OPEN EDUCATION RESOURCES IN THE GLOBAL SCENARIO: HIGHLIGHTS AND CHALLENGES

Rodrigo Esteves da Lima-Lopes[1*]

Terezinha Marcondes Diniz Biazi[1]**
[1]UNICAMP, Campinas, SP, Brasil

Abstract

Given the recognition of the Open Education Resources (OER) movement in the global scenario, this paper provides an overview of the OER implementation efforts, based on two documents: OER Global Report 2017 and Ljubljana OER Action Plan 2017. The first analyses the OER progress from 2012 to 2017. The second presents recommended actions and strategies to harness the potential of open-licensed resources. We argue that these documents helped to compose the actions and strategies for the 2019 UNESCO OER Recommendation, which, in turn, motivated UNESCO and partnerships to produce an OER Guide under the Pandemic COVID-19 in 2020. Aligned with the OER experiences brought by the Guide, we underscore the importance of openly creating and sharing teaching and learning materials to support educational practices during Covid-19.

 Keywords: OER Global Report 2017; OER Action Plan 2017; OER Guide and COVID-19

[*] Lecturer in the Department of Applied Linguistics and in the Post-graduate Programme of Applied Linguistics at University of Campinas (UNICAMP). E-mail: rll307@unicamp.br. ORCID: https://orcid.org/0000-0003-3681-1553.

[**] Doctoral student at the Institute of Language Studies at UNICAMP. E-mail: t040530@dac.unicamp.br. ORCID: https://orcid.org/0000-0001-8599-8786.

1. Introduction

In the current information-driven society, knowledge, skills, and values are fundamental to promoting socio-economic prosperity, reducing social disparities, marginalisation, and exclusion, and enabling the development of the creative potentials of those who are left behind and often remain socially hidden. Needless to say, education is pivotal in today's information society. We do share the understanding that education is, in many important ways, the essential prerequisite to boost sustainable prosperity, social equity, freedoms, inclusion, and social justice around the globe, and to minimise inequalities and marginalisation. To reach those objectives, nations must offer quality education that conforms to the societal new learning needs and the new learning possibilities brought by the ever-growing potentials of digital technology, especially information technology and social software. Hence, the new learning demands that have emerged from our ubiquitous digital-networked environment differ essentially from the demands from the 20th century as today's information societies require citizens with high-level skills. This has resulted in educational institutions worldwide, mainly in higher education, striving to respond to the urgent need to adjustments within their educational systems to move from traditional closed learning formats towards open formats to harness the potential of digital technologies for open access and social inclusion of excluded and disadvantaged learners (Butcher & Hoosen, 2012; Gauthier, 2013; Hodgkinson-Williams & Arinto, 2017). Fostering open digital inclusion is starkly evidenced, given the number of off-line marginalised groups of learners who face unequal access to online learning globally, spurred by the Covid-19 outbreak (United Nations, 2021).

That said, the emergence of the movement of open practices in the last decade within the educational domain has been hailed as providing the potentials to help remedy inequalities and diminish socio-economic barriers by offering accessible quality content through a range of open initiatives, open textbooks, e-content repositories, and platforms, for a global community of educators, students and lifelong learners (Hodgkinson-Williams, 2013; Kanwar, 2017; UNESCO & COL, 2017).

Two significant factors enable open education development in the last decade. One is the bold move taken by the Massachusetts Institute of Technology that launched the pioneering MIT program OpenCourseWare, an innovation to the field of higher education, with the delivery of open course materials worldwide. The program emerges from a match between the openness of the American tertiary education system and the capability of global connectivity and its use for new applications in education. The second factor is the rapid expansion of the internet and mainly the development of the open-source software by the technology sector that changes the dominant proprietary model of "Ownership" (Gauthier, 2013, p. 1) of commodities, based on possession and control to a new approach to resources that lies exclusively on contribution and sharing. Education follows the lead and, cost-effective learning and knowledge models, providing open access, distribution, and sharing, are embraced by

academic institutions worldwide. Thus, the new phenomena of openness to collaboration and volunteerism come into the education settings (Butcher, Hoosen, Moore, 2014; Gauthier, 2013; Geser, 2012; Hodgkinson-Williams, 2013; Miao, Mishra & McGreal, 2016).

In tandem with MIT's commitment to Open Education and with the unencumbered open content initiative on the Internet, UNESCO's Forum on the Impact of Open Courseware for Higher Education in Developing Countries (UNESCO, 2002) coined the term Open Educational Resources (OER) to designate the new worldwide phenomenon of openly making adaptable educational resources. Ever since, the movement has built momentum from initiatives of OER advocates and producers around the globe (Butcher & Moore, 2015; Miao, Mishra & McGreal, 2016).

Given the global emergence and recognition of OER, the specific objective of this work is to provide an overview of the world's implementation efforts of OER from 2012 to 2017. To this end, we examine two documents - Open Educational Resources: Global Report 2017 (COL, 2017b) and Ljubljana OER Action Plan 2017 (Ljubljana, 2017). They have significant functions in the OER scenario as they describe the OER state-of-the-art globally, address the OER challenges, and present a list of concrete actions to be taken by governments worldwide to mainstream OER and help achieve Sustainable Development Goal 4 - SDG 4 Quality Education (Kanwar, 2017). But, most importantly, we consider that these documents help to compose the actions and strategies from the 2019 UNESCO OER Recommendation, which, in turn, motivated UNESCO and partnerships to produce an OER guide under the Pandemic COVID-19, following the 2019 OER Recommendations.

The Open Educational Resources: Global Report 2017 describes the current panorama of OER worldwide, reviews the OER progress and commitments made by the 70 delegate countries since the 2012 Paris OER Declaration, and also collects background data to guide discussions to build the Ljubljana OER Action Plan for the 2nd World OER Congress 2017, held in Slovenia. The document is the result of a comprehensive account from governments and stakeholders' discussions in regional consultations about a range of issues concerning the adoption of OER globally, including OER strategies and policies, benefits of OER, challenges for mainstreaming OER, major highlights, barriers, and global trends in OER (platforms and repositories). COL presents the global report outcomes during the 2nd World OER Congress 2017 and they serve to shape the discussions that lead up to the making of the Ljubljana Plan (COL, 2017b; Kanwar, 2017; UNESCO & COL, 2017).

The Ljubljana OER Action Plan 2017, produced at the 2nd World OER Congress, brings together collective concrete actions to be taken by member states and active stakeholders to overcome the roadblocks for OER development for OER to achieve SDG4. The theme for 2nd World OER Congress 2017 'OER for Inclusive and Equitable Quality Education: From Commitment to Action,' reaffirms the OER goal in pursuing SDG4 that calls on the global community to

"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (Ljubljana, 2017, p.2).

After introducing our research scenario, we move to the first section where we present some background information regarding the field of OER. In the second section, we describe the approach and structure of the two documents - Open Educational Resources: Global Report 2017 and Ljubljana OER Action Plan 2017 which build a sound knowledge base to understand the current and likely future developments of OER worldwide. In the subsequent sections, we analyse and discuss OER achievements, challenges, and new policy recommendations in the context of the two working documents. To conclude, we argue that the Open Educational Resources: Global Report 2017 and the Ljubljana OER Action Plan 2017 helped, to a great degree, to build the foundations for the deliberation of UNESCO Recommendation on OER (UNESCO, 2019). Such sequential documents play a pivotal role in strengthening action plans to include access to OER teaching and learning resources, which, at this very moment, are so much-needed due to school and university closure worldwide, imposed by COVID-19. We also point out the production of the handbook namely, 'Guidance on Open Educational Practices during School Closures: utilising OER under COVID-19 Pandemic in line with UNESCO OER Recommendation' (Huang et al., 2020), produced by UNESCO and its partners, which recalls, and reaffirms the OER principles, policies, and actions to guide the education community in the use of openly licensed teaching and learning materials during the quarantine.

2. OER definition and distinctive features

As noted, the term Open Education Resources is coined at UNESCO's 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries (UNESCO, 2002) to describe a global grassroots movement of sharing openly course contents that emerged from some pioneering academic institutions initiatives involved in virtual universities, e-learning and open-source approaches to education in 2002 (MIT OpenCourseWare and Rice University Connexions, to name a few). The term OER designates "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, n.p.). It is important to note that OER initiatives have their roots in online teaching and learning within higher education contexts and that OER initiatives aim to break down barriers of proprietary systems that are built with hidden source code, are attached to an unchanging licensing system, and are developed with separately packaged applications with a low level of adaptability and customisation. In this view, OER elements and practices comprise not only open learning content but also tools and services to guarantee OER implementation (Albright, 2005; Butcher & Moore, 2015; Wiley, 2014). This means "the creation of open-source software and development tools, the creation and provision of open course content, and the development of standards and licensing tools" (Albright, 2005, p.1).

Since UNESCO's 2002 Forum, OER have gathered momentum through the shared commitment to educational commons by the international community, and some working definitions for OER have been proposed by funding organisations, international agencies, and institutions (The William and Flora Hewlett Foundation; CC; OECD; The Cape Town Open Education Declaration, The Wikieducator OER Handbook, OpenStax, and OER Commons). Despite minor conceptual differences among these definitions, all of them agree that "the right of access, adaptation, and republication" are embedded in OER practices (Dutta, 2016, n.p.).

The OER working definition adopted here is the one enacted in the 2012 Paris OER Declaration (UNESCO, 2012), during the 1st World OER Congress, by UNESCO Member states, COL, and the global OER expertise community:

> OER are 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 (UNESCO, 2012, p. 1).

Unlike UNESCO's 2002 previous OER definition that puts special emphasis on digital ecologies, UNESCO's 2012 definition is much broader, including both digital and non-digital resources in the OER scenario. Also, the original commitment to higher education is widened to include "education at all levels, both formal and non-formal, in a perspective of lifelong learning" (UNESCO, 2012, p. 2).

Under this definition, OER resources include "full courses, course materials, modules, textbooks, streaming videos, tests, software, massive open online courses (MOOCs) and any other tools, materials, or techniques use to support access to knowledge" (Hodgkinson-Williams, 2013, p. 9). Concerning the granularity of OER resources, they can vary considerably. They can be produced as large as a textbook or as small as a single image, depending on the educational intention, audience, and ease of production (Butcher, Hoosen & Moore, 2014)

A distinctive feature of the OER definition is on the open license allowing the use, adaptation, and redistribution of the resources. This more specific concept of OER evolved from broader concepts developed in the Open Movement. Inspired by two initiatives of the Open Movement introduced after the 1980s, the free software (identified as freedom, not price) and open source (emphasis on exchanging programming code for software development), David Wiley (2014) coined the term Open Content in the late 1990s when he applied the first widely adopted open licensing for content, allowing content to be copied, reused or repurposed freely. This Open Content phenomenon of sharing digital content has evolved into the OER initiative of openly sharing educational materials through Wiley's 5Rs (2014) activities to retain, reuse, revise, remix and redistribute educational resources:

Retain – the right to make, own, and control copies of the content.
Reuse – the right to use the content in a wide range of ways (on a website, in a video).
Revise – the right to modify or alter the content itself (a translation).
Remix – the right to combine the original or revised content with other open content to create something new (a mashup).
Redistribute – the right to share copies of the original content, your revisions, or your remixes with others. (n.p.).

Closely related to Wiley's (2014) 5 Rs of Openness are the Creative Commons licenses. Creative Commons (CC), an internationally active and non-profit organisation, is a companion to the OER initiative, founded in 2001. Like the free software and open-source initiative, it targets collaborative and community-minded ends. CC has developed a Web application that provides standardised free licensing tools that allow the public to legally share their work under the permission of their choice (Green, 2017). Unlike the General Public License for software, CC elaborated set of licenses are designed for varied creative works such as websites, images, music, film, photos, literature, videos, courseware. CC licenses "have already been applied to more than 1.2 billion copyrighted works across 9 million websites" (Green, 2017, p. 31). There are six main licenses to choose from when publishing work under CC terms to make it OER, which are based on four conditions – attribution, no derivative works, share alike, non-commercial (Green, 2017), as follows:
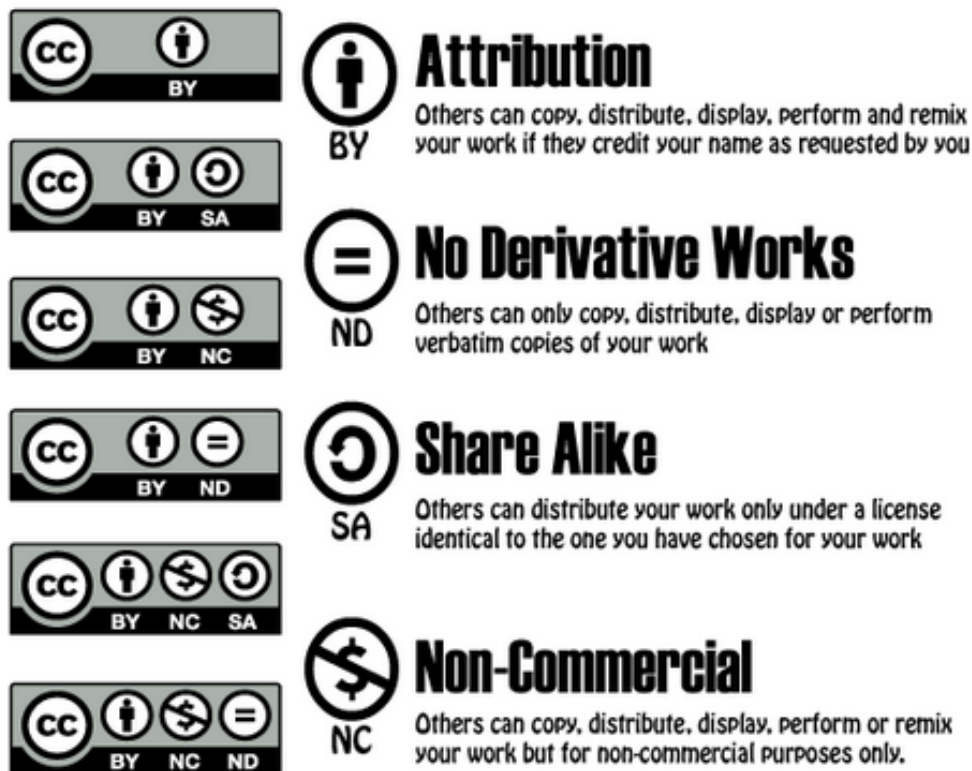

Figure 1: The six Creative Commons licenses
Source: <http://classes.dma.ucla.edu/Winter13/161/projects/students/betty/project-4/html/Licenses.html.>

3. Documents description: Open Educational Resources: Global Report 2017 and Ljubljana OER Action Plan 2017

As mentioned, our data are based on the two documents organised and published in 2017 – Open Educational Resources: Global Report 2017 and Ljubljana OER Action Plan 2017. The first was produced by the Commonwealth of Learning (COL) and UNESCO, from December 2016 to May 2017, and based on data triangulation collected from six regional consultation reports and two parallel processes: open and online surveys sent to UNESCO member states and key stakeholders in OER community. The round of six regional consultations was held around the world in six host countries, whose schedule and meeting venues were the following: Asia (December 2016); Europe (February 2017); the Middle East/North Africa (February 2017); Africa (March 2017); Latin America and the Caribbean (April 2017); Pacific (May 2017). The consultations were a joint effort of COL, Government of Slovenia, and UNESCO which were attended by government officials, intergovernmental organisations, educational institutions, private sectors, civil society, teachers, and librarians, at a total of 257 participants from 105 countries. The regional consultations[1], under the title 'OER for Inclusive and Equitable Quality Education: From Commitment to Actions', brought the outcomes of the workshop discussions regarding the following aspects: an overview of OER in the region, successful OER implementations, national OER policies, and SDG4, actions to address the OER challenges - capacity building for users to access, reuse and share OER, language and culture issues, ensuring inclusive and equitable access to quality OER, changing business models and the development of supportive policy environment (COL, 2017a, 2017b; Kanwar, 2017; UNESCO & COL, 2017).

Regarding the open and online surveys sent to UNESCO member states and key stakeholders in OER community, they served to map the OER state-of-the-art from countries/regions globally. The former was answered by 102 ministries responsible for the education system in all UNESCO and COL Member States and the latter was answered by 600 key stakeholders, namely local governments, policymakers, teachers, librarians, learners, intergovernmental organisations, civil society organisations, educational institutions, quality assurance agencies, and research agencies. Some of the challenges highlighted in the government surveys include strategy and policy, OER activities, challenges for mainstreaming OER for sustainable development, while the stakeholders' responses concentrated on the critical areas of OER awareness raising, participation in OER activities, and barriers to OER implementation (COL, 2017a, 2017b; Kanwar, 2017; UNESCO & COL, 2017).

The second document is, as informed, the Ljubljana OER Action Plan 2017, built upon the outcomes of the Global Report that identified the major highlights of OER, the OER activities, and initiatives and the challenges encountered by governments and stakeholders around the world to mainstreaming OER. It was also based on the inputs from the parallel sessions, debates, and workshops of the

2nd World OER Congress 2017, compiled by a high-level drafting group, chaired by the president of the Congress, regional governmental representatives, non-governmental and civil society stakeholder groups, as well as representatives of the UNESCO Secretariat and the Ministry of Education of Slovenia.

The Ljubljana OER Action Plan 2017 presents concrete actions, divided into five key areas, each of which is broken down into strategic recommendations. Hence, the 2nd World OER Congress 2017, aligned with the deliberation of the Ljubljana OER Action Plan, represents the transition from previous commitments made in the 1st World OER Congress 2012, with the adoption of the Paris OER Declaration, to concrete actions that need to be done by UNESCO member countries worldwide, with a vision to systematic and mutual efforts to harness OER full potential (Ljubljana, 2017).

Concerning partnerships and funding, the compilation of the Open Educational Resources: Global Report 2017 and the Ljubljana OER Action Plan 2017, as well as the organisation of 1st World OER Congress 2012 and the 2nd World OER Congress 2017, were supported by William and Flora Hewlett Foundation, administered and organised by COL, in collaboration with UNESCO.

4. Open Educational Resources: Global Report 2017

In what follows, we first present some of the main outcomes of Global Report 2017 based on the six regional consultations and the surveys conducted to identify the level of OER adoption and implementation since the enactment of the 2012 Paris OER Declaration. The six regions are presented here according to the order the regional consultations were held globally from December 2016 to May 2017: Asia, Europe, the Middle East/North Africa, Africa, Latin America, and the Caribbean and Pacific.

4.1 Asia

A total of 20 countries from Asia participated in the governments and stakeholders' surveys and consultation. The consultation was organised by COL, CC, Government of Slovenia, and UNESCO in collaboration with the William and Flora Hewlett Foundation. It was held in December 2016, in Kuala Lumpur, Malaysia, hosted by the president of Asia eUniversity. Some of the important OER practices developed in the Asian region are:

- India: 2,000 courses from 600 universities are available as OER; The National Programme on Technology Enhanced Learning in Bombay release materials under a CC license (CC-BY-SA) in one of the largest educational repositories in the world in engineering, basic sciences and humanities, and social science, with over 20,000 videos and 300 million visits; Massive open online courses (MOOCs) that are being developed with public funds are available as OER, provided by the open platform MOOKIT.

- Bangladesh: Bangladesh has a national teachers' portal as a government initiative. Bangladesh Open University has an OER policy.

- Hong Kong (China): OER government policy has been developed in the primary and secondary school curricula for language courses.

- Indonesia: The University of Terbuka has an institutional OER policy, and offers an OER portal. OER materials enrich teaching practices.

- Japan, Indonesia, Malaysia, Philippines, Vietnam Universities have OER repositories.

    Some challenges and gaps to mainstreaming OER in the region are:

- Funding and support for OER initiatives from governments are required.

- Improved technological infrastructure and connectivity are needed.

- Awareness raising and targeted capacity-building to access, reuse, remix and share OER.

- Need to produce OER in native languages.

- Reduction of material costs for students.

4.2 Europe

Europe was represented with 24 countries in the surveys and consultations. The event was co-hosted by the Ministry of Education and Employment and the Commonwealth Centre for Connected Learning at Malta, held in February 2017. Some of the highlights of the multiple OER activities carried out in Europe:

- Latvia: An OER repository was developed by the Latvian National Library, co-financed by European Regional Development Fund, and by the national government.

- Netherlands: The Delft University of Technology and the Open University maintain OER repositories. The repository called VO-content provides OER materials for secondary education.

- Finland: The national curriculum framework for primary education offers an open library of content (licensed under CC BY 4.0). Higher institutions

are members of the Open Education Consortium, a non-profit organisation that promotes openness in the education field worldwide.

- Slovenia: The development of the project Opening Up Slovenia, a bottom-up initiative, to support open education research from 18 countries in Southeast Europe; The platform GÈANT OER provides multimedia and interactive educational materials under CC licenses.

- Lithuania and Romania: The translation of OER from English into local languages is the result of individual efforts. So, a way to address this challenge has been to focus on the production of OER in their native languages.

- Germany: The OER World Map, funded by the Hewlett Foundation and developed and tested in Germany, offers a comprehensive view of the development of the global OER ecosystem. Since 2013, it has been collecting, registering, and sharing data concerning OER actors, repositories, organisations, research, services, projects, and events.

- The United Kingdom: Research on OER conducted by the OER hub at the United Kingdom Open University has contributed to assisting researchers in investigating OER policies, teaching, and learning.

Some top priorities to reinforce the development of OER:

- Consider the diversity of languages and cultures in the production of OER when establishing regional policies and when developing technologies for repositories.

- Need for political will regarding OER initiatives.

- Enhanced commitment from governments in supporting OER efforts made by educational institutions.

- Find solutions for the challenges of translating OER (cost of translation and lack of skills)

- Identify new solutions to change business models so that the interests of the publishing industry actors and the OER community are considered.

4.3 Middle East and North Africa

The Middle East and Northern Africa (MENA) surveys and consultation gathered 13 countries. The Mena consultation was held in February 2017 and

hosted in Doha, Qatar in partnership with Reach Out to Asia, a non-profit organisation launched in December 2005 in Doha, Qatar, operating under the auspices of the Qatar Foundation. Some of the OER Implementations in the MENA region are:

- Morocco: The project Opening up Education in South-Mediterranean countries (Open Med), supported by the Erasmus Plus programme of the Europen Union, has been committed to widening the adoption of OER in the Higher Education sector in the South-Mediterranean countries since 2015.

- Saudi Arabia: UNESCO together with the National Center for e-Learning and Distance Learning held a three-day 'Policy and Governance Workshop on Developing Open Educational Resources Policies', in Saudi Arabia, in 2015, to review necessary changes in OER national policy to build teacher capacity in using OER.

- Sudan: The Open University of Sudan provides OER materials for the university level and they have been putting efforts in translating English and French materials into Arabic and in publishing the translated materials under CC licenses.

- Tunisia: The Arab League Educational, Cultural and Scientific Organisation concerned with the development of education in the Arab world, supports the OER Commons Hub. It has a multi-lingual (English, French, and Arabic) user interface, offering links to OER common groups in the 22 Arab countries.

Some of the challenges identified to mainstreaming OER in the region:

- Need to build translation expertise. Translation of OER into local languages is a big issue considering the poor translation skills for indigenous and endangered languages of the region.

- Need for crowdsourcing/communities devoted to ensuring quality learning materials and translation quality standards.

- Emphasis on the production of OER in Arabic to fully realise the potential of OER.

- More collaboration and coordination between government and educational institutions to drive a systemic integration of OER into the educational system.

- More technically trained teams, subject matter experts, and language editors.

4.4 Africa

Africa accounted for 23 countries in the surveys and the regional consultation. The meeting was held in Mauritius and hosted by the Ministry of Education. Some highlights from successful OER initiatives in Africa are:

- South Africa: The project Research in OER for Development (ROER4D) is a Global South Open Education Network, launched in 2013, at the University of Cape Town. It covers about 18 sub-projects in various countries in South America, Sub-Saharan Africa, and South and Southeast Asia. It aims at building a body of research on OER practices from basic and post-secondary education to contribute to the improvement of OER policies, practices, and research. The project was awarded the Open Research Award in 2016 by the Open Education Consortium; OER Africa is an initiative of the South African Institute for Distance Education (SAIDE) to build research networks and communities of practice by implementing and expanding OER content in higher education in the country; The African Storybook is also developed by SAIDE, a literacy project since 2014 that offers about 800 picture books in 111 African spoken languages for children literacy development. The stories can be created, adapted, downloaded and printed from a national free learning platform; Siyavula (a Nguni word for opening) is another OER project since 2002 that produces open high-quality textbooks under CC licenses, spanning Mathematics and Science subjects from Grades 4-12, offering about fifty titles.

- Mauritius: The University of Mauritius has an institutional policy for the development of e-learning courses that promotes the production and use of OER.

- Namibia: The Namibian College of Open Learning developed an OER project in 2012 to offer self-study materials in print and digital format in 5 subjects for the students.

Some of the key priorities to advance the development of OER in the region are:

- Capacity-building programmes needed to find/share/create/re-mix OER effectively.

- Shift from less consuming to more producing OER using available technologies.

- Need to address accessibility issues to make OER accessible to people with disabilities.

- Supportive governmental policies to guarantee the use and improvement of OER.

- Development of new business models for the emergent OER and the educational publishers.

4.5 Latin America and the Caribbean

The surveys and regional consultation involved 16 countries. The consultation, held in São Paulo, Brazil, in April 2017, was co-hosted by the UNESCO Chair in Distance Education[2], established at the time at the State University of Campinas (UNICAMP). Some successful OER initiatives in Latin America and the Caribbean are highlighted:

- Brazil: Educapes is an openly licensed repository launched in 2016 by the Open University System of Brazil (UAB) in conjunction with the Coordination for the Improvement of Higher Education Personnel (CAPES). It is a federal portal, hosting educational objects for educators from the basic, higher, and post graduate education; *Ciênsação* is an open repository for basic education that delivers simple hands-on experiments that can be implemented by teachers in classes. It contains more than 100 experiments, licensed with a CC BY-SA license. Each experiment is developed, tested, photographed, and repeatedly reviewed by a group of volunteers and then published in Portuguese, Spanish and English for Latin America teachers to foster the study of science based on experimentation and practice. The repository started functioning in 2015, with the support of UNESCO Brazil; Other OER initiatives are The MIRA project[3], REliA[4], REA Paraná[5], REALPTL[6] and REAMAT[7], among others, that build awareness on the importance of OER for inclusive and equitable quality education.

- Brazil and Chile: These two countries have received the title of OER country champions[8] in Latin America.

- Mexico: TEMOA (in Nahuati language – to seek, to investigate) is a knowledge hub that supports a public multilingual collection of OER filtered from other servers for the educational community. Their published collections involve a review process by an academic community (contributors, auditors, catalogers and editorial reviewers) to ensure the quality of OER. The initiative was developed by the private institution Virtual University of Monterey and since 2008 the hub's ultimate aim is to integrate OER into teaching.

- St Lucia: The University of the West Indies Open has an institutional OER policy in place.

- Antigua and Barbuda: Commonwealth of Learning (COL) is funding initiatives like OER technical and pedagogical capacity for teachers.

- Chile: Institutional policy for Open Access and Open Data.

- Uruguay: OER is sponsored by COL. Neither the Government nor the private sector supports OER initiatives.

- St Vincent and the Grenadines, Venezuela, St Lucia: some other countries which OER funding is under COL support.

Some points to advance the adoption of OER:

- Need to produce OER in national languages.

- Development of strategies and policies at a national level to guide OER are required.

- Need to identify funding sources for the sustainability of OER programmes and projects.

- Increased number of institutional policies to harness the potential of OER.

- Create ways to develop business model formats to generate revenues to support the OER system.

4.6 The Pacific region

The participant countries in the surveys and the consultation comprised five. The Pacific Regional Consultation was held in May 2017, in Auckland, in partnership with the Open Polytechnic of New Zealand. Some of the key advances in OER in the Pacific are:

- Australia: The National Copyright Unit offers training annually for Primary, Technical and Further Education educators for the adoption of CC Licenses and OER in Australia; it is actively offering open education licensing and university-MOOC projects; the government endorsed the development and adoption of the International OER Guide and Toolkit, guidance on open licensing that conforms to Australian copyright law for the production of open educational materials. Australia has a national repository, called

Scootle, supported by Education Services Australia, with over 12,000 free digital resources, from which 1,600 resources are under CC Licenses.

- New Zealand: It has adopted the International OER Guide and Toolkit to address the need for the implementation of Open Education Practices.

- Tasmania and Swinburne: The university of Swinburne and of Tasmania were awarded in 2017 in the category of best tool for their Open Education Licensing Toolkit by the the Open Education Consortium, which annually grants awards for outstanding practices in the Open Education Community.

Some actions to be taken to strengthen OER in the context of the Pacific region:

- More awareness and sensitisation in local governments to integrate OER into the educational agenda.

- Intensification of OER research and practice by institutions to convince local governments and policymakers of the financial and economical OER sustainability.

- Enhanced encouragement from stakeholders to engage in the use, creation, repurposing, and sharing of OER materials.

- Need to reduce the spending on textbooks and copyright clearance.

- Need to produce OER for curriculum enhancement.

5. The Ljubljana OER Action Plan 2017

As stated, the Ljubljana OER Action Plan 2017 builds upon data from Open Educational Resources: Global Report 2017, as well as upon relevant resolutions adopted by experts, national delegates, ministers, and representatives from 111 countries that took part in the 2nd World OER Congress in Slovenia. The Action Plan, which is in full conformity with the purposes of the 2030 Agenda for Sustainable Development, reaffirms the commitment to integrate open-licensed resources into the education systems to achieve SDG4 on quality and lifelong education. To this end, five critical areas of concern are outlined and 41 concrete actions altogether are proposed and, various actors including governments, intergovernmental agencies, educational institutions, quality assurance agencies, private sector, funding bodies, civil society, teachers, and librarians are called upon to take effective actions to sustain OER adoption and development. The Plan argues that there is an urgent need to advance and implement mechanisms of actions for the following five strategic areas of concern:

1. Build the capacity of users to find, reuse, create and share OER.

2. Support to produce and adapt OER appropriate to local languages and cultures.

3. Ensure inclusive and equitable access to quality OER.

4. Develop sustainability models.

5. Develop supportive policy environments.

In each of the five critical areas, specific recommendations are suggested:

1) build capacity and training of users to find, reuse, create and share OER under an open license, by providing continuous and sustainable engagement through strong incentive mechanisms in OER research and practice for both in-service and pre-service professionals at all levels of education.

2) promote production and adoption of linguistically and culturally sensitive OER to local communities, by empowering educators to create relevant local language OER, particularly those languages which are less used, under-resourced as well as indigenous languages.

3) support accessibility and inclusiveness of OER-based learning for vulnerable groups of population in formal and non-formal educational environments, by providing the access to resources and the access to OER websites.

4) create new sustainable business models with new formats of revenue generation through partnerships between public and private sectors, donors, memberships, crowdfunding, non-governmental organisations (NGOs) or intergovernmental organisations (IGOs) to support OER research and practice for successful educational outcome.

5) develop supportive OER policies at the governmental level (top-down collaboration) that anchor initiatives at the institutional level (bottom-up collaboration), encouraging stakeholders to adopt OER fully into the curriculum rather than simply having them as 'adds-on' resources.

6. Discussion based on the documents: Open Educational Resources: Global Report 2017 and the Ljubljana OER Action Plan 2017

The outcome of the Open Educational Resources: Global Report 2017 puts forward successful OER initiatives and special concerns – areas of particular urgency that stand out as priorities to convert OER commitment into effective action (see section 4). The report highlights relevant OER concrete actions carried out in the six regions mostly by grassroots engagements from both developed and developing countries worldwide but it also argues that government policies and engagement have been modest regarding the support to promote the

uptake of OER, and much that has been accomplished so far has been through the mobilisation of resources and funding by universities and institutions from foundations and philanthropic organisations, intergovernmental agencies and civil society organisations. To date, it appears that most of the initiatives in OER have been undertaken through collaborative engagements with UNESCO and COL, with support from the Hewlett Foundation (COL, 2017a, 2017b).

The publication provides critical input for enhanced attention to regional variations regarding OER development and specific OER key priorities. It points out that there is an unequal level of OER adoption and appropriateness within each region. While some regions find themselves in the advancing stages of analysing and critically questioning their OER policies, business models, sustainability issues, and practices, there are still some regions in the initial process of awareness-raising on OER use, adoption and benefits. Yet, some other regions can be considered in an intermediate stage in many OER-phased implementation schemes, tackling capacity-building, ICT[9] infrastructure, government, and institutional OER policy issues. Not to mention some countries worldwide which are just on the threshold of joining the OER movement.

The document argues that in Asia "governments have invested heavily in support of educational technology" (COL, 2017b, p. 54) "but not necessarily with a national policy on OER" (p. 51). Nonetheless, "they are now beginning to recognise policy initiatives in OER and several countries have recently taken steps in that direction" (p. 54). The document stresses that "the region offers a huge amount of OER through different initiatives, but national OER policies are mostly lacking" (p. 51). Their main concern is "related to lack of awareness of OER, due to the sheer size of the population in Asia, understanding of OER is not uniform in either government or academic circles" (p. 51).

In Europe, "most countries are involved in OER, and there has been notable progress in the European Union since 2008 toward opening up education" (p. 4). The findings of the report reveal that "current OER efforts are driven mainly by universities and institutions, and thus a specific priority for the region is to gain committed government support, with a cohesive OER policy, actions and measures" (p. 4). Another pondered point is that "the strong presence of reputable and viable commercial publishers in the region requires the development of business models for value addition to OER to increase use and adoption" (p. 4).

The Middle East and North Africa (MENA) region "is bound by a common language, Arabic, but has an uneven development of OER" (p. 4). The report notes that while "some countries have reportedly developed national OER policies, participants from other countries said they heard about OER for the first time when they attended the MENA consultation" (p. 4). As such, MENA key priorities "focus on capacity building in OER, including raising awareness of OER" (p. 4). In Africa, "policy plays an important role, as funding is attached to the policy, and therefore coherent policies and strategies for adopting OER are required" (p. 53). Although several successful OER initiatives in Africa are highlighted, there is "the need to bridge the digital divide and focus on providing

electricity and reliable bandwidth" (p. 53), and "concerns are also raised about translation and its cost" (p. 49).

In spite of "the lack of appropriate OER policy solutions" (p. 53), the Latin America and the Caribbean region present some relevant OER initiatives (see 4.5 section). In the last two or three years, there has been a modest but positive federal OER commitment "due to the push from the public, policymakers are now strongly encouraged to pay attention to mainstreaming OER, as, for instance, in Brazil" (p. 55). The regional priorities raised in the report are regarding "the English language dominance of OER, and thus a priority for the region is to create OER in Portuguese and Spanish" (p. 55) and "the challenges of access to technology and the need for capacity building in using and reusing OER" (p. 55).

In the Pacific region, "apart from Australia, Fiji, and New Zealand, there is little discourse on OER policies" (p. 54). The report reveals that "there is a general lack of awareness among various types of stakeholders about the relevance of OER, and thus mobilisation and awareness campaigns are important." (p. 54). Another remark is that "mainstreaming of OER depends on an ability to reflect the rich linguistic diversity in the region" (p. 54). Thus, the research evidence shows that OER adoption and use manifest themselves differently for different regions worldwide, and not all regions share the same top priorities in OER, and even if they do, they do not take those priorities at the same pace. Despite significant progress in many countries and regions, OER awareness, development, and expansion are not yet an equal reality for most people, countries, and regions. Collaborative efforts from regional policymakers and stakeholders are crucial to mobilise resources for OER initiatives to take root into different education systems around the world (COL, 2017b).

As informed (section 5), five years after the adoption of the 2012 Paris OER Declaration, the Ljubljana OER Action Plan 2017, produced during the 2nd World OER Congress, proposes a set of measures to achieve transformative goals for education at all educational levels, from primary to tertiary, including lifelong learning opportunities. The Action Plan "embodies a collective will to convert OER commitment into concrete actions to help achieve SDG 4 through the key pillars of access, equity, and inclusion" (Ljubljana, 2017, p.7). To this end, the Action Plan strategically focuses on the following five priority action areas: capacity building; language and culture barriers; inclusive and equitable access; business models, and policy environments. The document is action-oriented and globally applicable. It takes into consideration different OER local and national realities as well as levels of socio-economic development, and it respects local and national top priorities and policies. It calls on stakeholders to embrace national and global efforts through collaborative approaches as well as through collective network actions, with each region or country setting its specific targets guided by the global goals for mainstreaming OER to support the targeted SDG 4 by the 2030 Global Education Agenda (Ljubljana, 2017).

7. Final considerations

The outcomes of the two complementary documents presented above provide a broad account of the successes and challenges of OER worldwide and identify global actions to mainstream OER to achieve SDG4. The data show that although the six regions and countries around the globe present significant results concerning OER awareness and projects, they have not progressed in the same way or at the same pace. The regions show different priorities in OER use and they find themselves at different stages of OER adoption, ranging from initial to more advanced implementation plans. Also, most of the regions' initiatives are grassroots efforts of educational institutions, civil society, and intergovernmental organisations. It is evidenced that government policies do not always support OER uptake, use and reuse in education systems as a priority (COL, 2017b; Ljubljana, 2017).

OER have gained ground worldwide in the last decade mainly in the tertiary education through the commitment of many of UNESCO's partners in the area, including COL, CC, OER Africa, Open Education Consortium, Knowledge 4 All Foundation, Open Society Foundations, OERu and other like-minded organisations in delivering sound strategies, resources, and projects for the deployment of OER in education systems. Also, OER are consistent with the growing trend of internationalisation of higher education[10], driven by partnerships and collaboration between institutions. The internationalisation strategies that focus on academic curricula and scholarly collaboration can be potentially enhanced by the OER collaborative global plan whose aim is "to strengthen the democratisation of knowledge by making learning/teaching materials open to learners/educators at a larger scale while at the same time provide educational options" (Ljubljana, 2017, p. 7) that can be accessed, reused and adapted to local contexts.

Another motivation behind OER is that educational institutions from around the world are increasingly sharing their digital learning resources over the internet as OER (COL, 2017a, 2017b; OECD[11], 2007a; 2007b). On this ground, the OER movement comes to complement and reinforce the global trend of e-learning that is becoming part of the mainstream of open systems and is viewed as promising to give rise to new opportunities for formal or informal learning outside formal contexts. As OECD (2007a, p. 23) states, "one of the main driving forces for efficient and quality e-learning in the future is likely to be OER, which is a tremendous opportunity for everyone to share, use, and reuse the world's knowledge." Furthermore, the OER phenomenon "can be seen as the emergence of creative participation in the development of digital content in the education sector" (p. 21). In this regard, thanks to Web 2.0 tools and its participatory culture (Jenkins et al., 2009) that compose highly generative ecosystems for creative open learning practices and that, in turn, have allowed for the emergence of innovative digital resources, practices, and processes based on social values of creation, collaboration, inclusion, and equity. Such resources, practices, processes, and

values are at the heart of OER initiatives whose aim is to foster a worldwide movement in support of equality of educational opportunity.

Taken together, we could argue that the deliberations based on the two documents: Open Educational Resources: Global Report and the Ljubljana OER Action Plan helped, to a large extent, lay the groundwork for preparing strategies to enable the OER education community worldwide to join forces to tackle the current and unexpected educational challenge of school and university closure, enforced by COVID-19. In this regard, we can refer to Zhan and Huang's words, who point out the importance of open educational practices during this critical time, "Open Educational Resources have never been so urgently and broadly needed like today" (Zhan & Huang, 2020, preface). The authors remark that "it is, therefore, more than ever essential that the global community comes together now to foster universal access to information and knowledge through OER" (Chakchouk & Giannini, 2020, preface).

Most importantly, OER facilitates peer cooperation in the sense that teachers can share OER in national and international educational repositories to solve their problem of limited time for the preparation of online content during the pandemic (Huang at al., 2020). Additionally, they can use other affordances like open authoring tools and enabling technologies to offer an active learning ecosystem with and within the e-learning environment (Huang at al., 2020).

As such, UNESCO and its partners released in May 2020, a handbook called 'Guidance on Open Educational Practices during School Closures: utilising OER under COVID-19 Pandemic in line with UNESCO OER Recommendation' to provide the global community with practical applications of open education resources during schools and universities disruption (Huang at al., 2020). The Guidance, in effect, is primarily built on the five lines of action, outlined in the Ljubljana OER Action Plan 2017 and subsequently reaffirmed in the Recommendation on Open Educational Resources (UNESCO, 2019) for OER adoption: capacity building, supportive policies, sustainability models and international cooperation. As such, it is a follow-up to the five areas of concern compiled during the 2017 OER Congress in Ljubljana addressed in the previous section.

The handbook brings OER use "during COVID-19 outbreak through global vivid stories and experiences and in line with the five UNESCO objectives" (Huang et al., 2020, executive summary). The stories describe OER applications in places like China, Africa, Romania, Italy, Korea, Romania, Spain, Russia, and the USA, and reveal teachers' efforts to produce and share OER in school repositories and virtual language learning communities (Huang et al., 2020). In other words, the publication shows examples of OER advocates efforts worldwide to develop and deploy open educational practices to help to mitigate the coronavirus pandemic while protecting the basic right to education which lies at the heart of human rights (Huang et al., 2020).

The Guidance draws on different disciplinary fields associated with the benefits of open education practices. Particularly, in the realm of L2 or FL learning and teaching, it brings some illustrative examples of how open practices can

maintain motivation in language classes during this long-term online learning. For instance, one of the stories describes how collective actions have ensured open learning for 7th graders in a school, in Romania. This happened when the class teacher at the 'Romanian Language and Literature' course on Zoom, invited the librarian to accompany the group by WhatsApp, "to exchange ideas and to encourage discussion with the pupils" (p.15).

Another illustration is how the Universidad Internacional de La Rioja in Spain provides learning opportunities by applying open educational practices for language courses during these challenging times. The university database 'The Open Education Hub' offers many courses in English, Spanish, French, Italian, Greek, Arabic, and other languages. According to Huang et al. (2020), "the courses are free of charge, and they all encourage the use, creation and sharing of open education good practices, with a special care on the integration of informal, formal and non-formal settings" (p.20).

In brief, such stories exemplify some open materials and open tools that educational professionals have exploited to harnessing the potential of OER in language classes during this devastating halt worldwide.

Collectively, the policies and actions informed by the documents – Open Educational Resources: Global Report 2017, the Ljubljana OER Action Plan 2017, and 'Guidance on Open Educational Practices during School Closures: utilising OER under COVID-19 Pandemic in line with UNESCO OER Recommendation', provide evidence that the emerging educational ecology of OER is a philosophy of participation, inclusion, and equity (Blyth & Thoms, 2021). That said, we underscore the importance of openly producing, sharing, and disseminating teaching and learning materials and tools given the pressing need to safeguard education from the learning loss caused by Covid-19 (Blyth & Thoms, 2021). Also, the need for governments and relevant stakeholders to "develop a commonly agreed framework (…) towards the digital inclusion of disadvantaged and marginalised groups" (United Nations, 2021, p 1)

To conclude, we can affirm the OER initiatives alluded to above perfectly resonates with what is *"said in the sacred book of the Maya Popol Vuh: Que no sean ni uno dos ni tres. Que todos se levanten. Que nadie se quede atrás. Let it not be two or three. Let all rise. Let no one be left behind"* (Power, 1997, p. 7). Hopefully, "OER can help us get closer to such a world!" (Kanwar, 2017, p. 3).

Acknowledgment

Notes

1. https://www.oercongress.org/events/regional-consultation/
2. The UNESCO Chair in Distance Education is located at the School of Education at the University of Brasília, coordinated by Dr. Tel Amiel.
3. A mapping system for OER-related initiatives for basic education in Latin America.

4. A platform that brings together OER for educators and students.

5. An interinstitutional action created in 2014 by the Federal University of Paraná and the Federal Technological University of Paraná to disseminate OER production.

6. A repository for OER research and production of resources in Portuguese, English and Spanish for the licentiates.

7. An OER collaborative writing project on mathematics for teachers and students from universities and educational institutes.

8. Country champions refer to advocates who take the OER initiative forward through projects, research and practices within their own communities and countries (COL, 2017a).

9. Information and Communications Technology.

10. The process of integrating an international, intercultural and global dimension into the purpose (teaching, research, service) and the delivery of higher education. It refers to all aspects of internationalisation, whether it involves cross-border mobility or not (OECD, 2007b, p.23).

11. Organisation for Economic Co-operation and Development.

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