentors was done based on the contents and needs of the projects only, while after experiencing some serious practical difficulties due to very different time zones, in the second implementation also this was taken into account. Still, we tried to keep the teams as international as possible, as there was a clear message from the first implementation, that having teams with members from different cultural environments was an added value. Consequently, teams were not always composed of a developer and a mentor coming from the regions belonging to the same hub. In addition, while in the first implementation each project had two mentors, in the second implementation we decided to start with one mentor for a project, and added an additional one only if there was an explicit need to do so. This was due to the fact that in the first implementation, some mentors were not satisfied with their role in a bigger team, where due to regional or topical proximity of the other mentor, they were not able to contribute as much as they expected.

Time management and implementation of OER: There was more focus on actually implementing OER, not just designing it. Having realized in the first implementation that the call was too open in a sense of expected results, this time we were more explicit about that. Since time management was a big problem in the first round of the program, we insisted on a more regular check points in order to detect problems in time and to help the developers to plan their work more realistically.

The call for second implementation was launched in October 2018. We received 40 submissions from candidate developers and fifty (50) submissions from potential mentors. 35 project applications were accepted to the program and allocated to the hubs. The countries from where applications on developers and mentors came, were the following: Bangladesh, Brazil, Canada, Fiji, France, Lebanon, India, Indonesia, Ireland, Italy, Malaysia, Mauritius, Netherlands, Nigeria, North Macedonia, Peru, Slovenia, South Africa, Sudan, Switzerland, United Kingdom, United States of America. Out of 35 accepted developers, there were 22 with PhD, 12 with MSc and 1 with BA. Again, there was a huge diversity in the field of their professional background, the prevailing one being education and pedagogy. The distribution of the initial capacity was slightly better, since 6 were at the level of an idea only, 17 had an idea and the structure of the course, 8 had an idea, the structure and some
materials, while 3 had a course already partially developed. Comparison of partially aggregated data about the capacities is visualized in Figure 3.

**Results of the second implementation**

In the second round, the percentage of projects finished with actually implemented online courses was much higher than in the first round. Many of them were even tested by up to hundred online learners already during the time planned for the implementation, so in their final presentations, developers reported also about the experience of the users of their online courses developed within OE4BW program.

Again, most of the developed projects finished with perfect examples of relevant OER prepared to empower broad audience for the implementation of SDGs, such as *Playwriting for Children: A Participative and Creative Approach*, *Supporting Refugees and Immigrant Students in Higher Education*, and many others. The reader is kindly invited to find more inspirational and instructive examples on the website [http://oe4bw.ijs.si/projects/#2019](http://oe4bw.ijs.si/projects/#2019) where all the projects are described.

Again, we collected feedback with questionnaires and interviews. In the continuation, we summarize the findings most important for the evaluation of the programme contribution and its further progress.

**Results of the Questionnaire for Mentors in 2019**

Thirty-two (32) out of forty (40) participating mentors responded to the questionnaire.

Their average grade of satisfaction with the programme was 7.75. They were also mainly satisfied with the choice of their mentee, the average satisfaction mark being 7.9.

Similarly to the results of the first round questionnaire, mentors agreed to a great extent that OER projects in the OE4BW programme developed well and raised a reasonable level of maturity. Mentors also mainly agreed that technical knowledge of mentees increased. The majority of mentors stated that after the program their mentees would be capable of implementing new OER in the future.

The majority agreed that it was rewarding to see the progress of their mentee and to help a project for social benefit. Almost all would like to apply as mentors for OE4BW program in 2020 and a quarter of them would like to contribute as a hub coordinator in the next round.

Mentors suggested to improve the OE4BW program by introducing more explicit guidelines, requirements, quality assurance and standards as well as an introduction webinar or kick-off meeting for the participants. Further, an interactive website as well as an OE4BW repository enabling communication with other participants was recommended.

**Results of the Questionnaire for Developers in 2019**

Thirty-one (31) responses out of thirty-five (35) developers were received.

The developers were mainly satisfied as the average grade was 8.6. They were mainly satisfied with the choice of their mentors, the average satisfaction mark was 8.12.

The majority of developers agreed that their technical knowledge increased and the majority agreed or strongly agreed that they felt more capable of implementing new OER in the future after the OE4BW program.

The majority would like to participate in OE4BW program in 2020 and have already recommended participation to their colleagues or friends.

Developers suggested to upgrade the OE4BW program by organising a community-building workshop or webinar at the beginning of the program and by establishing a virtual community to enable virtual meetings with all participants.
Analysis of results

As shown in the Figure 2, there was a big increase in the number of projects being developed in 2019 as compared with the first round in 2018.

![Participants 2018](image1)

![Participants 2019](image2)

*Figure 2: Number and regional distribution of developed projects showing the spread of the program in two subsequent years.*

When investigating the continuity between the first and second round of the project, we have found very different scenarios:

- some of the developers from the first OE4BW implementation were developers also in the second OE4BW implementation;
some of the developers from the first OE4BW implementation became mentors in the second OE4BW implementation;

- one developer and two mentors from the first OE4BW implementation became hub coordinators in the second OE4BW implementation;

- a good proportion of mentors from the first implementation applied to be a mentor also in the second implementation, although it was not possible to include all of them due to their specific professional profile and no projects in the respective field this year;

- one developer from the first OE4BW did not apply in the second implementation, but later we were informed that she asked her mentor from the first implementation to help her as she continued with the project (which the mentor accepted). Since this was outside OE4BW, it is not reflected in Figure 2.

Figure 3: Initial OER capacities of developers and their professional background in 2018 and 2019.

Initial level of the capacity of the developers in 2018 round was estimated based on the maturity level of their proposal in their applications. Out of 14 developers, 28% were at an initial state (idea only), 36% were at an intermediate state (idea and structure), and 36% at a higher state (idea, structure and materials). Out of 35 accepted developers in 2019, 17% stated were at an initial state (idea), 52% at an intermediate state (idea and structure) and 31% had idea, structure and materials. According to the application forms in both years, the majority of the developers (64% in 2018 and 63% in 2019 respectively) were engaged in education activities (teaching at University, College, Campus). 36% in 2018 and 37% in 2019 were working for governmental organisations, companies or were self-employed.

Figure 4: Results of OER development in 2018 and 2019 implementations of OE4BW programme.
Conclusion and guidelines for the future

The paper addresses the problem of building capacity to use, reuse and deploy OER and presents the OE4BW model of online mentoring as one of the ways for improvement in this area. In this programme, professionals of different background are guided by volunteering mentors as they upgrade their skills needed to design, implement and deploy OER by actually implementing their OER in a very personalized process of learning-by-doing. Through the two implementations, one in 2018 and one in 2019 respectively, the model of the programme has evolved and the progress in terms of increased technical knowledge of participants was evident. Nevertheless, further research will be needed to investigate and evaluate the impact that the OE4BW programme will have on teaching and learning for the participants of the programme, and to check its potential wider impact on the online mentoring in professional development in general.

The level of satisfaction was high by both, developers and mentors, but on average, as seen from the survey, developers were slightly more satisfied than mentors. While we will continue to offer the best possible opportunities to developers, this is an indication that more attention should be given also to the mentors’ point-of-view. In particular, in an open question asking for suggestions for improvements, mentors suggested to introduce more explicit guidelines, requirements, quality assurance and standards as well as an introduction webinar or kick-off meeting for the participants. Further, an interactive website as well as an OE4BW repository enabling communication with other participants was recommended. Similarly, the developers suggested the OE4BW program to be enhanced by organising a community-building workshop or webinar at the beginning of the program and by establishing a virtual community to enable virtual meetings with all participants.

We strongly agree with the abovementioned suggestions provided by OE4BW participants and will take them into account for the forthcoming rounds. This will definitely increase efficiency, since developers will be better prepared when they start working with mentors, and their time together will be better spent on more specific and advanced topics. In the next implementation, we will introduce an introductory online tutorial to be accomplished by all the applicants to the OE4BW program. There will be a tutorial for developers, providing basics of the open education design and answers to frequently asked questions before they enter the process. An Instructional Design Pack and more technical guidance as well as timeline with defined roles and expectations for all participating in the program might also be useful for developers joining the program. On the other hand, we intend to prepare also a short online tutorial with accumulated experience that might help new mentors entering the program, especially if they are just making their first steps towards
helping the others after becoming an experienced developer. Another idea is a webinar briefing for all the on-going projects together instead of individual consultations. Also, we might consider certification and digital credentials for achievements in the OE4BW program.

In the future, there might be hubs organized on regional, national or topical principles (e.g. Particular SDGs). A topical structure might bring a new quality, namely closer collaboration between developers within the hub, maybe also their projects to be merged or composed into bigger modules or collections of materials.

Let us conclude with the observation that participation in the OE4BW has brought not just very relevant OER for SDGs, but also a lot of personal satisfaction to everyone included. We are rewarded by seeing the results and we appreciate the opportunity to be “a part of this journey to openness”, as expressed by one of the mentors. We believe that firm foundations have been built for many more to join us in the future.

Acknowledgements

The authors acknowledge Jenni Hayman, Vasudha Kamat, Igor Lesko and Jayashree Shinde for their support to the program as hub coordinators. They have also contributed by providing strategic advice and guidelines to program development together with the other members of the advisory board, Tel Amiel, Larry Cooperman and Dominic Orr. Sincere thanks also to all mentors for their contribution to the success of the OE4BW program. Their names are accessible at http://oe4bw.ijs.si/mentors/. We also acknowledge Donatella Gubiani for her technical help with the questionnaires and Ana Fabjan (author of Figure 2) for her help with website design and visual materials presenting the program.

References


Appendix 1

OE4BW FOLLOW UP QUESTIONNAIRE FOR MENTORS

1. On a scale of 1–10, how satisfied were you with your participation in the OE4BW mentoring program? (Optional: Comments _____________________________)

2. On a scale of 1–10, how satisfied were you with the choice of your mentee? (Optional: Comments _____________________________)

3. How would you describe the communication with your mentee? (choose 1 answer)
   a. We communicated regularly, with a reasonable frequency.
   b. The mentee wanted us to communicate very often. I think he/she should be more independent.
   c. The mentee didn’t contact me as much as expected. I would like him/her to be more proactive.
   d. Other (please specify): ________________________

4. How would you describe the cooperation with your hub coordinator? (choose as many answers as you want)
   a. We communicated regularly, with a reasonable frequency.
   b. The mentee wanted us to communicate very often. I think he/she should be more independent.
   c. I think there was a lot of communication with hub coordinator and might be possible to reduce it in the future.
   d. Other (please specify): ________________________

5. How would you describe the progress of your mentee?
   a. His/her OER project in the OE4BW developed well and raised a reasonable level of maturity
      
      | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
      |----------------|-------|---------|----------|------------------|
      |                |       |         |          |                  |
    
   b. His/her technical knowledge increased
      
      | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
      |----------------|-------|---------|----------|------------------|
      |                |       |         |          |                  |
    
   c. After the program he/she should be more capable of implementing new OER in the future
      
      | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
      |----------------|-------|---------|----------|------------------|
      |                |       |         |          |                  |
    
   d. Other comments (optional): ____________________________

6. How would you describe connections established during the program? (choose as many answers as relevant)
   a. I believe I will stay in contact with my mentee, we might continue with the project or cooperate in another way.
   b. I would like to stay in contact with my hub coordinator and OE4BW organizers, we might establish new ways of cooperation.
   c. I would like to be connected to the whole OE4BW community to exchange information and ideas about potential cooperation.
   d. I don’t have any opinion on this, I will seek contacts if needed in the future.
   e. Other comments (optional) ____________________________
7. How would you describe your experience with OE4BW in more detail?
   a. It took more of my time than expected.
      
      | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
      |----------------|-------|---------|----------|------------------|
   
   b. It was rewarding to see the progress of the mentee.
      
      | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
      |----------------|-------|---------|----------|------------------|
   
   c. It was rewarding to help to a project for social benefit.
      
      | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
      |----------------|-------|---------|----------|------------------|

8. Will you like to participate in OE4BW 2020?
   a. Yes, I would like to be a mentor.
   b. Yes, I would like to contribute as a hub coordinator for projects from certain region or a certain topic.
   c. No, I don’t believe I will participate.
   d. I don’t know yet.

9. If you will not participate in OE4BW next year, what is the reason?
   a. I would like to, but can not due to time constraints or other personal reasons.
   b. I was disappointed last year.
   c. Other (please specify): _____________________________

10. Would you recommend participation to your colleagues or friends?
    a. Yes, I actually did.
    b. Yes, I would.
    c. No.

11. Given your experience, how would you improve the OE4BW mentoring program?
    _______________________________________________________________

12. How would you describe the existing opportunities to learn about Open Education?
    a. There are enough opportunities.
       
       | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
       |----------------|-------|---------|----------|------------------|
    
    b. I think that open on-line courses are sufficient to get this knowledge.
       
       | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
       |----------------|-------|---------|----------|------------------|
    
    c. I think that shorter certified courses are needed.
       
       | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
       |----------------|-------|---------|----------|------------------|
d. I think a Master’s program is needed.

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13. In the field of open education, I would like to get more knowledge about (choose as many answers as you want)
- a. Open education strategies and policies
- b. Effective didactical practices in open education
- c. Technologies for open education
- d. Business and organizational models of open education
- e. Production of educational materials
- f. Open education in industry and business (related to Human Resource Management)
- g. Other (please specify): ______________________________________

OE4BW FOLLOW UP QUESTIONNAIRE FOR DEVELOPERS

1. On a scale of 1–10, how satisfied were you with your participation in the OE4BW mentoring program? (Optional: Comments ______________________________________)

2. On a scale of 1–10, how satisfied were you with the choice of your mentors and the help you received from them? (Optional: Comments ______________________________________)

3. Did you achieve what you expected?
- a. I implemented my idea for OER as planned
- b. I partially implemented my idea for OER
- c. I did not achieve what I expected

4. What happened with the results of your project?
- a. Materials have been released as OER and are being used.
- b. Materials are ready to be used.
- c. Materials are not ready to be used, but development continues
- d. Materials are not ready, but further development is planned.
- e. Materials are not ready to be used and I don’t plan to continue

5. What did you benefit from OE4BW program?
- a. My technical knowledge increased
- b. After the program I feel more capable of implementing new OER in the future

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6. How would you describe the communication with your mentor? (choose 1 answer)
- a. We communicated regularly, with a reasonable frequency.
- b. I would like us to communicate more.
- c. I think there was a lot of communication with the mentor and might be possible to reduce in the future
- d. Other (please specify): ________________________

7. How would you describe communication with your hub coordinator?
- a. We communicated regularly, with a reasonable frequency.
- b. I would like us to communicate more.
c. I think there was a lot of communication with the mentor and might be possible to reduce in the future
d. Other (please specify): ________________________

8. How would you describe connections established during the program (choose as many answers as relevant)
  a. I believe that I will stay in contact with my mentor, we might continue with the project or cooperate in another way.
  b. I would like to stay in contact with my hub coordinator and OE4BW organizers, we might establish new ways of cooperation.
  c. I would like to be connected with the whole OE4BW community to exchange information and ideas about potential cooperation.
  d. I don’t have any opinion on this, I will seek contact if needed in the future.
  e. Other: ________________________

9. What are your expectations regarding what you have learned in the OE4BW program?
  a. I will use what I have learned in my everyday work.
  b. I will use what I have learned from time to time.
  c. I don’t see direct application of what I have learned at the moment, but it might be relevant in the future.
  d. I see no potential of using what I have learned.

10. Would you like to participate in OE4BW 2020?
  a. Yes, I would like to continue as a developer in this program.
  b. Yes, I would like to continue as a mentor.
  c. Yes, I would like to contribute as a hub coordinator for project from a certain region or a certain topic.
  d. No, I don’t believe I will participate.
  e. I don’t know yet.

11. If you will not apply / have not applied for OE4BW 2020, what is the reason?
  a. I would like to, but can not due to time constraints or other personal reasons.
  b. I was disappointed last year.
  c. Other (please specify): _____________________________

12. Would you recommend participation to your colleagues or friends?
  a. Yes, I actually did.
  b. Yes, I would.
  c. No.

13. Given your experience, how would you improve the OE4BW mentoring program?

14. How would you describe the existing opportunities to learn about Open Education?
  a. Yes, I would like to get a Master’s degree in Open Education.
  b. Yes, I’m interested in shorter, but certified life-long-learning courses.
  c. No, I already have formally recognized qualifications in open education.
  d. No, I only want to get knowledge, but I don’t need certificates.
  e. No, it is not relevant for me.

15. In the field of open education, I would like to get more knowledge about (choose as many answers as you want)
  a. Open education strategies and policies
  b. Effective didactical practices in open education
c. Technologies for open education
d. Business and organizational models of open education
e. Production of educational materials
f. Open education in industry and business (related to Human Resource Management)
g. Other (please specify): ______________________________
Building capabilities: Using MOOCs to make transitions in work

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Abstract

Our research explores the experience of adults looking for flexible online learning opportunities that intersect with university study. We interviewed 58 people living in 14 African countries who have taken a Massive Open Online Course (MOOC) developed by the University of Cape Town. The interview data reveals diverse uses of MOOCs in workplace contexts. While only two of those we interviewed articulated a goal of making a career change, there were many more taking a MOOC for some form of self-development within their current profession. There were also cases where people had not yet identified a new career, but believed the knowledge and skills would support future transitions. Our intentions for exploring the expectations of MOOC takers regionally is to improve our understanding of how universities, following open practices, could support the educational aspirations of this audience through the provision of flexible online learning opportunities.

Keywords: MOOCs, Africa, transitions in work, pathways, open online learning, capability theory

Introduction

We interviewed people who completed a Massive Open Online Course (MOOC) from the University of Cape Town (UCT) to explore how adults use open online education to assist them in responding to unpredictable career paths and unstable employment prospects (Castells, 2013). There is much reflection in higher education about how universities could be more responsive to people in work who cannot practically undertake postgraduate studies. Change and instability in world economies, which includes the impact of new technologies in the workplace and thinking around ‘the fourth industrial revolution’, arguably reflects a different employment landscape from that which graduates might have imagined (Penprase, 2018; World Economic Forum, 2016). Broadly, new skills, emerging technologies, role redundancy and competition have resulted in an expectation of continuous self-improvement during the working life of most adults. Working people feel they cannot rely on following traditional career pathways, and are required to improve their capacities and extend their knowledge throughout their careers (Hirschi, 2018); whether seeking opportunities for promotion or responding to changes. However, many working people find it challenging to practically undertake further studies. Universities have responded in a variety of ways, including offering open online courses. Here we focus on how people taking MOOCs have articulated these issues from their perspective.

Higher education narratives increasingly identify the importance of universities understanding and supporting transitioning pathways - in and out of learning and work - helping to improve the career readiness of graduates as well as offering opportunities for working adults in ongoing professional development. Castells (2017) argues that the key challenge for education is to offer people the ability to develop the ‘self-programmable ability’ (ibid, 62) to continuously acquire new skills, and to offer this education online to allow for flexible lifelong learning. Promisingly MOOCs, with their open enrolment in particular, seem like a possible vehicle for educational aspirations which may otherwise not be realisable through traditional higher education qualifications. Globally the literature has
identified upwardly mobile professionals as one of the most consistent consumer categories taking MOOCs for career progression (Zhenghao et al., 2015). For people living in developing countries, there are potentially even greater risks of obsolescence given the mobility of the global workforce and technology barriers (Garrido et al., 2016). The motivations for engaging in voluntary learning through MOOCs shows the strong drive for self-investment required in the new knowledge economy of the twenty-first century (Castells, 2013; Rizvi & Lingard, 2006).

Sub-Saharan Africa has the lowest participation in higher education globally and there are fewer highly rated institutions to meet the educational demand (Darvas, Gao, Shen & Bawany, 2017). One of the realities for students is that there is less choice to study locally and that there are high costs associated with studying elsewhere. We speculate that this regional context might inform the perceived value of MOOCs, especially those who were actively seeking low cost, low risk, flexible opportunities for professional development. Sometimes people may be purposefully acquiring new skills or knowledge towards a defined goal, while at other times, they may be investing or saving up skills and knowledge for future unknown purposes. Exploring the expectations of MOOC takers living in sub-Saharan African countries can help improve our understanding of how universities could support the educational aspirations of this regional audience through the provision of flexible online learning opportunities.

Our interest is understanding the needs of adults looking for flexible online learning opportunities that may intersect with university study. Our research project, “Perspectives from African MOOC takers: understanding transitions in and out of learning and work”, explores how people spoke about their experiences have taken MOOCs developed by UCT. This small qualitative research project seeks to contribute to improving the capacity of the institution to support postgraduate students in work and learning transitioning pathways (CHED, 2018).

We first briefly consider the roles of MOOCs within a higher education landscape before introducing the research question which is to understand which transitions MOOC takers are making.

**Higher education landscape**

Digital technologies promise to enable the development of new, more flexible course formats and allow for experimentation with modes of delivery. This has led to the exploration of an increasingly more diverse landscape of higher education provision. The representation in Figure 1 is of this landscape from a university’s perspective that expands the traditional course formats in the top left corner to others that are more flexible and less formal. Here provision is divided along three bands, namely, ‘formal’, ‘semi-formal’ and ‘non-formal’ (Czerniewicz, Deacon, Small, & Walji, 2014; Walji, Deacon, Small, & Czerniewicz, 2016). While some universities are starting to make use of MOOCs as part of mainstream credit-bearing courses, our institution has positioned MOOCs primarily as outward-facing semi-formal and non-formal offerings as illustrated in Figure 1. Given the large diverse enrolments and global access, MOOCs have been increasingly the subject of research (De Rosa, 2018; Fischer, 2014), but only a few studies have looked specifically at the experiences of MOOC takers living in Africa (Rambe & Moeti, 2017; Garrido et al., 2016).

Whereas students who register for degrees would have the explicit intention of completing a course for credit and could be described as ‘committed learners’, people engaging in MOOCs are better described as ‘volunteer learners’. These ‘volunteer learners’ may simply want to become more aware of new fields, develop certain skills, broaden knowledge or explore interdisciplinary opportunities. Their preference may be to learn for free or at low cost and without any consequences for not completing. This audience often includes people who may be on the margins of an intended career.
and not yet fully recognised professionally, and others may want to enrol at a university in the future, although most have some academic or work background (Glass, Shiokawa-Baklan & Saltarelli, 2016).

The MOOC Takers Research Project was initiated in 2017, extending over three years. A goal is to assess the broader value of MOOCs for people in the African region making transitions in their lives. Our initial analysis of the interviews was to characterise the perceived value of taking a MOOC in relation to transitions, where “transitions describe when people move between work and learning, between different disciplines of knowledge and between different levels of learning” (Walji, Deacon, Jawitz, Small, & Jaffer, 2018). We are specifically interested in what ways MOOCs are being used as opportunities for transitions in work for these learners. This contrasts with other MOOC related research which aims to ascertain how or what people learn (Veletsianos, Collier & Schneider, 2015), categorises original motivations and intentions (Maya-Jariego, Holgado, González-Tinoco, Castaño-Muñoz, & Punie, 2019) or which focuses on why people do not complete a course (Onah, Sinclair & Boyatt, 2014). Additionally, we wish to understand the expectations for open online courses offered by universities and the difficulties experienced with this type of learning in relation to widely held understandings around the needs of working people. The main question for this paper is: ‘in what ways do the African MOOC takers we interviewed use open online courses to support career transitions?’

**Literature Review**

There is a diverse literature investigating how people are seeking to make use of MOOCs to support change. An early focus involved speculation around how the MOOC phenomenon might help disrupt higher education (Yuan & Powell, 2013) and now increasingly there is a questioning of the more grandiose claims about the way MOOCs can meaningfully respond to persistent developmental challenges of the Global South (Adam, 2019; Czerniewicz et al., 2014). Underlying this are deeper concerns about the extent to which MOOCs are seen to continue to reproduce a neo-colonial approach to educational delivery (Adam, 2019) and reinforce academic elitism (Rambe & Moeti, 2017). Empirical evidence shows MOOCs overall tend to attract a particular type of participant who already possesses some level of education and who is using MOOCs to further personal or career goals (Steffens, 2015). This and other evidence suggests that while many MOOCs are open and free they appear limited in how they are achieving wider change. While this would support the broader critique of MOOCs, others pragmatically argue that for certain groups, MOOCs are being valued as learning opportunities. This has especially been seen among working people (Steffens, 2015) and those who are otherwise ‘educationally underserved’ which included a category of people defined
as those who would normally not be able to access such course content from elsewhere (Schmid, Manturuk, Simpkins, Goldwasser, & Whitfield, 2015). Universities have claimed a role here, even if this is comparatively limited and exploratory, given the larger societal challenges. This then has raised further questions in the literature about what has become valued and how might universities respond differently in the future.

While there is a growing body of research on learner motivation (Maya-Jariego et al., 2019; Watted & Barak, 2018; Glass et al., 2016; Howarth, D’Alessandro, Johnson, & White, 2016; Zhenghao et al., 2015), there is comparatively little research about what value they find (e.g., Garrido et al., 2016). In part this is hard to research since data would need to be collected some time after people had completed their MOOC studies. Research associating MOOCs and transitions thus has tended to focus on how universities respond to perceived needs of people in transitions in relation to market or industry-wide pressures (e.g., Clow, 2013; Howarth et al., 2016). When exploring the motivations of MOOC completers, Watted & Barak (2018) found three themes: ‘personal’, ‘educational’ and ‘career’ and they further explored granular categories among these themes which is useful for informing how MOOCs may be valued. A limitation of this research is that in looking at “preliminary motivations of MOOC completers according to their expected benefits”, their findings reveal potential rather than actual benefits (Watted & Barak, 2018).

The university transitions literature predominantly focuses on school leaving youth entering higher education (Coertjens, Brahm, Trautwein, & Lindblom-Ylänne, 2017; Gale & Parker 2014; O’Shea, 2014; Holmegaard, Madsen & Ulriksen, 2016; Grosemans & Kyndt, 2017) and those leaving university and entering work (Case, Marshall, McKenna, & Mogashana, 2018; Allen & Van der Velden, 2007). Since the contexts can be so diverse, there is understandably far less of a focus on the pathways involving people moving between careers, between work and learning, between different disciplines of knowledge and between different levels of learning. Such transitions are broadly described as life-course changes, turning points and branching points (Rönkä, Oravala & Pulkkinen, 2003) and focus on identifying events or opportunities that can result in people reassessing priorities or envisaging new options leading to life changes or seeking new career goals.

Literature from marketing and technology adoption has also been used to describe both MOOCs models and learners’ uptake. Clow (2013) and Howarth et al. (2016) use the metaphor of a funnel to illustrate the striking reduction in participation in MOOCs over time that much research has sought to explain. The dropoff in participation broadly reflects the commonly observed behavior of the MOOC mode (De Rosa, 2018; Eriksson, Adawi, & Stöhr, 2017). There have been several studies trying to understand who is most likely to persist in a MOOC. Maya-Jareigo et al. (2019) looked at a range of user behaviour profiles and motivations and found that those who were motivated to take the MOOC for work or as part of career development were one of the user groups more likely to succeed.

Like the Maya-Jareigo and colleagues’ study (2019), we argue that focussing on why learners drop out is only one part of the story and it tells us little about the diversity of learning purposes or the range of intentions. Our research probes how course completers are motivated to continue and make use of the opportunities for open learning to ‘reach valuable states of being’ (Walker & Unterhalter, 2007).

**Capability and the demands of the network society**

In this paper, we show how individuals we interviewed are actively responding to the opportunities and challenges they face to create their desired life. We draw on concepts from Sen’s capability theory (2005) to understand how individuals use education to pursue their aspirations (Walker,
2005; Rajapakse, 2016; Saito, 2003) and reference Castells’ Network Society (2013) which places demands on skilled workers to continuously renew and adapt to changing demands of the workplace (Muller, Cloete, & Schalkwyk, 2017).

The core ideas from Sen’s approach we draw on include the concepts of ‘functioning’ and ‘capabilities’. Here functioning describes an individual’s outcome or performance, while capabilities refer to the opportunities people have to enact this functioning and thus “having the freedom to choose a life they have reason to value” (Walker, 2005, p. 104). This conception shifts from seeing education as a human capital model of skills development for employment to a richer, inclusive view of human development for the benefit of individuals and society. Sen’s understanding of human agency is centred around the ‘capability’ or freedom to achieve the kind of life that is valued (ibid, 2005). For the MOOC model of education, the capability approach offers another way of considering how individuals become agents to advance their wellbeing, and to bring benefit to the society. This is not to deny inequality of opportunity between individuals or regions, but rather to suggest the provision of open education opportunities through MOOCs offers a different enabling environment which can increase individuals’ capabilities (Walker & Unterhalter, 2007). The capabilities approach emphasises the material and nonmaterial aspects of people’s lives which will influence their ability to experience that freedom to choose. The MOOC takers we interviewed described material challenges such as costs of data, access to connectivity and personal circumstances which may be different from the challenges of people living in highly developed countries. Yet despite these challenges, the individuals we interviewed were able to persist in completing the courses because they perceived personal value.

When looking at education aimed at professionals, the focus tends to be on ways of providing in-demand new skills to remain competitive (Hirschi, 2018). Castells’ analysis of the ICT-enhanced workplace identifies the need for workers’ continuous upskilling, as well as developing individual attributes of self-reliance and independence. Castells (Muller et al., 2017) comments on the increasing polarisation in the globalised economy where, to a growing extent, high value employment is only available to a small group of highly skilled, educated information workers. Africa is cast as one of the marginalised, structurally excluded parts of the global economy. Those interviewed did not speak directly to these experiences of work. A likely explanation is that since many of the individuals were graduates they demonstrated ‘networker’ behaviour intent on building their capacity to respond to the changing work environment (Muller et al., 2017). But in addition, the language used by many of the MOOC takers expressed strong socially responsive sentiments. One of the courses, the Becoming a Changemaker MOOC, discussed later, provides a bias towards people seeking more socially meaningful engagements, but even with other course topics, such as a medical statistics MOOC there are doctors and scientists striving for social goals as well as career advancement.

**Interviews with working MOOC takers**

For this study we interviewed those who had completed a MOOC created by UCT and were living in an African country. While MOOC completers represent a small proportion of those who had enrolled, we deliberately selected those people who had been able to complete a course and thus were best able to inform the research question. This purposive sampling strategy involved first identifying completers through the MOOC platform and then sending invitations to those meeting the selection criteria to be interviewed via email. This sampling approach led to 58 semi-structured interviews being completed in 2018. Most of these interviewers were conducted telephonically, lasting between fifteen and thirty minutes. Each audio recording was transcribed and coded using NVivo for broad themes we had identified from the literature. Each interview started with asking learners who they
were, what they did, and their challenges when taking the MOOC. We included questions about what value they saw for their work or future studies. One of our interests, being a South African university, was to understand the needs of potential students in the region.

There was an even gender balance and a total of 14 African countries represented, eight of these within the southern African region. Given our interviewees were sourced from MOOCs created by a South African university, as expected the majority of interviews (68%) were with people currently living in South Africa. The largest single group, representing 37% of the total, were employed and in the age range from 25 to 44. Of the 58 participants, 41 were involved some form of work transition, and these 41 interviews form the basis of the data analysed for this paper. A high proportion of the interviewees also had university qualifications. It was interesting that these demographics roughly mirror overall enrolment patterns for MOOCs globally (Glass et al., 2016).

While eight of UCT’s MOOCs were mentioned in the interviews, 39 of the 58 interviewees had taken one of three courses. These three courses have been running longest and deal with topics which appeal to a range of interests. As with the other UCT MOOCs, the course content was chosen by the academics and was not specifically commissioned or institutionally identified as in-demand skills for the continent. To illustrate the issues, in our discussion for this paper, we have selected eight individual interviews (see Table 1) to represent some common themes we identified across all 41 of the interviews which we categorised as relating to work transitions.

All the courses discussed here are hosted on Coursera, an international MOOC platform with whom UCT has partnered. Building on earlier work done identifying transitions (Walji et al., 2018), we have suggested three categories of transitions related to career domains:

- Individuals taking a MOOC with a clearly articulated goal of making a career change (‘Work-to-work’).
- Those taking a MOOC for general improvement within their current profession (‘Work-in-work’).
- Involving an investment where people had not yet identified a new career but articulated a future possible need to make a change (‘Work banking’).

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Country</th>
<th>Age</th>
<th>Work transition category</th>
<th>MOOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sadhvi</td>
<td>Mauritius</td>
<td>25-34</td>
<td>Work-to-work</td>
<td>Becoming a Changemaker</td>
</tr>
<tr>
<td>Ronda</td>
<td>South Africa</td>
<td>35-44</td>
<td>Work-to-work</td>
<td>Becoming a Changemaker</td>
</tr>
<tr>
<td>Charlotte</td>
<td>South Africa</td>
<td>35-44</td>
<td>Work-in-work</td>
<td>Becoming a Changemaker</td>
</tr>
<tr>
<td>Tshepo</td>
<td>Lesotho</td>
<td>35-44</td>
<td>Work-in-work</td>
<td>Understanding Clinical Research</td>
</tr>
<tr>
<td>Vanda</td>
<td>South Africa</td>
<td>35-44</td>
<td>Work-in-work</td>
<td>Understanding Clinical Research</td>
</tr>
<tr>
<td>Lemba</td>
<td>South Africa</td>
<td>35-44</td>
<td>Work-in-work</td>
<td>Climate Change Mitigation</td>
</tr>
<tr>
<td>Ama</td>
<td>Ghana</td>
<td>25-34</td>
<td>Work-in-work</td>
<td>Understanding Clinical Research</td>
</tr>
<tr>
<td>Lucy</td>
<td>Botswana</td>
<td>45-54</td>
<td>Work banking</td>
<td>Understanding Clinical Research</td>
</tr>
</tbody>
</table>

(Note: Interview participants’ actual names have been changed to pseudonyms)

In the discussion below we look at the three transitions we identified, but the main focus will be to analytically unpack the most prevalent category - the ‘work-in-work’ transition category.

*Open Praxis*, vol. 11 issue 4, October–December 2019, pp. 427–441
Making work-to-work transitions

The MOOC platforms’ marketing campaigns typically use the conception of a career transition. Examples from Coursera’s website include “we’ll help you master the skills employers are looking for” and “anyone, anywhere can transform their life” (Coursera mission statement). The intention is likely to inspire and motivate (or ‘sell’) MOOCs as providing a potentially transformative or life changing experience. The platforms create archetypes of potential learners to target for MOOC enrolments, and the ‘career builders’ (Coursera: https://about.coursera.org) or ‘advancers’ (FutureLearn: https://www.futurelearn.com/about-futurelearn) are identified as the most lucrative market since these people are the most likely to pay for a certificate.

Those people who start a new career after taking a MOOC, whether it is entering a new workplace or career or changing fields within a career, are associated with the work-to-work transition. Since this is seen as a very positive outcome such a transition is often given prominence in marketing material of MOOC platforms. This type of transition may be associated with the changing demands of the contemporary workplace (e.g. Grosemans & Kyndt, 2017) and suggests the existence of an educational market for new and ‘just-in-time’ learning and it is unsurprising that this is the profile that the MOOC platforms are targeting. The drive to continually adapt and ‘reinvent’ oneself professionally is a global workplace trend that the MOOC takers living in Africa also experience. In our study however, only a few individuals described making an actual career change, which is unsurprising given the UCT MOOC topics are not directly concerned with preparing for new careers. We identified only two people from the career related interviews as explicitly linking an active career change to taking a UCT MOOC.

Sadhvi, from Mauritius with a degree in chemistry, identified her career change most explicitly. She described her experience:

I started working in a lab and I realised that I didn't really like it. So I decided to have a career change and that's when I started following MOOCs.

She completed the Becoming a Changemaker course that encourages entrepreneurial thinking while looking for a new career. She explains that even though it was a short programme, it helped her gain confidence in a new field:

it was a key factor in the turning of my career... doing these courses and acquiring these new skills and exploring these new fields that I hadn't previously studied, because I did come from a very technical background.

Sadhvi also spoke about signaling her new interests and ability to make changes.

For me to be able to put that [MOOC certificate] on my CV, because I was changing careers and I did need something tangible to show to potential employers.

Seen through a capability approach lens (Sen, 2005), Sadhvi expressed her motivation for changing careers to create more meaningful work experiences that she can have “reason to value” (Walker, 2005):

Yes, so when I decided to have the career change, I asked myself, well, what is it that really ... motivates me and what is [it] that I’m really passionate about? And I realised that it was contributing to some sort of development in order ... you know, and not to have just existed. To leave the place, to leave the planet Earth in a better state than I found it, in some sense, like it is to make an impact. And I started Googling things to do and I also had the idea of doing online courses.
The premise of the *Becoming a Changemaker* course is to offer tools ‘for everyone who wants to make a difference’ and particularly attracts people like Sadhvi who are seeking the ‘real opportunity’ to accomplish what they value (Walker, 2015). In Sadhvi’s case the capability became active functioning in the new career.

*Ronda*, a 35-44 year old working woman from Kenya, was currently enrolled in a formal degree programme at a university in South Africa and also took the *Becoming a changemaker* MOOC. The MOOC did not relate to her current career or current studies, but she expressed a longing to make fundamental changes to her current life and work trajectory:

> I have a passion, yes, I have a goal, I am not just taking MOOCs for the sake of them. I have a goal, and my goal is to maybe launch my social venture.

She gives expression to Sen’s idea of the importance of education giving people the freedom to choose the life they want (Walker, 2015):

> So yes... to be very honest, after I leave this place, I think I am equipped, and if I choose to quit my job, I won’t have to struggle where I should begin.

At the time of the interview, Ronda was studying as part of her professional development, and she expressed an end goal of being able to realise her ‘passion’ to launch a social venture as well as various interim options such as enrolling for postgraduate studies or quitting her current job.

The discourse of these individuals shows their strong personal motivation and agency in making different choices about their lives (Walker, 2005, describing Sen). Many of the interviews were talking about their purpose or goals in life; for example, Ronda saying “I have a passion, yes, I have a goal” which may be linked to their career, but often not only for extrinsic professional rewards. The type of flexible, low stakes, self-directed learning offered by MOOCs gives individuals an accessible way to make concrete steps towards achieving ‘valuable functionings’ (Sen, 2005; Walker, 2015).

We are not suggesting a causal relation between taking a short MOOC and these people making major career-related changes. Rather what appears noteworthy is that they spoke specifically about how motivational taking the MOOC was in this period of change. This suggests that these courses were supporting individuals make a transition in some way that may not be available to them from elsewhere. While many factors would influence someone’s ability to enact a radical re-invention of their professional identity, such as Sadhvi moving from being employed as a lab-based chemist to getting a job as a social entrepreneur, taking the MOOC to acquire skills, become familiar with a new discourse and build personal self-confidence speaks to a high degree of personal agency (Unterhalter, Vaughan, & Walker, 2007). We argue MOOCs appear to offer highly motivated individuals opportunities to support their impetus to take a new direction. Further, in the African context, we suggest that MOOCs provide a useful resource for those who want to explore making changes to their lives, but are not currently well positioned to bring about the change they want. The flexibility of the online format, manageable workload, low cost and lack of barriers to entry have particular appeal to professionals who may be restricted by location (distance from formal educational institutions) or time (being fully employed) thus representing a form of marginalisation. In adult learners and professional development literature (Field, 2012), it is almost always necessary for people to maintain current commitments while seeking alternative futures. Indeed, interviewees spoke about MOOCs in general and how they saw this model of learning as offering something different from other traditional learning opportunities.

In the developed world and more resource-rich environments, there may be a range of resources for this ‘exploring new options’ phase of life - through professional networks, public events and talks, semi-formal professional development seminars and workshops, as well as a wide choice of...
formal and part time formal study options. For our participants and other ‘educationally underserved’ constituencies (Schmid et al., 2015), there were fewer opportunities. People living in rural areas, small towns or more marginal cities are unlikely to have access to this range of inputs for exploring making career or life changes. Despite the recognised limitations of MOOCs, they are offering some adult professional learners greater freedom to choose and opportunities to build ‘valuable functioning’ which allows people to ‘accomplish what they value’ (Walker, 2015).

Work-in-work transition

By far the largest group of people interviewed were classified as focused on ‘work-in-work’ transitions. In these cases, the individuals were employed and took the MOOC to address specific needs they faced in their everyday work. For the ‘work-in-work’ transition four sub-categories emerged allowing us to unpack the range of self-directed career development expressed in the interviews.

We identified two broad trajectories of change within the work-in-work category. The first describes those pursuing the development of vertical knowledge or experience which relates to domain knowledge whereby someone engages in in-depth learning or has increasing mastery of a skill. Interviewees expressed this as ranging from refreshing prior learning to improving their current practices through deepening their knowledge, skills or capacities. The second trajectory emerged from identifying people who were pursuing horizontal knowledge or growth or attempting to progress by choosing to learn something new or through expanding their knowledge. Illustrative practices in this trajectory included people equipping themselves to perform a new function or shifting into a new responsibility. While no person is strictly a vertical or horizontal learner, the interviews suggested some emphasis on either a horizontal or vertical trajectory in their expressed motivation for doing the course. Figure 2 illustrates these four sub-constructs in a horizontal and vertical plane.

Equipping

Charlotte worked in community health for many years and was recently employed as a lecturer at a university and started her PhD studies. Soon after making this career change she took the Becoming a Changemaker course as it resonated with her interest in community projects:

I found the course, just all about how to implement projects or do things where you don’t have a lot of resources and just try to find different ways of doing. … I work in situations and contexts with students [with whom I] can also share some of those principles in terms of community nutrition and health projects.
While the topics in the Becoming a Changemaker course were not new to her, she valued the examples, methods and resources relating to a resource constrained environment which equipped her for improving and expanding her practice.

**Deepening**

The UCT MOOCs described here were not explicitly conceived to address workplace skills; rather they are broader introductions sharing perspectives from experts in the field. Our interviews are with those who had found some value in these perspectives in their workplace context, likely building upon their own academic qualifications. The category of those seeking to deepen their understanding thus might include someone working as a doctor whose training had an introduction to statistical methods but they now needed to go more in depth as they become more interested in medical research. In the diagram this is represented as a vertical shift as those interviewed are not discussing changing career but rather informing or deepening what they do currently.

Tshepo, from Lesotho, is in full time employment as a data analyst in the health sector. He completed the Understanding Clinical Research MOOC, obtained the certificate and displayed it on his social media profile. His motivation for taking the MOOC was professional development and to help him better apply his skills in the professional domain he finds himself:

> [M]y concentration on MOOCs would have been more on data science but I work in a clinical environment, I work with TB and HIV data. So, considering that my background is more on computing, I wanted something that could bridge the gap between my background and what I currently do. So I wanted to have a better understanding of the clinical scenario as far as data analysis and research is concerned. So, I thought the course is befitting.

Tshepo emphasised his need to keep abreast of new skills and developments in the professional sectors:

So I take massive online courses just as a way to bridge any knowledge gaps I may have and put myself in a competitive position in as far as new tools count.

Interestingly Tshepo used the language of the job market, demonstrates awareness of the likelihood of change and the importance of self-investment to remain competitive:

> Also, I believe the courses may be very useful with new job openings, should I want to move jobs.

**Refreshing**

This category is, like deepening, on the vertical trajectory of a transition whereby the learning experience enables revising or refreshing of previous or current knowledge or learning.

Vanda works as a medical assistant for a large international medical NGO in South Africa and is registered for an online Masters degree. She took the MOOC, Understanding Clinical Research because her job involves doing some research and she felt she needed to ‘brush-up’ her skills. In an earlier degree she had studied medical statistics but has not applied that knowledge:

> ...because of my job we have to do some research and ... I have not done much on research for so long. ... So, I wanted to attain those skills as well as to remind myself of which strategical tests should I be doing ... So, I needed to enhance my career, the knowledge in my career as well as to develop myself.
Vanda was one of several people interviewed who talked about why getting a certificate for a MOOC was worthwhile, even when this lacks formal credit value. She articulates that completing a MOOC can signal qualities such as working independently, self-motivation, time management and persistence which are valourised in corporate environments, and represent the ideal self-programmable worker of the new economy (Muller et al., 2017). The extra effort of completing a MOOC (when the majority of participants do not) is usually linked to someone’s vision for their future career, even if the exact goal is not yet clearly held. Vanda believes success in the MOOC (independent of the domain area skills) showcases her functionings:

I felt it was important to study online, it’s very difficult because you have to manage your time as well as nobody is supervising you. For example, I was not supervised but it shows that someone has commitment to complete the task without being supervised. So, it’s also showing that someone is self-motivated.... But if you are able to take an initiative to say that I want to acquire knowledge, to acquire a skill on this. That is the reason that I will put it on my CV… It may be that I’m saying that.

The Climate Change Mitigation course attracted several professionals who saw the importance of acquiring knowledge and discourse on an urgent issue which was impacting on their work contexts. Given the rise in awareness about climate change, many professionals working in technical fields expressed the need to ‘refresh’ their knowledge or gain familiarity with the concepts in order to have conversations around this topic. Lemba is a South African mining engineer who had moved into consulting and took Climate Change Mitigation to refresh his knowledge on climate change impacts. He also did the course in preparation for enrolling for a formal masters in environmental management:

I took it for a refresher course of what I already know about mining and environment and health and safety. And then the issue of climate change, of which mining contributes a really significant impact to greenhouse gasses. So, I just needed to know what is happening, fresh in the industry and for those that are specializing in the climate change.

Shifting

Some people were considering making shifts in their career and had taken MOOCs as a way to explore these possibilities. These include someone who through developing additional skills imagines a different role and eventually career. An example might be a doctor working in a clinic who would want to be involved in clinical research, even if this were a small part of their responsibilities initially. In Figure 2 this is represented as a horizontal move as there is a possibility of change over time in their career.

Ama, a Ghanaian medical doctor, also took Understanding Clinical Research because of his interest in developing the research aspect of his profession:

I also have a career mission of going into clinical research work. You know so I can both help my career progression and can also help my client.

He paid for a certificate because he believes the evidence of taking the MOOC might improve his future competitiveness for work opportunities:

... if there’s a future career opening and you want to let them know that you have taken this course and you have that understanding or the requirement of the field that you have to take this. I believe that it can prove very beneficial in confirming that really, you’ve taken the course…
Viewed through the capability approach lens, equipping, deepening, refreshing and shifting are work-in-work transitions that can be construed as the development of capabilities that for particular contexts are turning into functionings.

**Work banking**

Our analysis found some people taking MOOCs for an undetermined future use rather than for immediate application. They are committed to learning the skills, completing the course and purchasing the certificate because they believed the course would enhance their future career opportunities. MOOCs attracts this kind of ‘investment’ behaviour because of the low barrier to entry and the lack of consequences for dropping-out.

*Lucy* working in Botswana had taken many MOOCs and had purchased a certificate for Understanding Clinical Research which she intended to add to her CV, reasoning:

> I think it’s for people to see that ... you’re quite active and you are proactive in trying to continually upgrade and stay on top of things and stay on top of advancements in the field and relevant fields that I am in.

While Lucy was fully employed, she clearly expressed her consciousness of the need to keep updating her skills for future employability. We conceptualised this work banking as a transition akin to self-investment; using a capability approach this can be considered the acquiring of a capability which is yet to be converted to a functioning (Walker, 2015).

**Conclusion**

Our research focused on how working people saw themselves using MOOCs to make transitions in the workplace. These lived workplace learning experiences are often invisible to those within universities creating the courses even as they seek to engage people accessing open learning opportunities. We conceptualised transitions broadly to include those changes which occur as people take action to move within and between work roles and careers. The 41 interviews included people in a diverse range of work contexts. Through their motivation and intentions, these MOOC takers appear to be reflecting many of the wider expectations for constantly ‘re-programming skills’ (Castells, 2017) while working, which we argued are a feature of the changing economic and technological context. This diversity can make it difficult for institutions to create courses and pathways that respond to the needs of people who want to make transitions in work.

Our context is arguably narrowly looking at a small group of highly motivated learners, a specific portfolio of MOOCs and a continental region in which the value of accessible online learning opportunities is contested. Yet what emerged are learning needs that are likely otherwise poorly served by higher education. Understanding how people value MOOCs can provide insights about expectations of universities in supporting the development of people’s personal and professional capabilities. We have proposed a tentative framework for understanding the nature of work transitions people are describing when they relate their purpose in taking MOOCs, which helps to illuminate our original question about the use of MOOCs to support transitions. The development of capability to take action to create personal value is evident in many of the interview discourses - the MOOC takers articulate the agential capacity to acquire functionings. While our study cannot be considered representative of the African context due to the relatively small dataset, there is evidence of value gained from learning in MOOCs expressed by the individuals who responded to the interviews. We believe that MOOCs can offer value, particularly by underserved constituencies, “not to replace formal
education but to supplement existing formal educational or professional development programs” (Schmid et al., 2015, p. 127). Given the limitations of formal education provision, particularly in under-resourced regions, we hope there will be further research into ways for universities to use open education to build the opportunities for the development of individual and societal capacities.

Despite a considerable number of barriers (which we do not discuss in this paper), the successful MOOC takers were active about deploying the opportunities in open online learning to construct their desired current and future work environments. How to apply this understanding to better provide for working people through the creation of more flexible and enabling online education will need further investigation, but there were clearly expressed needs. As Tshepo elaborated:

For me they [online degrees] are the future... But for us who are fully employed, you wouldn’t have time to go to school every day, but with the MOOCs, you are able to sit at your place and learn and acquire new skills. So they have been of great importance.

And to give him the last word, Lemba asserted that ‘online is actually for those that are really ready to succeed in life’.

Acknowledgements

This research was funded by the CHED Faculty Research Committee. We wish to thank Nchangwi Munung who conducted most of the interviews that were used in this research and Soraya Lester who continued in this role.

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Building capabilities: Using MOOCs to make transitions in work


Open Pedagogy through Community-Directed, Student-led partnerships: Establishing CURE (Community-University Research Exchange) at Temple University Libraries

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Abstract
This paper reports on the establishment of an open pedagogy initiative between community organisations and students, facilitated by the Temple University Libraries (TUL) and faculty in the Philadelphia area. The Community-University Research Exchange (CURE) produces community-driven social justice research. Library facilitators solicit research questions and project proposals from grassroots community organisations who experience social and economic marginalisation, limiting or even disallowing the access to information that is vital to innovating the services organisations provide. Students select from a bank of research projects, developed by community organisations, identifying issues that they wish to investigate, skillsets they hope to master, or organisations for whom they hope to contribute their intellectual labour. This project facilitates community organisations' direction and autonomy in promoting beneficial research objectives. It also foregrounds students as the directors of their own knowledge output and learning. This project is modeled after the Quebec Public Interest Research Group’s (QPIRG) programme.

Keywords: Open Pedagogy, Community-Driven Research, Undergraduate Students, Community Organisations, Academic Libraries, Community-Engaged Learning

Introduction
This paper reports on the ongoing effort to establish the inaugural cohort of an open pedagogy initiative between community organisations and students, facilitated by the Temple University Libraries (TUL) and faculty in the Philadelphia area. While this project is coordinated by Temple University Libraries, it facilitates community organisations’ direction and autonomy in promoting research objectives that are beneficial to their own initiatives, projects, and strategic goals. It also foregrounds students as the directors of their own knowledge output and learning. The TUL project is modeled after the Quebec Public Interest Research Group’s (QPIRG) long term programme CURE, the Community-University Research Exchange. While this paper does not explore the results of the inaugural cohort, we hope to share details of our activities in the future. This paper highlights the planning stages and development of this project as well as the underlying philosophy of CURE as it relates to libraries and the openness movement. In this article, we will outline the cornerstones of our vision for grassroots community-driven research and advocate for academic libraries’ central role in this undertaking.

History of Openness Initiatives at Temple University Libraries
Early discussions about openness at Temple University focused almost entirely on issues related to affordable learning materials and the adoption of open textbooks. Temple University is the major public university in Philadelphia and is situated in North Philadelphia with an undergraduate enrollment of just under 30,000 students. Of students from Pennsylvania, 33.6% are from Philadelphia County, a county where in 2014 over 80% of students were eligible for reduced or free lunch (PEW Charitable Trusts, 2015). In 2017, our students received over $300 million in scholarships, grants, and self-help
The original research project found that most instructors were motivated by the prospect of saving students money, rather than more philosophical concepts of open knowledge. In the past year, TAP was overhauled to acknowledge instructors who created original and open learning objects for their courses. This revamping of the TAP initiative and the establishment of a steering team to address current trends and challenges related to scholarly communications, have shifted the Temple Libraries' focus from a simple effort to make learning materials more affordable to a more holistic approach of open education and student success.

An exploration of openness as the concept that animates this project is warranted. We think of openness as a critical lens for questioning the information ecosystem and producing key interventions that collapse barriers between academia and community. Openness cannot be siloed into Open Access, Open Education, or Open Data, it is an all-inclusive ethic that considers people as whole complex beings, informing every aspect of the education and research process. One such facet of our intervention with this project is to incorporate the idea in open pedagogy that views students as engaged holistic actors with complex sets of needs and interests (hooks, 1994). Extending the work of Rajiv Jhangiani and Robin DeRosa on open pedagogy and social justice, which considers how open education can recenter learning away from what Freire called the banking model of education (one that takes a top-down approach relying simply on depositing material into a passive subject: the learner) (Jhangiani & DeRosa, 2017), we have undertaken this project to generate learning opportunities that agentivise students. Secondly, and very much intersecting with the first facet, openness means targeting the insularity of the academic institution vis-a-vis the communities where we find ourselves. Third, in response to the same trend that has commodified education and privatised scholars’ research outputs, information professionals are acutely aware and hard at work to find alternatives to the neoliberal university model. For this reason, as we explore below, the TUL CURE initiative takes advantage of existing library expertise and the role of the library in the community to...
bring community-engaged research into the framework of open education. Specifically, the values of openness enable us to critically respond to the critiques of community-engaged learning.

It is worthwhile to interrogate the similarities and differences between community-driven research, such as CURE, from popular, institutionally sanctioned, top-down programmatic efforts that are widely labeled in higher education as community-engaged learning or service-learning. The National Youth Leadership Council defines service-learning as “an approach to teaching and learning in which students use academic knowledge and skills to address genuine community needs” (NYLC, n.d.). While initially aimed at responding to the rise of the neoliberal university, scholars and practitioners of community-university partnerships have themselves recognised that such initiatives have “adopted academic capitalist behaviors to make up for lost funding, manage the partnership, and balance the needs of all stakeholders” (Brackmann, 2015, p. 139). Moreover, the implementation of community-engaged learning has often reemphasized the banking model of education and fallen prey to not adequately prioritizing the needs of communities (Marullo, Moayedi, & Cooke, 2009). While often maintaining ideals and rhetoric about community engagement, these initiatives have prioritized building experiences relevant for students in a competitive job market, often settled for short-term impacts in the communities where students are placed, and are sometimes established as requirements for graduation. Effectively, in practice, the community is often leveraged by the university to enhance and distinguish the campus experience for students and marketed to attract new students and donors.

Community-driven research, by contrast, emphasizes horizontal relationships with local communities in order to establish long-term, targeted and meaningful partnerships with research needs being directed by the community organisations and responding to their strategic objectives (Marullo et al., 2009; Dixon, Higgins, & Singh, 2011). Bringing the well-intentioned ideals of community-engaged learning into open pedagogy enables a more critically engaged approach to community-university partnerships, which we understand as needing to be aimed at recognizing and attending to power imbalances in these relationships. Temple University Libraries, like many academic libraries at public universities, are ideally placed to facilitate research partnerships between the community and the university for three primary reasons: (1) libraries are often the hub of openness initiatives on campuses, (2) they have existing relationships with community organisations through community-focused archival collecting areas like special collections, and programmatic and librarian commitments with the community, and (3) they serve as a vector for teaching undergraduates about the research lifecycle and information literacy.

Community-University Research Exchange (CURE)

CURE produces community-driven social justice research. In this project, the CURE team at the Temple University Libraries solicits research questions and project proposals from grassroots community organisations who experience social and economic marginalisation limiting or even disallowing the access to information that is vital to innovating the services organisations provide. Moreover, human resources, funding, and time to dedicate to undertaking research activities is another major barrier. Community-directed research questions are made available for students to browse on a dedicated webpage. Students select from a bank of research projects, identifying issues that they wish to investigate, skillsets they hope to master, or organisations for who they hope to contribute their intellectual labour. CURE enables students to choose projects that are not only appropriate to their field(s) of study, but also relate to their personal commitments or interests, and build on existing community engagements. We envision that many students participating in CURE do so for their honours thesis, independent study, or term papers - all for credit.
Once the student picks a project, the library serves as a liaison between the community organisation, student, and faculty member to construct an agreement that encapsulates the project needs as outlined by the community organisation and the project’s breadth and goals as determined by the student. This process takes place in consultation with the pedagogical goals outlined by the faculty member. This agreement also serves as a rubric for evaluating the student’s effectiveness in responding to the organisation’s needs. In this agreement, the student can also choose a Creative Commons License best suited to their individual ideals encouraging the wide distribution of their work to the community organisation and beyond.

One way that we have modified CURE in adopting it at Temple University is by housing it within the library. Informational professionals are aptly positioned to take on CURE as we elaborate on below. Also, for the library, CURE provides an opportunity to advance and strengthen direct conversations with faculty and students on openness in the information lifecycle.

**Public Interest Research Groups (PIRGS)**

The first iteration of the CURE Programme was established in Quebec and was facilitated by the Quebec Public Interest Research Groups at Concordia and McGill Universities. Public Interest Research Groups (PIRGS) are campus organisations throughout the United States and Canada conceived of during the war in Vietnam by political activist, Ralph Nader. Today PIRGS function quite differently in the United States and Canada, with the former favouring a legislatively-oriented lobbying approach and the latter opting to directly support and engage in grassroots community organising (PIRG, 2019). PIRGS in the United States are involved in the openness movement through their work with textbook affordability (“Make Textbooks Affordable”: https://studentpirgs.org/campaigns/make-textbooks-affordable/).

Projects undertaken by Montreal university students have involved producing research to help organisations that train childcare providers add bodily consent to their core training programmes. This work involved students producing a report that became integral to incorporating this module into existing programmes. Another CURE project involved interviewing women and transfolk who had made use of shelters to help create guides providing vital information on the types of documentation required by each shelter. This project required the student to interview, transcribe, and create a resource guide for those requiring shelter services. Projects do not always take the form of traditional papers, they can range in medium from audio-visual projects, to digital humanities projects, to resource guides.

**Establishing CURE at Temple University Libraries**

Our engagement with this project at Temple University Libraries emerged from one of the author’s previous work with QPIRG McGill. In reflecting on the author’s experiences, we saw an opportunity to build on the existing TUL openness projects by developing our own CURE initiative. We identified the library as a natural partner in establishing a similar programme at Temple University and in the North Philadelphia community. Given that a core component of the CURE initiative is to make information and research services more accessible to community organisations, we see the already present resources of the library as instrumental in realising the mission of CURE.

Openness is both the social and political philosophy that grounds CURE and the framework that animates its practical applications. CURE is designed as a pedagogical tool that calls upon all project stakeholders to directly grapple with components of openness in the process of reaching a consensus towards reorienting relationships between those who traditionally benefit from and those who are
exploited in producing knowledge. CURE affirms Rajiv Jhangiani’s argument that “open pedagogy without respect for agency is exploitation” (Jhangiani, 2019) by recognising and purposefully seeking to rectify power disparities in the production of knowledge. CURE emphasises that communities, not lone scholars, conduct research. Oftentimes, the role of coders, librarians, archivists, students, and the labour of many others is made invisible in the production of scholarship. For this reason, it is worth noting the various stakeholders in CURE while also outlining the expertise they bring to the project.

Community organisations are central to the development of the CURE programme. Integrating community groups into CURE strongly buttresses scholarly impact statements, by grounding them in expressed community needs. Why is scholarship necessary? Whom will it impact? In what ways will it impact them? By focusing on these questions, the expertise of community organisations is highlighted and the individuals who work on the ground are able to amplify the specific ways their communities can benefit from exchange with the university community. In conceptualising and prioritising community organisations in this way, we are consciously addressing criticisms leveled against community-engaged learning toward community-driven research.

Information professionals’ expertise is also harnessed through CURE. By serving the role of mediator and liaison between community organisations and students, librarians and archivists are also able to share their expertise in information and primary source literacy through help with conducting literature reviews, data curation and storage, archival work, and citation management. At the conclusion of the project, student participants of CURE have the opportunity to learn scholarly communication competencies by publishing their work using open access principles. Here again, librarians have the opportunity to share information to acquaint students, early in their academic career, with competencies like open journal publishing, author’s rights, and types of peer review. CURE introduces students to many forms of openness including: open data, open access, and open education through the use of open pedagogical practices. Initiating conversations around various open competencies with undergraduate students may also shape their own engagements with academic publishing if they choose to pursue further studies.

Community organisations will also benefit from library expertise through workshops, support, and guidance in generating research questions that can have practical implications for the organisation’s programming. At Temple University Libraries, information professionals, by establishing a community of scholars and students around textbook affordability, have already engaged in vital campus community building around open education. Harnessing this communities’ enthusiasm around openness will be central in our search for faculty and student partners for our inaugural cohort for CURE.

In CURE, students are valued as producers of knowledge and their labour is recognized through self-determination. First, students get to design projects as they align with their own interests. Second, their labour is valued far beyond the limited scope of receiving a grade through a disposable assignment. Instead, contribution toward a public good is given primacy. Students also gain an opportunity to reflect and think critically about how their research should be shared, interrupting the capitalist model of the neoliberal university, and choosing to assign an appropriate Creative Commons License accordingly. Finally, CURE will create an opportunity to organize a student-led conference that is open to the public and provides students the opportunity to present their work for the university and their community.

Students and local communities are stakeholders in the openness movement who have both been recognised as being subject to structural barriers that necessitate intervention by stakeholders with greater relative power (Morales, Knowles, & Bourg, 2014). For example, through textbook affordability projects that incentivise the use of open educational resources to lower the burden of textbooks on students and their families, students are passive recipients of changing policies enacted with little of their own participation or consultation. More recently there has been a renewed focus in ways
students can create their own learning materials and be more active agents in open education. CURE recognises both students and community organisations as already being politicised, organised and connected. This project seeks to foreground the value in the work already being done by these core constituents and connect them with library and faculty input, facilitation, and support.

**Establishing the Programme**

The development of the CURE programme has, to date, comprised five central aims. Collectively, these have sought to accentuate and balance how best to identify and empower community organisations to drive research objectives, how to best leverage information professionals’ expertise, experiences and roles on our campus, how to structure research projects to facilitate support from faculty, and how best to promote an open pedagogical approach to student participation in order to agentivise participating students. These aims include:

1. **Establish a working group within the library with cross-functional expertise**
   a. The working group formed to launch CURE at TUL is purposefully made up of a variety of information professionals including our Education and Community Engagement Librarian, Coordinator of Learning and Student Success, Instructional Designer, Business Librarian, and Resident Librarian - whose work is split between special collections, archives, and library liaison duties. The roles of academic librarians and information professionals are as diverse and complementary as the various facets of academic openness. Our approach to develop our working group has sought to see the library as a holistic entity to best respond to the campus’ openness needs and to engage the whole of its existing community relations.

2. **Identify partner community groups**
   a. By harnessing existing ties to community organisations within the library. Even considering the significant number of charitable and activist organisations in North Philadelphia, the working group has sought to tap into the rich collaborations already present between Temple entities and community organisations. To this end, we spoke with members of the Libraries’ Special Collections Resource Center to gain an understanding of how this library department has already worked with organisations in the neighborhoods around Temple University. Many of the Special Collections Research Center (SCRC) collections have been donated by community organisations, and we have sought to connect with these groups to identify potential partners. Similarly, the working group has sought to understand the collaborations taking place between faculty, particularly those who have participated in the library’s existing openness projects, and organisations dedicated to community improvement.
   b. We subsequently identified potential partner organisations by selecting a geographic area around Temple University’s main campus in North Philadelphia; this area comprises 12 US postal ZIP Codes. We then examined data from the National Center for Charitable Statistics to find organisations fitting our criteria within the selected geographic area, limiting potential partner organisations to two categories in NCCS’ National Taxonomy of Exempt Entities: ‘Community Improvement and Capacity Building’, and ‘Civil Rights and Advocacy’. This method left us with 59 tax exempt entities.
   c. Our belief is that once we establish several relationships with community organisations on this project that there will be a snowball effect as these organisations share information about the project with their partners.

3. **Consider what support community organisations will need to curate research questions**
   a. Draw on librarian expertise in supporting research on campus. The Learning and Research Services division in the library is responsible for teaching at least two class sessions to
every undergraduate at Temple University. This has meant that the library has a comprehensive understanding of the approaches to information literacy and teaching about research strategies on campus. This position allows for information professionals to help accurately shape the research objectives of community organisations so that they are well-suited to the university’s courses.

b. The working group foresees a significant challenge in eliciting focused, clear, and appropriately complex research questions from participating organisations; many community entities are unfamiliar with the language and methodologies of academe. In turn, we are working to develop workshops, project materials, and consultations aimed at providing community organisations the tools to outline research objectives for themselves.

c. Finally, while we believe that the efforts of CURE will yield dramatic improvement to the work and mission of community partners, we also understand that support from university stakeholders will be necessary to ensure the success of CURE initiatives.

4. Identify Faculty and campus partners and classes that can promote CURE
   a. Our public service information professionals, namely librarians and archivists already have established, protracted relationships with faculty and are able to act as key partners in identifying faculty who would be interested in collaborating with students and community organisations on CURE projects.

   b. The library’s existing work with the group of faculty invested in the Textbook Affordability Project provides an important cohort of already-mobilised stakeholders with an interest in promoting an expanded and more inclusive vision for openness initiatives on campus.

5. Establish a web presence.

Conclusion

This community-directed project seeks to produce mutually transformative interactions between institutions of learning and research and the communities in which they are situated. This is an outcome that often challenges existing relationships between the university and its neighbours. The project also seeks to address local ways academic libraries can tackle global problems of access to information for individuals who fall outside of the academic institution’s traditional community, purposefully working to lower barriers that have typically restricted access and production of knowledge to institutions of higher education. In the interest of openness, CURE also seeks to reimagine traditional pedagogy, moving toward an open pedagogy where the utility of a traditional assignment is transformed toward a public good rather than solely for a grade.

In reporting on our vision for importing CURE from Montreal to Philadelphia as we are working to establish our own programme at Temple University Libraries, we hope to share our vision so that local organisations elsewhere can similarly partner with knowledge centres to establish CURE programmes of their own. We seek to partner with grassroots organisations in North Philadelphia neighborhoods to address the issues affecting our local community. The problems that the CURE initiative seeks to address, however, are in many ways universal. For example, global migrations to North American and the European Union by people fleeing political violence and the consequences of human-caused climate change is a phenomenon impacting cities throughout the United States and Europe. Similarly, the rise of right-wing populism in the West threatens the rights of the most vulnerable populations and makes the need for open knowledge and the free exchange of ideas all the more important.

This paper advocates for viewing community-engaged learning in light of the critical components of openness. This initiative is a response to the co-opting of community-engaged learning by neoliberal forces in academia that have eroded the focus of community impact, reciprocity, and
self-determination, that purportedly animated their pedagogical objectives. The guiding principles behind openness allow for the restoration of a focus on the community by challenging the increasing privatisation and corporatisation of knowledge. As we argue, the library is ideally placed to undertake this restorative work.

Acknowledgements

We would like to thank the grassroots organisers in Montreal who have worked on CURE since its inception. We would especially like to thank Amy Darwish and Leela Riddle-Merritte who, in their true community building spirit, shared information and expertise that was critical to our own planning of CURE at the Temple University Libraries. Finally, a warm thank you to Kimberly Tully and Elliot Montpellier whose thoughtful insights, enthusiasm, and edits made this paper possible.

References


Establishing a MOOC quality assurance framework – a case study

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Abstract

The rapidly growing number of learning materials and repositories makes the issue of how to find the most relevant and best quality resources to be integrated in teaching and learning offers. Thus, effective quality assessment tools are more and more needed. In the present paper, a case-study focusing on quality assurance in a Virtual Mobility (VM) international project is presented. VM stands for ICT supported activities, organized at higher institutional level, that makes possible or facilitate international, collaborative experiences in a context of teaching and/or learning. Different approaches were combined to ensure the quality of a specific MOOC and the OERs created to promote VM. Three main macro-indicators were identified for OERs evaluation: 1. Quality, 2. Appropriateness, and 3. Technical aspects. Each project partner was invited to search, select and peer-assess OERs related to the skills necessary to be engaged in VM. First results of the peer-review activity and future directions to ensure OpenVM OERs and MOOC quality are presented.

Keywords: Virtual mobility, OER, MOOCs, quality assurance framework.

Introduction

Open Education is understood as a mode of carrying out education using digital technologies to provide alternative and less restrictive access routes to formal and non-formal education (Brown, 2008). This perspective is broad enough to enable a comprehensive view, thus encompassing for instance Open Educational Resources (OERs), Massive Open Online Courses (MOOCs), and recognition of open learning (Stracke, & Tan, 2018). According to OECD definition (2007), Open Educational Resources (OER) are “digital learning resources offered online freely (without cost) and openly (without licensing barriers) to teachers, educators, students, and independent learners in order to be used, shared, combined, adapted, and expanded in teaching, learning and research”. OERs are not only course components, but they can be entire courses, a museum collection, an open access journal or a reference work. Over time, the term has come to cover also content management software and content development tools. Finally, OERs include implementation resources such as standards and licensing tools for publishing digital resources, which allow users to adapt resources in accordance with their cultural, curricular and pedagogical requirements. Having said that, the term ‘OER’ is not synonymous with online learning, eLearning or mobile learning. Many OERs are also printable. What makes “Open” an Educational Resource is the feature of

“free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself…” (Chan et al., 2002).

OERs are free and they can be adapted and remixed, thus they can enhance collaboration and networking, fostering a sharing culture and respect for various cultures and believes (Tappeiner,
According to Tuomi (2006), openness includes social and technical features: the social domain concerns the freedom to use, contribute and share the resources. Constraints to the social domain can be the copyright, the price of access or accessibility. Regarding the copyright challenge, the Creative Commons licence is the best-known and most often used open licence at present and offers a number of sharing options. Openness means also accessibility and it can depend on individual capabilities; for example, course contents may be freely available in a language the user does not understand, or the user may have a disability that precludes the individuals using the content.

A systematic approach to OERs quality assessment is particularly important to make decisions about which existing resources to include in a learning path. The rapidly growing number of learning materials and repositories makes the issue of how to find the most relevant and best quality resources. In addition, overlapping and competing standards, size of the search pool, quality of metadata are issues that different initiatives in the field of Open Education have tried to solve (Dietze et al., 2013; St. Lifer, 2018). Thus, there is urgency for effective search, discovery, and quality assessment tools. Quality can be defined as “[...] appropriately meeting the stakeholders’ objectives and needs which is the result of a transparent, participatory negotiation process within an organization” (Pawlowski, 2007). In the context of OERs, quality can for example mean that a teacher finds a suitable resource for his/her teaching. There are several alternative ways of approaching quality management in Open Education. Quality assurance can be a centrally or decentralized process, and the process may be open or closed (OECD, 2007; Jansen, Rosewell, & Kear, 2017). A common tool for the evaluation of the OERs is social ranking, which can be described as a form of crowd-sourced peer-review (Camilleri, Ehlers, & Pawlowski, 2014). The present paper will describe and critical discuss OERs and MOOC quality approach adopted in the Erasmus + project “OpenVM: Opening Education for Developing, Assessing and Recognising Virtual Mobility Skills in Higher Education”.

Ensure OERs quality in the Open Virtual Mobility Project

Virtual mobility (VM) stands for ICT supported activities, organized at higher institutional level, that support or facilitate international, collaborative experiences in a context of teaching and/or learning (Tur, Urbina, Firssova, Rajagopal, & Buchem, 2018). Virtual Mobility (VM) has a great potential to contribute to the internationalization, innovation and inclusion in higher education. The barriers to physical mobility of educators and students, such as high costs, socio-economic, political and health-related issues, can be dramatically reduced by adding the virtual component to mobility and, making mobility accessible to everyone (EuroPACE, 2010). The OpenVM project is a Erasmus+ strategic partnership dedicated to create accessible opportunities for achievement of virtual mobility skills and to ensure higher uptake of virtual mobility in higher education in Europe. Despite numerous virtual mobility initiatives and projects in the past years, the uptake of virtual mobility in higher education is still low and the possibilities remain unknown to a large number of educators and students in Europe. Higher education teachers and students but also internationalization officers and other institutional stakeholders, need the skills, confidence and readiness to start, implement and develop virtual mobility actions. Open Virtual Mobility (OpenVM) has a great potential to contribute to the internationalization, innovation and inclusion in higher education.

The project lasts three years (2017-2020) and it aims at supporting higher education teachers and students in developing, assessing and recognising the skills needed for design, implement and participate in virtual mobility activities in line with Open Education principles.

The key outcome of the openVM project is the Virtual Mobility Learning Hub for achievement, assessment and recognition of virtual mobility skills as a central reference point. The VM Learning Hub

1https://www.openvirtualmobility.eu/es_ES/
2https://hub.openvirtualmobility.eu
will apply innovative tools and methods (such as open credentials, evidence-based assessment and matching algorithms for learning groups) and provide a set of open educational resources (OER), a massive online learning course (MOOC) and guidelines to support the design, implementation and participation in virtual mobility in higher education.

There is widespread skepticism of the quality of MOOCs and the learning methodologies used and there is evidence that supports this skeptical view (Margaryan, Bianco, & Littlejohn, 2015; Lowenthal & Hodges, 2015). Thus, the Quality Assurance Framework (QAF) is one of the pivotal aspects for the success of the Open Virtual Mobility (Atenas, & Havemann, 2014). Levels of quality can be defined from the most general aspects to the more specific ones (Fig. 1). Although each quality level interacts with each other, in this paper we will focus on two of the five levels presented in the figure 1: quality of the courses (in our case, MOOCs) and individual OERs quality.

In the context of the the OpenVM project, a Massive Open Online Course named OpenVM MOOC has been developed in order to promote students’ and teachers’ skills necessary to be involved in VM. The OpenVM is structured in eight miniMOOCs, corresponding to the eight key skills and related content necessary to be engaged in Virtual Mobility (Firssova & Rajagopal, 2018): 1. Intercultural Skills; 2. Collaborative learning; 3. Autonomy-driven learning; 4. Networked Learning; 5. Media and digital literacy; 6. Active self-regulated learning; 7. Open mindedness; 8. Knowledge of Virtual Mobility and Open Education. These knowledge and skills were identified by applying a group concept mapping methodology and involving 49 experts in the field of virtual mobility and/or open education, with experience in higher education as university professors or education management and support (Firssova & Rajagopal, 2018).

Three levels are then proposed for each miniMOOCs:

1. foundation level: focused on knowledge acquisition;
2. intermediate level: focused on knowledge application in a collaborative learning environment;
3. advanced level: focused on self-reflection and meta-reflection;

Each miniMOOC has a pre-assessment activity: participants are required to fill in a quiz and, according to the score they obtained, they can be directed to the foundation level, intermediate level or advanced level. Each combination between the level and the miniMOOC is defined a subMOOC. Thus, the OpenVM MOOC is composed by 24 subMOOC, 8 miniMOOCs for 3 levels (Figure 2). Each subMOOC has different forms of assessment. In the foundation level and in the intermediate level there are mainly quizzes (e.g. multiple choices, true or false and drag and drop exercises), whilst...
in the advanced level there are also e-portfolio and peer-assessment activities. At the end of each subMOOC, participants obtain a badge that certifies the skills acquired in that specific subMOOC.

All the miniMOOC will contain approximately 9 Open Educational Resources (3 for the basic level, 3 for the intermediate level and 3 for the advanced level). In the OpenVM MOOC, OERs are considered the study material that participants could read, listen to, download and re-use for their personal purposes. OERs include slides, supplementary audio files, URLs to other resources, online articles and video lectures.

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**Figure 2: The OpenVM MOOC structure.**
Different approaches were combined to ensure the quality of the OpenVM MOOC and OpenVM OERs. At a more general level, quality assurance of the OpenVM MOOC is addressed through an iterative cycle of design, creation, implementation, and assessment, following the Design Based Research model – DBR (Barab & Squire, 2004). Salinas (2012) remarks that the DBR model has had an important uptake in Technology Enhanced Learning research as it is aimed at creating knowledge on the design, implementation and evaluation of the educational experience. It aspires to explore problems in real contexts requiring a solution in a particular context (de Benito & Salinas, 2016). Moreover, the DBR model has been argued to be suitable for the study of innovation, for which the contrast with the theoretical background and action observation in successive iterations is the strategy for knowledge creation (Brown, 1992; de Benito & Salinas, 2016; Shavelson, Phillips, Towne & Feuer, 2003). In the QA for the OpenVM Erasmus+ project, diverse tasks and instruments have been included following the DBR model. For each component (e-assessment, OERs, and MOOCs) the following phases (Piedra, Chicaiza, López, & Caro, 2015) are included:

1. Assessment by partner (internal);
2. Assessment by external experts;
3. Assessment by pilot users;
4. User testing assessment;
5. Learning analytics.

Within this paper, we will present the results of the first phase, the assessment carried out by partners regarding OERs and future perspective on the other phases.

In the quality assurance of the OpenVM OERs, elements of the traditional peer-review with social rating were combined (Camilleri, Ehlers, & Pawlowski, 2014). In the OpenVM project, project partners can change role between reviewer and producer depending on the project phase, and this make the quality review process closer to a social rating practice. Partners were also provided with a rubric (Table 1) to assess OERs selected and produced by peers as in the traditional peer-review. Three macro-indicators have been identified for the OERs evaluation (Poce, Agrusti & Re 2015) to assess OERs to be included in the Open VM MOOC:

1. Quality;
2. Appropriateness;
3. Technical aspects.

Each macro-indicator was operationalised through sub-indicators (Table 1). By combining the answers on different sub-indicators, it is possible to provide a general overall evaluation of the OER (0=not usable; 1=limited; 2=good; 3=superior). For example, a resource can be considered weak if it is not recent neither peer-reviewed and/or accessible to people with disabilities. On the other hand a resource is considered superior if it covers one of the MOOC’s topics, if it is updated and its contents are clear organized and accessible to different kinds of target. The table was mainly inspired by a separate rubric for the evaluation of OERs created by ACHIEVE.org, a nonprofit education organization created in 1996 by a bipartisan group of governors and business leaders, fully recognized by international companies and institutions.³

³https://www.achieve.org/contributors
### Table 1: OER rubrics adapted from ACHIEVE, 2011

<table>
<thead>
<tr>
<th>Quality</th>
<th>Appropriateness</th>
<th>Technical aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Creator knowledgeable (Who is the creator and what kind of expertise and experience do they have?)</td>
<td>• Clearness of structure and content</td>
<td>• Licensing status (What is its copyright and licensing status and how does that impact what you can do with it?)</td>
</tr>
<tr>
<td>• Creator authenticity (Are you reasonably certain that it is actually the work of the person claiming to be the author?)</td>
<td>• 8 badges topics (Intercultural skills, Collaborative learning, Autonomy-driven learning, Networked learning, Media and digital learning, Active Self-regulated learning, Open mindedness, VM knowledge)</td>
<td>• Human accessibility (Is it accessible to people with disabilities?)</td>
</tr>
<tr>
<td>• Creator bias (What is the intended purpose? (Think educate/inform, sell something, entertain, change minds/behavior, even propaganda/hate speech)</td>
<td>• Difficulty level (from Beginner: resource written with simple language, providing a general definition of the skill OR video that provides a general definition of the skill. Intermediate: resources written with a plain language that connect the skills to possible applications OR video that explain how that skills can be applied in certain situations. Advanced: resource written with complex or academic language that refers to real-undefined issues OR video that describe complexity and interconnection between the skill and other skills, ethical questions and so on.)</td>
<td>• Technical accessibility (Is it accessible to people using different devices (multi-channel)?)</td>
</tr>
<tr>
<td>• Organization affiliation (What is the “hosting” organization and what kind of reputation do they have?)</td>
<td>• Organization quality control (Does the hosting organization conduct any sort of quality control?)</td>
<td>• Technical Quality (in terms of graphics, sound, text layout)</td>
</tr>
<tr>
<td>• Organization quality control (Does the hosting organization conduct any sort of quality control?)</td>
<td>• Peer reviewed (Has it been through peer review?)</td>
<td>• Numbers of items in the e-assessment</td>
</tr>
<tr>
<td>• Peer reviewed (Has it been through peer review?)</td>
<td>• Material(s) currency (How recent or up-to-date is it content?)</td>
<td></td>
</tr>
<tr>
<td>• Material(s) currency (How recent or up-to-date is its content?)</td>
<td>• Type of assessment (T/F; multiple choices; filling in the blanks; matching; open ended)</td>
<td></td>
</tr>
<tr>
<td>• Type of assessment (T/F; multiple choices; filling in the blanks; matching; open ended)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall evaluation: (0 = not usable; 1 = limited; 2 = good; 3= superior).

### OERs assessment and selection in the OpenVM Project

University Roma Tre is responsible for the Intellectual Output 6 of the OpenVM project, which includes organizing the process of OERs design, assessment and selection. Once the OERs assessment rubric presented in Table 1 was created, project partners were required to provide OERs in different formats (mainly texts and videos) and partners’ languages, following the quality guidelines of the OERs assessment rubric. OERs contents had to be connected to the eight skills necessary to be engaged effectively in virtual mobility. Each skill was assigned according to every partners’ specific background and expertise. In order to support OERs identification, Roma Tre team proposed different types of OERs repositories on the web. Not only repositories created by formal educational institutions, such as universities, but also other informal and no formal institutions databases (e.g. TedX video repository) were suggested to be used on purpose.

The process was organized as follows:

1. Each partner had to identify at least 9 OERs (3 for the foundation level, 3 for the intermediate level, 3 for the advanced level) related to one of the eight skills of the OpenVM MOOC. Each partner was responsible to identify OERs within a certain area in order to cover all MOOCs’ contents. Partners had to download the OERs in a spreadsheet created on Google Sheets. The use of Google Sheets allowed partners to comment, insert feedback, and propose alternative contents.
2. OERs selected were peer-assessed by another partner of the project. Peer-assessors could add comments, feedback, and propose alternative OERs. This way, partners had the
opportunity to discuss suitability or non-suitability of the OERs selected to be included in the OpenVM MOOC.

3. In the last phase, during a face-to-face workshop organised in February 2019 in Heerlen, partners worked in small groups of two or three people. Each group was invited to organize the OERs selected and assessed into a template for a miniMOOC design provided by the Roma Tre team.

The process was thought to guarantee each partner’s participation in the selection and assessment of the OERs and, eventually, in the OpenVM MOOC design.

**First results of the OERs selection and assessment**

Since the peer-assessment process is in progress, first results related only to six skills area are presented in Table 2.

<table>
<thead>
<tr>
<th>Skills to promote in the VM MOOC</th>
<th>Level</th>
<th>Number of OERs for each level</th>
<th>Date of the creation of the resources (in average)</th>
<th>Quality overall peer assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy driven learning</td>
<td>Foundation</td>
<td>4</td>
<td>2007 (from 2001 to 2018)</td>
<td>80% good; 20% superior.</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mainly for teachers</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-regulated learning</td>
<td>Foundation</td>
<td>3</td>
<td>2014 (from 2010 to 2017)</td>
<td>80% good; 20% superior.</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative learning</td>
<td>Foundation</td>
<td>3</td>
<td>2013 (from 2010 to 2017)</td>
<td>20% not usable; 20% limited; 20% good; 20% superior;</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Networked learning</td>
<td>Foundation</td>
<td>3</td>
<td>2013 (from 2008 to 2017)</td>
<td>40% limited; 40% good; 20% superior;</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open-mindedness</td>
<td>Foundation</td>
<td>2</td>
<td>2011 (from 2004 to 2018)</td>
<td>20% limited; 30% good; 50% superior</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercultural skills</td>
<td>Foundation</td>
<td>5</td>
<td>2014 (from 2008 to 2018)</td>
<td>20% limited; 30% good; 50% superior</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This process was useful to exclude resources with poor overall quality. Only resources that obtained a “good” or “superior” overall assessment were included into the miniMOOCs. In case of positive assessment, partners had also the opportunity to include scoring descriptions, commenting briefly, like in the following extract (E1):

E1 “This resource is a good way to start a discussion about similar processes and the implications in the educational situation!” (Peer assessor of the Intercultural skills OERs)

On the other hand, when resources received a negative evaluation, the use of the Google spreadsheet allowed partners to discuss further and find a shared final decision (Figure 3).

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**Figure 3: Screenshot – Google Spreadsheet used to discuss OERs assessment.**

Partners had approximately three months to complete this work, from November 2018 to February 2019. Once partners achieved a final agreement related to the course contents, learning objectives and assessment methods, then OERs, e-assessment and instructions were uploaded on the learning hub.

**Conclusion and future steps**

In the context of Open Education and Virtual Mobility, quality assessment needs to be taken into account. The present work describes the Quality Assurance framework for OERs within a specific MOOC created in the Erasmus+ Open Virtual Mobility Project. The University of Roma Tre research group firstly has developed a rubric for the OERs quality assessment. Then, each project partner was invited to search and assess OERs related to the eight skills identified by (Firssova & Rajagopal, 2018) necessary to be engaged in Virtual Mobility. Partners had to download the OERs in a spreadsheet created on Google Sheets. The OERs selected were peer-assessed by other partners in a joint
Having said that, further work is needed to ensure OERs and MOOCs quality. As quality is not a generic concept, user behavior and comments can indicate the quality of MOOCs and OERs in relation to the learner context. We will carry out a pilot phase from 2019 to 2020 and we will collect different kinds of data regarding user interaction with the miniMOOCs, part of the MOOC under investigation, and the OERs used per each miniMOOC. As a strategic management decision, the OpenVM project will have to consider the role of learning analytics to gather and assess data from the MOOC and all single elements. In addition, different forms of data collection will be combined: user comments, recommendation and ratings. The insights will be used to improve OERs and the OpenVM MOOC quality and design, following an iterative process, as indicated by the Design Based Research approach.

Initial results regarding users’ OERs assessment were collected (Poce, Re, Amenduni, & Valente, 2019). In future phases, OVM MOOC users will be asked to provide their evaluation of the selected OERs.

Acknowledgements

A. Poce coordinated the research presented in this paper. Research group is composed by the authors of the contribution that was edited in the following order: A. Poce (Introduction; Conclusion and future steps) and Discussion), F. Amenduni (Ensure OERs quality in the Open Virtual Mobility Project); M. R. Re (OERs assessment and selection in the OpenVM Project), C. De Medio (First results of the OERs selection and assessment).

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