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THE RICH GLOBAL LANDSCAPE: AN OVERVIEW OF THE DEVELOPMENT OF OPEN EDUCATIONAL RESOURCES FROM 2002 TO 2019

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From late 2018 through early 2019, the Hewlett Foundation conducted a global landscape scan to inform its work in the area of Open Educational Resources (OER). The project focused on understanding the evidence base, research priorities, funders, and overall development of the field, and drew on input from open education experts, researchers, and funders; a broad examination of publicly available research; and data and themes that global open education leaders raised at the Paris Open Education Leadership Summit. The landscape scan aimed both to inform Hewlett's 2019 refresh of its OER strategy and to help the field evaluate its strengths, areas for future investment, and priorities.

Based on the scan as well as Hewlett's long history of engagement with OER, this document summarizes the growth and evolution of the global OER landscape since the early 2000s.

I. THE OER MOVEMENT HAS GROWN AND MATURED SINCE 2002

In 2002, the Hewlett Foundation began investing in OER, which 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."[1] From the earliest days, the foundation and many organizations around the world sought to support access to quality education that is equitable, inclusive, open, and participatory.[2]

Hewlett and its partners, including UNESCO, Creative Commons, and MIT, collectively launched the field at a time when *MIT's OpenCourseWare* initiative and *Creative Commons* were in their infancy[3] and the term *OER* had just been coined at UNESCO's Forum on the Impact of Open Courseware for Higher Education in Developing Countries.[4] At the outset, the field looked to form the technical infrastructure for OER,[5] create new openly licensed materials,[6] advocate for policies supportive of OER,[7] and research and raise understanding of OER and its promise.[8]

Since those early days, the OER ecosystem has grown, matured, and thrived. The abundance of OER manifests in numerous ways, including resources in languages spoken around the globe,[9] its use by teachers and students in mainstream educational settings such as higher education institutions,[10] and myriad *institutional and governmental OER policies*.[11] OER is present in many parts of the world, used both formally and informally by governments, institutions, and individuals.

II. OER CAN HELP TRANSFORM TEACHING AND LEARNING

Research shows that OER can live up to the initial vision for transforming education by providing greater access, flexibility, and affordability. Box 1 below provides key findings from the evidence base.

Box 1: The evidence base suggests OER can transform education by providing greater access, flexibility, and affordability.

Educators in varied contexts can leverage OER to improve their pedagogy and engage students. For example, a study in Sri Lanka found that after secondary-level student teachers were introduced to OER and given support to integrate it into their teaching, they shifted their mindsets and pedagogy to pursue more creative, innovative, sharing-oriented, and context-centric approaches.[12]

OER broadens access to educational opportunities for diverse students. For example, a global *survey* of 3,100 non-formal learners using OER repositories found they vary in age, gender, academic background, employment status, and disability status. These learners cited a wide range of motivations to use OER with over 80% noting the ability to study without cost and a majority citing the ability to access content at any time and online.[13]

OER can produce strong student learning outcomes. For example, an evaluation of the Teacher Education in Sub-Saharan Africa project (TESSA) in which primary school teachers-in-training at African universities were educated using OER found that OER had a "profound" impact on the trainees. Study evaluators cite a shift in teaching approaches to make trainees' learning experience more relevant as well as the availability of OER materials that promote activity-based, reflective learning that mirrors how trainees should teach their own future students.[14]

Teachers and students report OER is valuable. For instance, a *study* of over 650 primary and secondary teachers from 72 countries found that 72% agreed or strongly agreed that using OER allows them to better accommodate diverse learners' needs and 69% agreed or strongly agreed that using OER broadens the range of their teaching methods. A strong majority also agreed or strongly agreed that OER helps develop learners' independence and self-reliance (72%) and increases learners' satisfaction with the learning experience (68%).[15]

Cost savings for institutions and individuals using OER result in greater access and learning. For example, an *evaluation* of the OER Degree Initiative, which supported 38 two-year colleges in the United States to create OER courses, found that in its first two years students saved $1.3 to 2.6 million.[16] An *assessment* of Tidewater Community College's Z Degree, the zero textbook cost degree that helped inspire the OER Degree Initiative, is based on early OER course experiences and estimates that if all courses in the business administration degree pathway adopted OER, the college would increase annual revenue by over $100,000 due to reduced student drop rates.[17]

As OER use grows, researchers around the world continue to examine new innovations and applications to understand how to maximize OER's potential. In particular, researchers are diving deeper to understand open pedagogy, including how OER can improve teacher practice as well as scale effectively at the institutional level.[18] They are also beginning to explore how the work in OER can capitalize on new technological developments, such as blockchain, learning analytics, and artificial intelligence, to support technology-enhanced learning.[19]

III. GOVERNMENTS AND INSTITUTIONS ARE LEADING OER INNOVATIONS AND SCALING EFFECTIVE IMPLEMENTATION

As OER has demonstrated its potential and unlocked new opportunities, governments and educational institutions around the world have stepped up to support innovation and scale successes. In 2012, the 1st World OER Congress was organized by the Commonwealth of Learning and UNESCO with support from the Hewlett Foundation. This gathering marked a historic moment with the adoption of the *Paris OER Declaration* that called for governments to promote OER, including by freely sharing publicly funded educational materials.[20] In 2017, UNESCO and the Government of Slovenia, supported by the Hewlett Foundation, cohosted the 2nd World OER Congress, bringing together education ministers, decisionmakers responsible for human resources development, senior policymakers, expert practitioners and researchers, and relevant stakeholders. Some 500 participants representing more than 100 UNESCO member states attended the event, including 14 ministers of education, and generated the *Ljubljana OER Action Plan* to mainstream OER in support of the UN's Sustainable Development Goal (SDG) 4 (Quality Education).[21]

Other international events have maintained and built on this momentum. For example, in 2018, the Open Education Consortium hosted the first Open Education Leadership Summit in Paris, which gathered 176 people from 45 countries, including institutional and governmental leaders. Also that year, ministers of education from Latin American countries set up a meeting on OER in Brazil. A variety of conferences, such as the Creative Commons Global Summit, Open Education Conference, and OER Conference, convene OER stakeholders annually in rotating locations around the globe.

Government support has been crucial for OER, and institutions are also leading OER projects with the aim of establishing sustainable programs at scale. Box 2 provides examples of both.

Box 2: Government support and institutional leadership have been crucial for OER.

Governments

Fiji has adopted a *national OER policy* that includes a commitment from the Ministry of Education to maintain a high-quality OER repository and open licensing for publicly funded educational materials and research.[22]

Brazil has set *open licensing requirements* for digital resources that come with textbooks the government purchases for the nation's schools, and its Ministry of Education is developing an OER repository.[23]

In South Africa, Siyavula *partnered* with the Department of Basic Education to print and distribute copies of its open math and science textbooks, workbooks, and teacher guides to government schools across the country.[24]

Institutions

The University of the Western Cape has adopted a free content and free and open courseware *strategy*.[25]

In Canada, *BCcampus* is funded by the Ministry of Advanced Education, Skills & Training to support post-secondary institutions in British Columbia as they create, implement, and share OER.[26]

The Open University of Hong Kong established the *Open Textbooks for Hong Kong* project to create a sustainable system that provides high-quality open textbooks for teachers and students at the primary, secondary, and tertiary levels.[27]

Collaboration across institutions and governments at all levels (within countries, within regions, and across regions) has been essential to share lessons and spread best practices. For instance, at the Open Education Leadership Summit, participants formed 13 collaborative groups to develop roadmaps for cross-regional initiatives, such as open education research, nursing OER, open education in support of the UN SDGs, multilingual OER and OER for language acquisition, and Massive Open Online Courses (MOOCs) for peace and conflict resolution.[28]

The next phase of OER's growth requires continued and expanded government and institutional support to achieve greater reach and ensure quality implementation in service of countries' educational priorities. OER are crucial to achieving all 17 UN SDGs, and information and communications technology–related targets are addressed specifically in SDG 4 (quality education), SDG 5 (gender equality), SDG 9 (infrastructure), SDG 10 (reduced inequalities within and across countries), SDG 16 (peace, justice, and strong institutions), and SDG 17 (partnerships for the goals).[29] The draft UNESCO recommendation offers a strong foundation for member states to help OER continue to grow and flourish in pursuit of these goals.

IV. A VARIETY OF RESOURCES ARE AVAILABLE TO LEARN MORE ABOUT WORK AROUND THE WORLD

With the rich OER ecosystem, initiatives, policies, and champions exist around the world. For interested parties, several resources can help identify projects, people, and policies relevant to any country or region:

- **OER World Map:** The *OER World Map* collects and visualizes OER-related policies, organizations, projects, people, and services around the globe.[30] It can be used to find information and resources about open education by geography.
- **Research on OER for Development (ROER4D):** The ROER4D project aims to provide empirical research on OER adoption and impact in developing countries in the Global South. The team published its *research bibliography,* which compiles a vast array of open education–related research publications.[31]
- **Hewlett public grants database:** The Hewlett Foundation's *grants database* provides a searchable public tool that can be used to find OER projects the foundation has supported.[32]
- **Open Education Leadership Summit documentation:** The Open Education Consortium; the International Council for Open and Distance Education; the French Ministry of Higher Education, Research and Innovation; and the French Ministry of National Education and Youth convened the Open Education Leadership Summit in December 2018. A *summary report* provides highlights and findings from the meeting.[33]
- **Hewlett global landscape findings:** From late 2018 through early 2019, the Hewlett Foundation conducted a global OER landscape study to inform its strategy and the broader field. A *summary report* synthesizes findings.[34] The *research landscape* includes relevant articles and publications.[35]

For more information, please visit *https://hewlett.org/strategy/open-educational-resources/*.

[1] Second World OER Congress Ljubljana OER Action Plan 2017 (2017). Accessed Jan. 31, 2019. *https://en.unesco.org/sites/default/files/ljubljana_oer_action_plan_2017.pdf*.
[2] OER goals language drawn from Second World OER Congress Ljubljana OER Action Plan 2017 (2017). *https://en.unesco.org/sites/default/files/ljubljana_oer_action_plan_2017.pdf*.
[3] Our History. Accessed Jan. 31, 2019. *https://ocw.mit.edu/about/our-history/*.
Creative Commons. Accessed Jan. 31, 2019. *https://creativecommons.org/*.
[4] Forum on the Impact of Open Courseware for Higher Education in Developing Countries: Final Report (2002). Accessed Jan. 31, 2019. *https://unesdoc.unesco.org/ark:/48223/pf0000128515*.
[5] See, e.g., Grants: Rice University: For Connexions, An Experimental, Open-source Educational Technology Project (2002). Accessed Jan. 31, 2019. *https://hewlett.org/grants/rice-university-for-connexions-an-experimental-open-source-educational-technology-project/*.
[6] See, e.g., Grants: University of Michigan: For The Development Of Open Educational Resources To Support Health Education In Africa (2008). Accessed Jan. 31, 2019. *https://hewlett.org/grants/university-of-michigan-for-the-development-of-open-educational-resources-to-support-health-education-in-africa/*.
[7] See, e.g., Grants: Commonwealth of Learning: For Targeted Support For Open Educational Resources Activities And Core Support To Infuse The Principles Of Open Educational Resources Into The Commonwealth Of Learning's Wide Array Of Activities (2006). Accessed Jan. 31, 2019. *https://hewlett.org/grants/commonwealth-of-learning-for-targeted-support-for-open-educational-resources-activities-and-core-support-to-infuse-the-principles-of-open-educational-resources-into-the-commonwealth-of-learnings-wi/*.
[8] See, e.g., Grants: Open University: For The OER Research Hub (2012). Accessed Jan. 31, 2019. *https://hewlett.org/grants/open-university-for-the-oer-research-hub/*.
[9] See, e.g., African Storybook. Accessed Jan. 31, 2019. *https://www.africanstorybook.org/*.
[10] See, e.g., de Oliveira Neto, J. D., Pete, J., Daryono & Cartmill, T. (2017). OER use in the Global South: A baseline survey of higher education instructors. In C. Hodgkinson-Williams & P. B. Arinto (Eds.), *Adoption and impact of OER in the Global South*. Chapter 3 advance publication. Accessed Jan. 31, 2019. *http://dx.doi.org/10.5281/zenodo.154559*.
[11] OER Policy Registry. Accessed Jan. 31, 2019. *https://oerworldmap.org/oerpolicies*.
[12] Karunanayaka, S. P. & Naidu, S. (2017). Impact of integrating OER in teacher education at the Open University of Sri Lanka. In C. Hodgkinson-Williams & P. B. Arinto (Eds.), *Adoption and impact of OER in the Global South* (pp. 459–498). Accessed Jan. 31, 2019. *https://doi.org/10.5281/zenodo.600398*.
[13] 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. *EURODL (European Journal of Open, Distance and E-Learning)*, 18(2) pp. 50–74. Accessed Jan. 31, 2019. *http://oro.open.ac.uk/44962/*.
[14] Harley, K. & Simiyu Barasa, F. (2012). TESSA Teacher Education in Sub-Saharan Africa: Formative Evaluation Report. Teacher Education in Sub-Saharan Africa. Accessed Jan. 31, 2019. *http://www.tessafrica.net/sites/www.tessafrica.net/files/TESSA%20Executive%20Summary.pdf*.
[15] 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), pp. 23–40. Waynesville, NC USA: Association for the Advancement of Computing in Education (AACE). Accessed Jan. 31, 2019. *https://www.learntechlib.org/primary/p/151664/*.
[16] Lederman, D. (2018). Clear-Eyed Analysis of OER Impact. *Inside Higher Ed*. Accessed Jan. 31, 2019. *https://www.insidehighered.com/digital-learning/article/2018/08/29/clear-eyed-review-impact-initiative-create-oer-degrees*.
[17] Wiley, D., Williams, L., DeMarte, D., & Hilton, J. (2016). The Tidewater Z-Degree and the INTRO Model for sustaining OER adoption. *Education Policy Analysis Archives*, 23(41). This article is part of EPAA/AAPE's Special Issue on *Models of Open Education in Higher Education* Guest Co-Edited by Dr. Lisa Petrides and Dr. Cynthia Jimes. Accessed Jan. 31, 2019. *https://epaa.asu.edu/ojs/article/viewFile/1828/1763*.

[18] See, e.g., Cronin, C. (2017). Openness and Praxis: Exploring the Use of Open Educational Practices in Higher Education. *International Review of Research in Open and Distributed Learning*, 18(5). Accessed Jan. 31, 2019. *http://www.irrodl.org/index.php/irrodl/article/view/3096/4301*.
[19] See, e.g., Grech, A. & Camilleri, A. F. (2017). Blockchain in Education. JRC Science for Policy Report. Inamorato dos Santos, A. (ed.). Publications Office of the European Union. doi:10.2760/60649. Accessed Jan. 31, 2019. *http://publications.jrc.ec.europa.eu/repository/handle/JRC108255*.
[20] World Open Educational Resources (OER) Congress. 2012 Paris OER Declaration (2012). Accessed Jan. 31, 2019. *http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/English_Paris_OER_Declaration.pdf*.
[21] Ljubljana OER Action Plan 2017 (2017). Accessed Jan. 31, 2019. *https://en.unesco.org/sites/default/files/ljubljana_oer_action_plan_2017.pdf*.
[22] Fiji Higher Education Commission, Ministry of Education, Heritage and Arts. National Policy on Open Educational Resources (2016). Accessed Jan. 31, 2019. *https://wiki.creativecommons.org/images/1/13/Fiji_OER_National_Policy_Final.pdf*.
[23] Allen, N. (2017). Brazil Adopts Open Licensing in National Textbook Program. *SPARC*. Accessed Jan. 31, 2019. *https://sparcopen.org/news/2017/brazil-adopts-open-licensing-national-textbook-program/*.
[24] Goodier, S. (2017). Tracking the Money for Open Educational Resources in South African Basic Education: What We Don't Know. *International Review of Research in Open and Distributed Learning*, 18(4). Accessed Jan. 31, 2019. *http://www.irrodl.org/index.php/irrodl/article/view/2990/4225*.
[25] Keats, D. & Ridge, S. (2005). A *Free Content* and *Free* and *Open Courseware* implementation strategy for the University of the Western Cape. University of the Western Cape. Accessed Jan 31, 2019. *https://www.oerafrica.org/sites/default/files/freecourse-0.4.pdf*.
[26] About Us. Accessed Jan. 31, 2019. *https://bccampus.ca/about-us/*.
[27] About Open Texbook Project. Accessed Mar. 1, 2019. *http://www.opentextbooks.org.hk/about_open_textbook_project*.
[28] Open Education Leadership Summit Final Report (2019). Accessed Mar. 1, 2019. *https://drive.google.com/file/d/18Vrz3yvw9mP2P-1QBQQcxiYAEtWrg59m/view*.
[29] Sustainable Development Goals. Accessed Jan. 31, 2019. *https://sustainabledevelopment.un.org/sdgs*.
[30] OER World Map. Accessed Jan. 31, 2019. *https://oerworldmap.org/*.
[31] Hodgkinson-Williams, C. (2018). ROER4D open research toolkit: Bibliography. ROER4D. Accessed Jan. 31, 2019. *http://roer4d.org/3675*.
[32] Grants. Accessed Jan. 31, 2019. *https://hewlett.org/grants/?keyword=open%20educational%20resources&sort=date*.
[33] Open Education Leadership Summit Final Report (2019). Accessed Mar. 1, 2019. *https://drive.google.com/file/d/18Vrz3yvw9mP2P-1QBQQcxiYAEtWrg59m/view*.
[34] Redstone Strategy Group. (2019). Understanding the Global OER Landscape. Accessed Apr. 8, 2019. *https://hewlett.org/library/understanding-the-global-oer-landscape/*.
[35] Overview of the OER research landscape. Accessed Apr 8, 2019. *https://docs.google.com/spreadsheets/d/1FDOb_W8KzvQ1Z4lGZcLYquJsWBYg6ZgYEjpFbxBShWI/edit#gid=2086729060*