

Institution: The Open University		
Unit of Assessment: C23 Education		
Title of case study: Transforming Education through Open Practices		
Period when the underpinning research was undertaken: 2012-2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Martin Weller	Professor	1995 – present
Rob Farrow	Research Fellow	2009 – present
Beck Pitt	Research Fellow	2011 – present
Patrick McAndrew	Professor	1999 – 2019
Beatriz de los Arcos	Research Associate	2000 – 2018
Period when the claimed impact occurred: 2015-2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact		
<p>The work of the OER Research Hub has focused on creating an evidence base for the use of Open Educational Resources (OER) in order to enable open education organisations and practitioners in a range of sectors across the world to make informed decisions regarding their open education practices (OEP). Through collaborative and community-building partnerships the OER Research Hub has had an impact on the delivery of professional services and performance of seven major Open Education organisations in that their practices have changed through the capacity building and training delivered through the OER Research Hub; the design and delivery of their OER have changed as a consequence of the OER Research Hub research findings; their policies and strategies have been informed by OER Research Hub work and their internal professional development initiatives have been influenced by both the practice and the research of the OER Research Hub. The Hub has also had an impact on 4,460 practitioners by increasing their awareness of OER and OEP; increasing their capacity to implement OEP and stimulating them to develop new teaching strategies.</p>		
2. Underpinning research		
<p>OER (teaching and learning materials that are freely available and easily adaptable) and OEP (practices that include the creation, use, and reuse of OER as well as open pedagogies and open sharing of teaching practices) are the latest instantiations of Open Education, as initially developed by the Open University movement. As such, their primary aim is to make education more accessible to all learners. OER have been part of the open education movement since 2002, however the initial phases of the OER movement often lacked substantial research examining the claims made about their benefits and how they are used in practice. The OER Hub at the Open University was founded to develop this evidence base by researching the impact of OER and related OEP. The fundamental research question researchers within the hub have addressed is: 'what is the impact of OER and OEP on educational practice?'</p> <p>The first phase of the of the OER Hub programme (2012-2015) focused on establishing an initial evidence base. The project developed eleven hypotheses that represented the most commonly stated beliefs and motivations of educators and researchers regarding OERs. A key feature of the project is that Hub researchers worked collaboratively with International Open Education Organisations in a range of sectors (K12, Community College, Higher Education and Informal Learning) in order to test these hypotheses. Interviews, case studies, and a large set of surveys directed at educators, informal learners, formal learners and librarians were conducted. In total, 21 surveys were conducted, with nearly 7,500 responses. Examples include the following:</p>		
<p>i) A survey of post-secondary educators in 17 British Columbia post-secondary institutions was conducted in order to examine questions such as how OER were currently being used, awareness of open licensing and individual and institutional enablers of and barriers to OER use. The results evidenced a need for institutional commitment to OER which could be</p>		

- operationalised in several ways such as providing release time to enable faculty to create, adapt or adopt OER or encouraging faculty to pilot the use of OER in their courses [O1].
- ii) A survey was conducted of 3,127 users of OER repositories in order to understand the impact of OER on non-formal learners. Results indicated that whilst non-formal learners were enthusiastic and positive about OER, there was a degree of polarization regarding whether their use of OER would make formal study more likely [O2].
 - iii) 657 schoolteachers were surveyed in order to examine the impact of OER on their teaching and learning practices. The results revealed that schoolteachers adapt, rather than simply adopt OER; indicating a strong connection between OER use and personalized learning and suggesting a need to change teachers' habits [O3].
 - iv) Two surveys of 130 educators regarding their use of open textbooks were conducted. Analysis revealed that the majority of the educators were reporting that open textbooks enabled them to better respond to student needs while making teaching easier [O4].
 - v) Data from all 21 surveys was examined, with a particular focus on teaching and learning, and revealed a number of benefits that had been hitherto underreported in OER literature. Including: OER having a positive impact on student attitudes and perceptions of learning; there is a positive benefit in the reflection on practice by educators that accompanies OER adoption and the use of OERs has the potential to improve retention, performance and recruitment [O5].

The second phase of the OER Hub programme of research (2015-2019) focused on developing global communities and networks. For example, The Open Textbooks Network project (2017-2019) aimed to examine factors influencing the potential adoption of open textbooks by UK educators. A survey of 97 UK educators, primarily working in Higher Education in England was conducted. It revealed low awareness of OER and open textbooks but high levels of interest in their future use. Around 50% of respondents expressed an interest in becoming part of a subject community producing their own open textbooks [O6].

Overall, the body of research conducted by the OER Research Hub revealed a complex picture of OER use and suggested four important messages for stakeholders:

- i) The use of OER has a positive impact on learners' attitudes and perceptions of learning as well as their retention, performance, and recruitment.
- ii) Educators are interested in the potential of OER to enable them to respond to learners needs and when they use OER it can stimulate reflection on their practice.
- iii) There is a tendency for educators to adapt OER to their own contexts.
- iv) The use of OER by educators is reliant on institutional commitment.

3. References to the research

The underpinning research has been funded by The Hewlett Foundation and the Scottish Funding Council. O2-5 are in peer-reviewed journals. In 2014 the OER Hub team were awarded the Open Education Consortium Open Research Award for Excellence.

- O1.** Jhangiani, R., Pitt, R., Hendricks, C., Key, J., & Lalonde, C. (2016) Exploring faculty use of Open Educational Resources at British Columbia Post-Secondary Institutions *BCcampus research report*, Victoria, BC. <http://oro.open.ac.uk/45178/>
- O2.** Farrow, R., de los Arcos, B., Pitt, R., & Weller, M. (2015) Who are the Open Learners? A Comparative Study Profiling Non-Formal Users of Open Educational Resources. *European Journal of Open, Distance and E-learning*, 18 (2). <https://doi.org/10.1515/eurodl-2015-0013>
- O3.** de los Arcos, B., Farrow, R., Pitt, R., Weller, M., & McAndrew, P. (2016) Adapting the Curriculum: How K-12 Teachers Perceive the Role of Open Educational Resources. *Journal of Online Learning Research*, 2(1), 23-40. <http://oro.open.ac.uk/46145/>
- O4.** Pitt, R. (2015) Mainstreaming Open Textbooks: Educator Perspectives on the Impact of OpenStax College open textbooks. *International Review of Research in Open and Distance Learning*, 16, (4) 133-155. <http://oro.open.ac.uk/44776/>
- O5.** Weller, M., de los Arcos, B., Farrow, R., Pitt, B., & McAndrew, P. (2015) The Impact of OER on Teaching and Learning Practice. *Open Praxis*, 7(4), 351-361 <https://doi.org/10.5944/openpraxis.7.4.227>

O6. Pitt, R., Farrow, R., Jordan, K., de los Arcos, B., Weller, M., Kernohan, D., & Rolfe, V. (2019) *The UK Open Textbooks Report*. <http://oro.open.ac.uk/61587/>

4. Details of the impact

Beneficiaries of research conducted by the OER Hub include i) open education organisations (e.g. open textbook providers, online course providers); ii) higher education institutions, professional bodies and networks with an interest in supporting educators in their use of OER or OEP; and iii) educators working in schools, further education and higher education with an interest in developing their own personal OEP or with responsibility for developing institution-practice. The OER Hub has implemented a range of pathways to impact including: i) modelling best education practices by making openly available their survey tools and datasets and courses aimed at informing and transforming open education practices ii) implementing a Research Fellowship Scheme for employees of Open Education organisations and iii) running a range of practitioner workshops. The influence and value of these pathways in supporting the development of a community of OER practitioners has been widely recognised. For example, in 2015 an independent evaluation of the work of the Hub concluded that: “*the OER Research Hub has built a solid reputation among a community of OER researchers and practitioners as leader, expert, and role model*” [C1]. In February 2015, the Hub won a RCUK/ OU Engaging Research Award with judges commenting on how: “*publics were engaged meaningfully in this densely participative research*”. More specifically, the OER Hub has had an impact on **the delivery of professional services and performance** of Open Education organisations by informing: the design and delivery of their OER; their policies and strategies and their internal professional development initiatives and **practitioners** by increasing their awareness of OER and OEP; increasing their capacity to implement OEP and stimulating them to develop new teaching strategies.

Informing the performance and delivery of professional services of Open Education organisations

As part of establishing an initial evidence-base, the OER Hub worked collaboratively with large Open Education organisations to help them undertake action research that would offer a better understanding of their learners and how they use OER. Examples include: BCcampus, a project in Canada developing open textbooks for high population undergraduate courses (in 2018/9 103,330 students used their textbooks); OpenStax in the United States who are the largest open textbooks provider (their textbooks are being used in 56% of college and universities in the U.S. and over 100 countries); The Saylor Academy, a foundation developing 100+ open online resources and courses for learners and Siyavula, a provider of maths and science open textbooks for K12 in South Africa (users have completed over five million Mathematics and Science exercises). These collaborations were realised through funded fellowships, whereby a researcher in the team worked with the organisation, and an individual in the organisation visited the Open University. The OER Hub developed their research skills and worked on a specific research question (related to the eleven hypotheses) they wished to pursue. In each case the collaborations produced evidence that helped shape future implementation of learning resources within the organisations. For example, The Managing Director of OpenStax testifies that a key outcome of the collaboration with the OER Hub is that: “*A range of design iterations were applied to some OpenStax products to address some of the concerns in the surveys. As such the findings supported intelligent investment in improving the problem areas and potential context gaps*” [C2]. The Associate Director of Open Education at BCcampus states that the collaboration with the OER Research Hub was invaluable because “*the recommendations [...] provided concrete evidence to share with Ministry contacts and Institutional leaders and directly impacted the University of British Columbia’s decision to add the creation of open educational resources in their promotion and tenure guide for educational leadership*” [C2]. The Director of the Community College Consortium for Open Education Resources (CCOER) reports that their fellowship helped CCOER gain a “*better understanding of how OER activities were being conducted at community colleges and faculty perceptions of the associated outcomes which proved very helpful for support and expansion of our community of practice*” [C2]. The Director of Product and Research at Creative Commons testifies that the findings from their visiting

fellowship were fed back into continued running of the 'School of Open' and that it was of benefit to *"leading, managing, and running courses and course organizers for the 'School of Open', which ended up impacting people in various regions around the world"*. Illustrative examples of the scale of this benefit include: the launch of 'School of Open Africa' in Kenya, Tanzania, Nigeria, South Africa (8 programs; 400 participants) and the design and launch of 100 courses, workshops and programs with 3,000 participants to date [C2]. The person responsible for learning research and analytics at Siyavula (2015-2018) testifies that the research they conducted with the OER Hub as part of their Fellowship provided data that helped Siyavula understand the nuances of interacting with teachers and their perceptions regarding open texts. This informed future *"collaborative content development workshops that we ran with them. For example, we included some focused sessions on the various technology tools so that they could get more out of the experience and view it as a professional development exercise. This enabled us to generate a continuous relationship with them"* [C2].

The OER Hub has also helped to inform the OER policy and strategy of OER related institutions. For example, working with the Association of Learning Technology (ALT) the OER Hub has helped develop a policy guide for OER adoption. ALT is the largest member organisation for educational technology practitioners in the UK with over 3,500 members. The ALT CEO stated that: *"ALT's role as an independent voice in the development of national policies has been informed by the work of the OER Hub, resulting in the publication of a document: "Open Education and OER - A guide and call to action for policy makers" and also ALT's formal response to the Government's consultation on Data and Ethics in Education. The OER Hub's approach to open practice and the evidence base they provided for the benefits of OER have been key elements in the acceptance of ALT's policy work in this area"* [C3]. The Program Officer for Hewlett Foundation (2014-17) writes: *"The findings of this research provided me and my foundation colleagues with valuable information about the general state of the OER field, as well as specific insight into key questions being studied. This information informed the grant-making strategy related to OER at the Hewlett Foundation. The Hub research helped us understand where OER use was less effective or less prevalent and adjust our approach to funding organizations that could help improve efficacy and prevalence of use. Nuanced changes in our strategy setting could be implemented as a result and provided good guideposts to help navigate our complex global grant-making work"* [C4].

Influencing the open practices of educators in a range of contexts

Through a range of impact activities such as the Fellowship Schemes, workshops and supporting the development of community networks the OER Hub has influenced the open practice of educators by raising their awareness of the potential of OER, enabling them to make informed decisions about whether and how to adopt OER and increasing their ability and confidence to develop and evaluate OER policy and practice in their own communities.

The Director of Non-Profit Flipped Learning Network testifies to the influence of the OER Hub Fellowship scheme: *"Without the background and knowledge I gained through my work with the OER Research Hub Project at the Open University, I would not have been qualified, or possessed the skill set, to work with the U.S. government" on a national project which aimed to identify public schools in the U.S. that were leaders in the practice of using OER in their classrooms"* [C2].

As part of the OEPS project (2014-2017), the OER Hub team carried out seven workshops encouraging exploration of open practice at H.E and F.E institutions across Scotland. There is evidence that engaging in the OEPS project stimulated practitioners to develop new or different teaching strategies. For example, a Senior Lecturer at The University of the West of Scotland recalled how attending an OEPS workshop influenced his decision to utilise open textbooks [<https://tinyurl.com/rby9m26>]. The UK Open Textbook project (2017-2019) conducted 16 workshops promoting open textbook adoption at ten institutions with participants from almost 20 UK HEIs. In addition, the project participated in seven exhibitions/presentations showcasing OpenStax materials. As a result of the project nine known adoptions are attributable in whole or

in part to UK Open Textbook activity and there were 16 confirmed UK recommendations of OpenStax resources [C5]. Working in partnership with the Open Textbook Network (OTN), one branch of the project ran workshops across universities in the UK and the Republic of Ireland introducing the value of Open textbooks in teaching and learning. 14 workshops were held at eight institutions with invited staff from 18 universities. Of the 116 attendees, nearly half of those attending completed an OTN follow-up survey, and of those, 37% answered 'yes' or 'maybe' to whether they would adopt an open textbook [C6]. A senior lecturer who attended the workshop at Glasgow Caledonian University in 2017 testifies that it raised awareness about the potential of open texts and open education more generally. It also highlighted issues that the institution needed to address in order to support implementation of open textbooks. They are now working as an independent consultant and draw on OER Hub Resources in their work with universities, considering them to be one of her trusted resources: *"Because of the range of projects and experiences that the OER Hub has, there are quite a wide range of things on offer which gives you more of an opportunity to tailor your recommendations to colleagues"* [C6]. In August 2020, OER Hub staff contributed to a COVID-19 response project funded by GCRF which delivered a range of online workshops designed to support educators in schools, tertiary education and Teacher Education in Africa to transition to online teaching. One of those workshops focused on OER. 175 educators from countries that included Kenya, Nigeria, Zambia, and Mozambique engaged in the online workshop and evaluation evidence (n=82) indicates that 91% fully or mostly understood the potential of OER and how to incorporate it into their own practice and 57% were planning to re-use, create or share OER in their own teaching [C7].

The OER Hub co-ordinates The Global OER Graduate Network (GO-GN), a network of international doctoral candidates whose research includes a focus on open education. These doctoral researchers, many of whom are teachers, are at the core of the network; around them experts, supervisors, mentors and interested parties connect to form a community of 269 practitioners who draw on OER Hub research to inform their practice. Members of the GO-GN Network have testified as to how their practice as teachers has been influenced through membership of the network. For example, the Manager in Open Educational Practice at the University of Southern Queensland writes: *"Within my institution, I have been actively working on shaping policy through development of an action plan in relation to Open Educational Practices (OEP), and drawing upon the Go-GN network has been particularly helpful in this [2019] [...]. I am very doubtful that the documentation would have been as comprehensive had I undertaken this search alone"* [C8]. A lecturer at Tangaza University College in Kenya states that *"Participating in the GO-GN has also helped me to support other staff within my institution [2019]. I now coach other faculty members on how important it is to incorporate ICT and OER in teaching and learning, which I feel this has enhanced the quality of my own teaching"* [C8]. An Edtech advisor at the Saxion University of Applied Sciences in the Netherlands testifies: *"Last year [2018] I set up a project within my institute based on their projects and outcomes. It was really helpful. Based on existing OER content, we developed our own professional development program for teachers on OER as well as a supporting website [...] I have also sought to implement changes within my institution [...] In addition to the website development, every Instructional Designer (12 in total) received training on OER so that they apply it within their work as well [...] We also created our own open online courses that are not only used within our own institute, but also nationally [...] by at least 6 Universities of Applied Sciences"* [C8].

5. Sources to corroborate the impact.

- C1. Evaluation report. Impact on practitioners. Independent evaluator.
- C2. Letters. Impact on open education organisations. Open Education organisations.
- C3. Letter. Impact on open education organisations. Director of ALT.
- C4. Letter. Impact on open education organisations. Program Officer for Hewlett Foundation.
- C5. Journal article. Impact on practitioners. <https://doi.org/10.1629/uksg.427>
- C6. Letter. Independent consultant and former employee of GCU.
- C7. Survey data. Impact on practitioners. Participants of GCRF workshops.
- C8. Letters. Impact on practitioners. Members of the Go-GN Network.