Chapter 13:

Measuring Implementation of UNESCO's OER Recommendation: A Possible Framework

Mohini Baijnath, OER Africa
Dr Merridy Strydom-Wilson, Neil Butcher and Associates and Neil Butcher, OER Africa

Introduction

Open educational resources (OER) have gained traction over the last decade and are increasingly being touted as one of the most significant educational innovations in the twenty-first century to date. The 2021 EDUCAUSE *Horizon Report: Teaching and Learning Edition*, cites OER as a key technology for the second year in a row. The term OER refers to teaching, learning, and research materials that are either (i) in the public domain or (ii) licensed in a manner that provides everyone with free and perpetual permission to engage in one or more of the 5R activities—retaining, remixing, revising, reusing, and redistributing the resources (Creative Commons n.d.).

These resources have been shown to enhance education delivery by improving access to relevant learning materials, reducing the cost of access (Annand and Jensen 2017), and improving student performance (Colvard, Watson, and Park 2018; Hilton 2020). Some have argued that OER have the potential to be an equaliser for education systems by spurring 'social inclusion in a pluralistic, multicultural, and imperfect world' (Olcott 2012). Ngugi and Butcher (2011), as cited by Baijnath (2017), go even further in explaining the potential of OER to revitalise higher education standards, improve the relevance of curricula, and promote collaboration and knowledge sharing between institutions, all with the ultimate benefit of serving students more effectively—much of which has been shown to be accurate in subsequent research (Hoosen and Butcher 2019; ISKME 2021; EMARGE Ed. Consultants Inc. 2017).

OER have become increasingly entrenched within the context of distance education provision because of their alignment with principles of open and distance learning. There are significant

resonances between OER and distance education as de Hart, Chetty, and Archer (2015: 21) explain;

> Contextualizing OER within a distance education environment, it can be argued that OER initiatives' aspiration to open access resonates strongly with the fundamental principle underpinning distance education. This principal [sic] is that spatial, geographical, economic and demographic boundaries must be reduced to facilitate and increase access to higher education.

At the global level, the Recommendation on Open Educational Resources (OER)[1] (40 C/32) was adopted at the 40th UNESCO General Conference in Paris on 25 November 2019 as the culmination of a long process of UNESCO's sustained engagement with the concept of OER. The Recommendation has five areas of action:

- building capacity of stakeholders to create, access, re-use, adapt, and redistribute OER
- developing supportive policy
- encouraging effective, inclusive, and equitable access to quality OER
- nurturing the creation of sustainability models for OER
- promoting and reinforcing international cooperation (UNESCO 2019)

The OER Recommendation draws significant inspiration from UNESCO's 2012 Paris OER Declaration, which was adopted at the 2012 World Open Educational Resources Congress. This document calls on governments around the world to adopt policies and support capacity development to promote the use of OER. Because of this exciting progress in formalising the use of OER, it has become critical to develop reliable tools to measure the impact of the Recommendation and in so doing, the influence of OER more broadly. Drawing on a comprehensive literature review of best practice in OER measurement, as well as experience of working with UNESCO to support implementation of the Recommendation, this chapter presents an initial framework for the measurement of the effectiveness of the OER Recommendation and proposes indicators that regions, countries, and/or institutions could adopt or adapt to rigorously measure both how OER is used and its effectiveness for improving learning. Putting in place shared understandings of what counts as effectiveness for OER is critical to inform ongoing developments and improvements in the field. Such measures can also provide an evidence base that can be used for advocacy work around the importance of OER for quality open and distance learning.

---

1 See http://portal.unesco.org/en/ev.php-URL_ID=49556&URL_DO=DO_TOPIC&URL_SECTION=201.html

Challenges in measuring OER

Not unlike the multiple pedagogies that fall within the ambit of distance education, there are several types of educational resources that can be classified as OER. This is beneficial when considering variation in pedagogical approaches, educational contexts, and learner needs. However, this diversity can also prove to be an obstacle when seeking to measure OER, as there are equally diverse implementation issues, results, metrics, and costs. Despite this, much research groups highly disparate educational resources under the term 'OER', which presents a challenge in extracting meaningful findings about the value of various sub-categories of OER (Shear, Means, and Lundh 2015: 12). A related challenge for OER research in distance education and beyond is the lack of consensus among researchers, practitioners, policymakers, and other stakeholders on how to define OER. Some do not know what OER are, while even those who are familiar with the term have inconsistent understandings of what falls under its umbrella. Adding to the ambiguity is the fact that many types of material including anything from individual learning objects to whole courses can bear a Creative Commons licence (Shear, Means, and Lundh 2015: 5). This drives home the importance of having any OER measurement tool contain clear definitions of what constitutes an OER.

Developing a measurement tool that is valid and reliable always presents a unique set of considerations and challenges. However, it is important because accurate measurement forms the foundation of robust research, which in turn contributes to the legitimacy and development of a research field and augments future implementation within that field. Although it is growing, OER-related research is relatively nascent in many countries and there is a dearth of empirical research that follows sound methodological approaches—not to mention that there is a paucity of literature on OER in general and OER use in distance education environments in particular. Where literature does exist: 'Researchers on OER have yet to adopt rigour in conduct of empirical studies, as in other fields of education. It could be due to its emerging nature or being rooted within Educational Technology, Information Communication Technology (ICT) and e-learning rather than as an independent field.' (Mishra et al. 2016: 57)

Compounding this issue is that several of the key attributes of OER make it a complex subject of traditional research designs. For example, efficacy studies depend on controlled conditions. However, the nature of OER, which permits users to remix and adapt content under certain licences, makes it difficult to draw comparisons between similar and strictly defined conditions. Despite this, studying the efficacy of OER implementation is incredibly valuable and necessary from a research

perspective: 'While it is always important to study efficacy in the context of implementation, with OER this is doubly true, as adaptation and implementation can change not only the effectiveness of the product but the product itself. This in turn adds complexity to the research task.' (Shear, Means, and Lundh 2015: 4)

Researching OER within the context of distance education is particularly nuanced. Although distance education may have previously been perceived by some as a peripheral mode of education, the COVID-19 pandemic, advances in technology, and fundamental reconfiguration of society through, for example, the fourth industrial revolution, have brought this delivery mode to the fore as a viable and practical form of education. This is not least because of its promise in widening access to education. Despite these resonances, surprisingly little has been written either inside academia or outside about how to measure the use and effectiveness of OER within distance education environments. This is surprising, particularly with OER being a developing trend, because an empirical evidence base on the use and effectiveness of OER could substantially aid their formal implementation.

There are frequently stated convictions about what OER can, should, or will achieve. This includes improving learning outcomes and teaching practice, supporting active and individual learning, reducing educational costs, promoting content localization, and improving access to knowledge (Hoosen and Butcher 2019). As a result, OER projects have traditionally focused more 'on developing and releasing OER content rather than researching its impact, and so reliable data is often absent' (Weller et al. 2015). As OER initiatives and activities gain traction around the world, there is an increasing need for reliable evidence on the impact and effectiveness of OER (Hoosen and Butcher 2019).

A further notable challenge involves the difficulties around tracking OER usage. This includes the fact that many OER users are not registered members of a platform, meaning that their activity cannot be tracked in detail, and that some or all of the OER lifecycle extends beyond repositories in which the resource may have been initially found (Orr, Rimini, and Van Damme 2015). Related to this is the question of how effective aggregation is in measuring OER impact. Simply aggregating findings for diverse types of OER is not especially useful if one is looking for a specific category of OER that may have impact and implementation issues which vary rather significantly (Shear, Means, and Lundh 2015: 12). These challenges present important considerations for developing a measurement tool as they beg the question of what can be accurately measured and how.

Best practice in OER measurement

Having examined the key challenges in measuring OER, the chapter will now turn its attention to best practice in OER measurement to draw from established methodologies and lessons. As noted above, relatively little literature is currently available on OER measurement. Nonetheless, there are several useful resources from which important lessons can be gleaned.

Awareness of the context is one of the key determinants of successful OER implementation. Blaschke (2016) emphasises the importance of understanding the context within which OER measurement is occurring, as well as the different approaches to adoption. The author adds (Blaschke 2016: 181):

> From the case studies and literature also emerged factors that contributed to OER success, such as executive management leadership and support; alignment of OER strategy with institutional mission and strategy; support and promotion of OER awareness and champions at all institutional levels; establishment of policies for OER management and measurement; incentives and motivational measures, e.g., by incorporating OER development into the tenure process and giving faculty control of intellectual property.

Although Blaschke (2016) is writing from an institutional perspective, there are valuable lessons for measuring national implementation—namely, that for measuring OER effectively, one should remain cognizant of the underlying contextual variations. There are also lessons from related UNESCO Recommendations that can inform measurement in the space of the OER Recommendation.

For example, against the backdrop of UNESCO's Recommendation on Science and Scientific Researchers (RSSR), the Responsible Research and Innovation Networked Globally (RRING) project[2] developed measures that can be used at different levels in member states' scientific systems to measure progress regarding implementation of the RSSR. RRING developed five levels of indicators,

2 The RRING project has been funded by the European Commission to develop an empirically informed global perspective on responsible research and innovation. It contributes to the development of a global framework for socially responsible research, including directly engaging with the monitoring process for the UNESCO Recommendation on Science and Scientific Researchers, with the production of an indicator's framework and specific survey instruments and items. See https://zenodo.org/record/4912589#.ZD09tS8RppQ

which includes 'top-down' (government and funders) and 'bottom-up' (research staff, research performing organisations, and general public) levels. RRING also identified ten priority areas for monitoring as the initial focus of RSSR implementation (Jensen and Lorenz 2021). By implementing the indicators across the five levels, RRING could follow progress in the implementation of the recommendations from national policy down to individual researchers (Jensen 2020). This approach is particularly useful because it adopts a holistic approach and places equal emphasis on all levels of implementation and stakeholders. It also embraces a systematic approach to impact measurement that allows a user to cross reference impact at different levels.

UNESCO and the Commonwealth of Learning (COL) recently published guidelines for policymakers and other stakeholders for reviewing, evaluating, developing, implementing, and measuring a context-relevant OER policy. They divide indicators into two types: quantitative and normative. The former results in a numeric value (such as a percentage of learners), while the latter determines whether specific norms have changed through modifying regulations or instructions. Normative indicators tend to be dichotomic (that is, successfully implemented or not) (UNESCO and COL 2019). This dual approach allows one to extract different metrics for different purposes and ensures that the limitations of one type of indicator are balanced by the benefits of the other, the ultimate result being that measurement supports different kinds of knowledge building.

Building on the idea of reflecting the complexities of OER measurement in a tool, the OER Global Monitoring Initiative is being undertaken by UNESCO to promote transparency about countries' OER activities and to facilitate benchmarking and learning between countries. The aim is to encourage heightened participation in OER to achieve progress towards the Sustainable Development Goals (SDGs)—particularly SDG 4 and 5 (quality education and gender equality) (UNESCO and COL 2019). In a presentation on Mainstreaming OER Towards Education 2030, Miao (2018) explains how to leverage OER for achieving SDG 4 targets, emphasising that several actors should share this responsibility. Within the framework, there are three conceptual domains and ten indicators. These are outlined in the table below.

Table 1: The OER Global Monitoring Initiative Framework

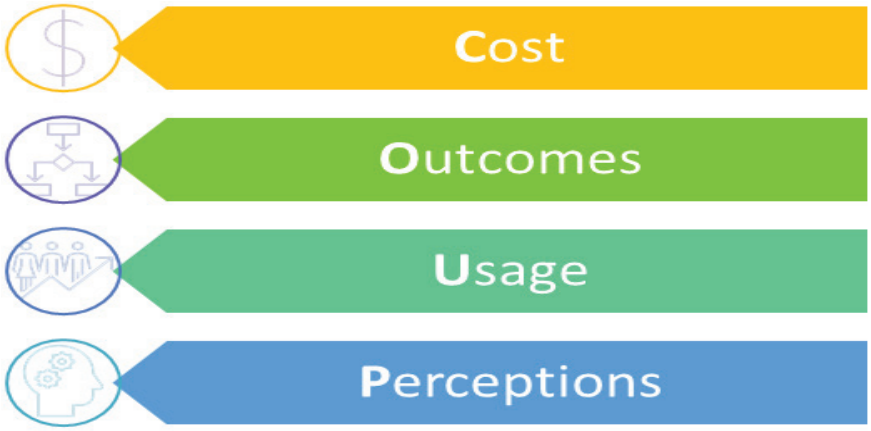
Conceptual domains	Benchmarks	Indicators
Government commitment	Governments in member countries have deliberate policies, strategies or programmes in place to create the enabling conditions for OER use across their national or provincial education system and in support of formal, informal, and non-formal learning.	Presence of a national or provincial OER policy, strategy, or program
		Proportion of education contexts covered by existing national or provincial policies, strategies, or programs for OER in education
Institutional adoption	Institutions in member countries have deliberate policies, strategies or programmes in place to create the enabling conditions for OER use across their campuses	Presence of local/institutional OER policy, strategy, or program
		Proportion of educators (for ISCED levels 1-8) using OER in their teaching by major subjects
		Proportion of learners (for ISCED levels 1-8) who have used student-facing OER as part of coursework by major subjects
		Proportion of educators who have created new OER
		Proportion of educators who have redistributed/shared existing OER
Teaching and Learning	Governments in member countries perceive progress with respect to the availability, quality, and affordability of education and learning materials; the quality of teaching and learning in institutions where OER has been adopted; and the use and sharing of OER by educators.	Proportion of institutions reporting that OER has contributed to improved teaching and learning
		Proportion of institutions reporting that OER has contributed to an increase in personalised instruction to meet the distinct learning needs of individual students
		Proportion of institutions reporting that OER has contributed to increased collaboration

Source: Miao (2018)

Each of the indicators above provide useful insight into OER measurement, with a particular focus on policy. Another key takeaway from the framework is the value of using benchmarks as a means of comparison.

In the domain of teaching and learning, the Open Education Group developed the COUP Framework to evaluate the impact of OER and open pedagogy in secondary and post-secondary education (Open Education Group n.d.). Figure 1 summarises what the acronym COUP represents.

Figure 1: The COUP Framework breakdown



Source: Open Education Group (n.d.)

The COUP framework aims to provide empirical evidence on a series of metrics concerning the extent of the financial impacts of OER adoption (cost); the learning effects of OER adoption (outcomes); how faculty and students use OER and the extent to which the effects on learning outcomes covary with these uses (usage); and empirical evidence for a series of questions about faculty, students, and other stakeholders' understandings of OER (perceptions) (Open Education Group n.d.). These are presented below in more detail.

Table 2: The COUP Framework: Metrics

Cost	Outcomes	Usage	Perceptions
1. Costs of textbooks previously assigned 2. OER support fee models 3. Changes in campus bookstore revenue 4. Changes in tuition revenue due to changes in drop rates 5. Changes in tuition revenue due to changes in enrolment intensity 6. Changes in tuition revenue due to changes in persistence 7. Changes in access to performance-based funding due to changes in drop, enrolment intensity, and persistence	Changes in the percentage of students receiving a C or better Changes in rates of completion Changes in drop rates Changes in enrolment intensity Changes in persistence Changes in attainment of progress milestones (e.g., first 15 credits) Changes in graduation rates	Deleting material from the OER Inserting other open material inside the OER Moving material around within the OER Editing material in the OER	What do faculty and students think about, and feel toward, Open Educational Resources? How do they judge their effectiveness relative to traditional textbooks? Their rigor and coverage? Do they find the formats, structures, and other design features easy to use? Frustrating? What about other stakeholders, like parents or policy makers – what are their thoughts and feelings toward OER?

Source: Open Education Group (n.d.)

Although it is focused at the institutional, not global level, the COUP framework is relevant for informing a measurement tool on the effectiveness and use of OER because it outlines useful metrics to inform empirical research, as well as demonstrating how valuable frameworks can be for linking overall measurement objectives for OER with tangible metrics.

Measurement should also account for the complexity of OER. Shear, Means, and Lundh (2015: 12) suggest several dimensions across which OER and its uses differ, together with a group of alternative characteristics for each dimension. This provides a useful guide to the kind of gradation

a measurement tool might possess—one which accounts for the nuances within OER. These dimensions are presented in the table below.

Table 3: Dimensions of OER

Level of openness	1. Free to use but not modify 2. Free to use, copy, distribute, modify and incorporate into derivative non-commercial works 3. Free to use, copy, distribute, modify and incorporate into derivative, including commercial works*
Grain size	Programme/ course sequence, whole course, unit of study, learning object, learning platform, assessment
Implementation modality	Wholly online; blended with reduction in face-to-face (FTF) time; blended with no reduction in FTF time
Education context	Early childhood; K-12 school; higher education institution; informal out-of-school
Learner choice	Learner selected; recommended to learner; required of learner
Subject area	Humanities, language, arts, mathematics, science, technical including programming, other occupational
Type of learning	Procedural skills, declarative knowledge, deeper learning

*These levels are a simplification of the four levels of OER access described in Smith (2013), as cited by Shear, L., Means, B., and Lundh, P. (2015: 12).

The same authors explain that the OER ecosystem would benefit from common terminology to describe different kinds of OER research studies. They propose the following categories, each of which includes a set of outcomes:

- ***Impact studies that include a counterfactual*** (that is, a comparison or control group for which outcomes are measured to show the results that would have occurred without the OER). One might measure the following outcomes:
  - student learning outcomes
  - student motivation/socioemotional learning factors
  - teacher practices/motivation
  - access to learning
  - cost effectiveness (requires both learning outcome and cost data)

- ***Empirical studies that measure outcomes but lack a counterfactual.*** These might look at the same outcomes as impact studies, but do not necessarily allow for comparison or a control group to measure the impact of OER.

- ***Implementation studies.*** Focus on how OER are implemented through, for example, case studies and differentiating between methods of OER implementation.

- ***Policy studies.*** These are descriptive studies involving OER policies and policy changes that do not contain outcome data or quantitative data on implementation variables (Shear, Means, and Lundh 2015: 13).

Swatscheno (2020) explains that decisions over what metrics to track should be made early on in any OER-related process or programme because different stakeholders may be concerned with different metrics. Moreover, different stakeholders are able to collect different metrics depending on their context, so it is important to have a clear grasp of which metrics are being used in order to plan measurement efforts. The author suggests the following metrics for measuring OER:

- downloads
- page visits
- user engagement (for example, web page visit duration)
- sales of physical copies
- course adoptions
- adaptations and remixes of the resource
- reviews
- peer review
- student surveys and testimonials
- overall cost savings for students
- effect on the textbook market

Except for the OER Global Monitoring Framework (see Table 1), the best practice examples presented in this section focus largely on OER measurement at institutional and/or teaching and learning levels. Very little information could be found about OER measurement at the global or even national policy level. As such, the final section of this chapter presents an initial effort to define a measurement framework for the OER Recommendation.

Towards a global OER measurement framework

UNESCO and its partners are currently working with national governments on the implementation of the OER Recommendation. One aspect of this work entails developing indicators for monitoring progress of countries against the five areas of action defined in the Recommendation (UNESCO 2019). Once finalised and agreed to, these indicators are likely to guide the approaches countries take to OER and will therefore influence how OER is used in support of distance education provision.

Against the backdrop of the specific challenges inherent in measuring OER and informed by the best practice lessons discussed above, Table 4 summarises a set of outcomes and indicators that could be considered for monitoring the effective implementation of the OER Recommendation. The challenges of shared understandings of what counts as OER across different contexts was discussed above. In addition, in relation to measuring the OER Recommendation, also challenging is defining what supportive OER policy looks like across regional and national contexts, as well as how to identify whether access to OER is inclusive and equitable across vastly different educational environments, each with varying forms and degrees of exclusions. To account for this, in the framework presented below both normative and quantitative indicators have been included (UNESCO and COL 2019). The normative indicators take the form of qualitative ratings. While it is recognised that qualitative ratings can mean different things, this approach also encourages users of the framework (whether governments or institutions) to engage in reflective practice on their achievements towards the indicators within their own contextual boundaries. To allow for aggregation of indicators with qualitative ratings, definitions for each rating category have been proposed.[3]

3 **The following definitions of rating categories are proposed:**
Not at all – no activities/interventions related to the indicator are underway or planned; there is no evidence of progress towards the relevant outcome
Somewhat – activities/interventions related to the indicator are in early stages and/or being planned; there is initial evidence of progress towards the relevant outcome
Mostly – activities/interventions related to the indicator are clearly underway; there is evidence of significant progress towards achieving the relevant outcome
Always – activities/interventions related to the indicator are standard practice; the relevant outcome has been achieved

Table 4: Proposed measurement framework for the OER Recommendation

Areas of Action	Outcomes	Indicator – How we count it	Questions to guide qualitative assessment
1. Building capacity of stakeholders to create, access, re-use, adapt and redistribute OER	1.1 Stakeholder communities aware of benefits of OER and limitations of copyright	1.1.1 Number and type of capacity building and awareness raising interventions about OER benefits held per year	a. How were capacity building and awareness raising interventions about OER designed and delivered? b. What type/s of learning occurred during the interventions (e.g. procedural skills, declarative knowledge, deeper learning)? c. What capacity building and awareness raising needs did participants have and to what extent were they met? d. What lessons were learned from the interventions, and how can they be applied in future efforts?
		1.1.2 Number of participants in capacity building and awareness raising interventions about OER benefits per year	
	1.2 Capacity building programmes offered at all levels of education, both formal and non-formal, on how to use OER and related digital literacy skills	1.2.1 Number of capacity building programmes offered in the education sector on how to use OER and related digital literacy skills	a. How were capacity building programmes on how to use OER and related digital literacy skills designed and delivered? b. What type/s of learning occurred during the interventions (e.g. procedural skills, declarative knowledge, deeper learning)? c. What capacity building needs did participants have and to what extent were they met? d. What lessons were learned from the programmes, and how can they be applied in future efforts?
		1.2.2 Number of participants in education sector capacity building programmes	
	1.3 Tools for accessing OER enhanced and made easily accessible	1.3.1 Institutional or national OER repository exists	a. What is the purpose and scope of the tool or repository and how does it align with national educational goals? b. What types of OER does the repository contain and how are they sourced, created, curated, organized, and delivered to users? c. How has the repository or tool promoted the access, use and sharing of OER, and what evidence exists to support this? d. What OER repositories/tools are available and did capacity building interventions address the full range of available repository/tool functionalities? e. How were capacity building interventions focussed on OER repositories and tools designed and delivered? f. What measures are in place to ensure the quality and relevance of capacity building interventions? g. What lessons were learned from capacity building interventions, and how can they be applied in future efforts? h. What feedback did participants provide about using the repository and tools and how can this be used to improve future capacity building interventions?
		1.3.2 Number of capacity building interventions focused on OER repositories and tools	
		1.3.3 Number of participants in capacity building interventions focused on OER repositories and tools	

Areas of Action	Outcomes	Indicator – How we count it	Questions to guide qualitative assessment
2. Developing supportive policy	2.1 Policies/ frameworks that ensure that educational resources developed with public funds are available as OER	2.1.1 Rating of the extent to which educational resources developed with public funds are available as OER (Not at all, somewhat, mostly, always)	a. What policies and strategies exist which support the development and use of OER with public funds? b. What processes determine the types of educational resources that are developed with public funds and which resources should be openly licensed? c. If there are OER that are developed with public funds, what types of licensing conditions are used and how accessible are the resources?
	2.2 Policy and legal frameworks developed that promote the use of OER in support of educational outcomes, including incentive measures for stakeholders to implement policies and procurement models that support OER	2.2.1 Rating of the extent to which policy and legal frameworks promoting OER use in support of educational outcomes include incentives for stakeholders to use/re-use OER (Not at all, somewhat, mostly, always) 2.2.2 Rating of the extent to which policy and legal frameworks enable procurement of OER-related products and services (Not at all, somewhat, mostly, always)	a. What policies and legal frameworks that promote OER and/or enable the procurement of OER-related products and services currently exist? b. How are these policy and legal frameworks circulated and implemented across different levels of the education system? c. What stakeholder incentives exist in current policies and legal frameworks to use/re-use OER? d. What additional stakeholder incentives might be added to existing or new policies and legal frameworks? e. How is the implementation of such policies and legal frameworks measured and evaluated? f. How are the relative benefits of procuring OER-related products and services measured against those of copyrighted or commercial alternatives, and how is this information used to inform procurement decisions?

Areas of Action	Outcomes	Indicator – How we count it	Questions to guide qualitative assessment
3. Encouraging effective, inclusive and equitable access to quality OER	3.1 Availability of OER in different languages, and contextualized to the needs of target users to support equity and inclusion of learners at all levels	3.1.1 Rating of the extent to which OER are available in all national languages (Not at all, somewhat, mostly, always)	a. What policies, strategies, and initiatives are in place to promote the availability of contextualized OER for learners at all levels (e.g. supporting all national languages and varied social, economic and cultural contexts)? b. What measures are in place at the institutional or national level to ensure that the needs of learners, teachers, and other stakeholders are accounted for? c. What networks and partnerships exist between government, different communities, educational institutions, and stakeholders in the OER space to support the production and distribution of OER for different linguistic, social, economic, and cultural contexts? d. What impact has the availability of contextualized OER in different social, economic, and cultural contexts had on teaching, learning, and research? What evidence exists to support these claims? e. What criteria are used to evaluate the relevance and accuracy of OER for different contexts?
		3.1.2 Rating of the extent to which OER for use in low/no connectivity contexts are available (Not at all, somewhat, mostly, always)	
		3.1.3 Rating of the extent to which OER have been contextualized for local social, economic and cultural contexts (Not at all, somewhat, mostly, always)	
	3.2 Quality assurance criteria for OER based on guiding principles of learning excellence, equity and inclusion	3.2.1 Rating of the extent to which quality assurance criteria for OER based on principles of learning excellence, equity and inclusion have been developed (Not at all, somewhat, mostly, always)	a. What principles of learning excellence, equity, and inclusion currently inform quality assurance criteria for OER? b. How are OER quality assurance criteria communicated to stakeholders, and what monitoring and evaluation processes occur to determine their effectiveness?
	3.3 Research conducted on implementing the OER Recommendation	3.3.1 Number of studies on OER development, use, and/or impact being planned (e.g., in proposal stages)	a. What areas or topics do planned, current, or completed studies on OER development, use, and/or impact address? b. Who carried out the research and what methodologies were used to ensure that the studies were rigorous? c. What are the anticipated/actual outcomes of the OER studies, and what contribution will they make to advancing the knowledge and understanding of OER development, use, and/or impact? d.What resources and support will be/were provided to researchers involved in the OER studies and were they sufficient? e. What are existing research gaps or limitations that need to be addressed?
		3.3.2 Number of studies on OER development, use, and/or impact currently underway	
		3.3.3 Number of studies on OER development, use, and/or impact completed	

Areas of Action	Outcomes	Indicator – How we count it	Questions to guide qualitative assessment
4. Nurturing the creation of sustainability models for OER	4.1 Awareness raising, creation and catalysing of sustainability models that foresee that cost of accessing educational materials is not shifted to individual educators and students	4.1.1 OER sustainability model(s) have been developed 4.1.2 Number of awareness raising activities about OER sustainability models held in the past year 4.1.3 Number of participants at awareness raising events about OER sustainability models 4.1.4 Rating of the extent to which OER sustainability models and practices are in place (Not at all, somewhat, mostly, always)	a. What features and components of OER sustainability models are currently in place? b. What are the strengths and weaknesses of current OER sustainability models, and how can they be improved or refined to be more effective? c. What resources and support are required to implement OER sustainability models, and how are they being secured? d. What types of awareness raising activities were held in the past year, what were the target audiences' needs, and were their needs addressed? e. What feedback did participants provide on awareness raising activities and how can this be integrated into future such events? f. What were the objectives of awareness raising activities about OER sustainability models and practices held in the past year, and to what extent were they met? g. How effectively do current OER sustainability models align with long-term national goals and priorities?
5. Promoting and reinforcing international cooperation	5.1 Establishment of networks to support OER (communities of practice, intra-/inter-institutional, regional/sectoral)	5.1.1 Number of international cooperation agreements to co-develop and share OER 5.1.2 Number of OER-related networks currently active 5.1.3 Number of OER-related communities of practice currently active	a. What international cooperation agreements, OER-related networks, and communities of practice currently exist, and which countries or stakeholders are involved? b. What is the impact of these agreements, networks, and communities of practice? c. Where do implementation gaps exist, and how can they be addressed?

Conclusion

The OER Recommendation does not explicitly mention the term distance education. Nonetheless, the Recommendation's focus on openness, as well as its clearly articulated commitment to the Education 2030 Framework for Action, which does identify the importance of distance education, underlines the relevance of this global policy development in the distance education space. Distance education policymakers, institutions and practitioners are likely to be influenced by the implementation of this Recommendation at national levels in the coming years. Thus, understanding and reflecting on how implementation of the OER Recommendation might be measured is important to the broader field of distance education. To support this process, this chapter has unpacked how the OER Recommendation might be measured in a manner that both creates shared global indicators and celebrates the uniqueness of local implementation contexts. Distance education policymakers are encouraged to consider their current or planned use of OER using these indicators as a guide.

References

Annand, D. and Jensen, T. 2017. Incentivizing the production and use of open educational resources in higher education institutions. *International Review of Research in Open and Distributed Learning*, 18(4):1–15. Available at: https://www.erudit.org/en/journals/irrodl/1900-v1-n1-irrodl04981/1065987ar.pdf

Baijnath, N. 2017. *The end of the OER crusade: towards a new evangelism.* [Conference Presentation], Cape Town, 8 March.

Blaschke, L.M. 2016. *Open educational resources (OER): guidance for institutional decision makers in developing an OER strategy*. [Conference Paper] Proceedings of the 9th European Distance and E-Learning Network Research Workshop, 4-6 October. Available at: https://www.eden-online.org/proc-2485/index.php/PROC/article/view/1526

Colvard, N., Watson, C.E., and Park, H. 2018. The impact of open educational resources on various student success metrics. *International Journal of Teaching and Learning in Higher Education*, 30(2):262–276. Available at: https://files.eric.ed.gov/fulltext/EJ1184998.pdf

Creative Commons. (n.d.). *Open education*. Available at: https://creativecommons.org/about/program-areas/education-oer/

De Hart, K., Chetty, Y., and Archer, E. 2015. Uptake of OER by staff in distance education in South Africa. *International Review of Research in Open and Distributed Learning*, 16(2):18–45. Available at: https://www.erudit.org/en/journals/irrodl/1900-v1-n1-irrodl04979/1065943ar.pdf

EMARGE Ed. Consultants Inc. 2017. *Impact of open textbook adoption at Antigua State College.* Burnaby, BC: Commonwealth of Learning. Available at: http://oasis.col.org/bitstream/handle/11599/2750/2017_Emarge_Impact-Open-Textbook-Adoption-Antigua-State-College.pdf?sequence=1&isAllowed=y

Hilton, J. 2020. Open educational resources, student efficacy, and user perceptions: a synthesis of research published between 2015 and 2018. *Educational Technology Research and Development*, 68:853–876. Available at: https://link.springer.com/article/10.1007/s11423-019-09700-4

Hoosen, S. and Butcher, N. 2019. *Understanding the impact of OER: achievements and challenges*. Available at: https://iite.unesco.org/wp-content/uploads/2019/04/Understanding_the_impact_of_OER_2019_final.pdf

Institute for the Study of Knowledge Management in Education (ISKME). 2021. *Advancing equity and online learning at California community colleges through OER policy support: an invitation to trustees, directors, and decision makers*. Available at: https://www.iskme.org/our-ideas/advancing-equity-and-online-learning-california-community-colleges-through-oer-policy-supp

Jensen, E. 2020. *How to measure progress on the priority areas of the recommendation on science*? Available at: https://rring.eu/how-to-measure-progress-on-the-priority-areas-of-the-recommendation-on-science/

Jensen, E. and Lorenz, L. 2021. Supporting UNESCO member states in evidencing 10 key priority areas - measures and indicators for Lithuania, Serbia and South Africa. Available at: https://doi.org/10.5281/zenodo.4912589

Miao, F. 2018. *Mainstreaming OER towards education 2030*. Available at: https://iite.unesco.org/wp-content/uploads/2018/05/Fengchun-Miao.pdf

Mishra, S., Sharma, M., Sharma, R.C., Singh, A., and Thakur, A. 2016. Development of a scale to measure faculty attitude towards open educational resources. *Open Praxis*, 8(1):55–69. Available at: https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/56791/56775.pdf?sequence=1&isAllowed=y

Open Education Group. (nd). *The COUP framework*. Available at: https://web.archive.org/web/20230601084102/https://openedgroup.org/coup

Orr, D., Rimini, M., and Van Damme, D. 2015. *Open educational resources: a catalyst for innovation.* Paris: OECD Publishing. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.

cgi?article=1004&context=parasittext

Shear, L., Means, B., and Lundh, P. 2015. *Research on open: OER research hub review and futures for research on OER*. Menlo Park, CA: SRI International. Available at: https://www.hewlett.org/wp-content/uploads/2016/08/OERRH%20Evaluation%20Final%20Report%20June%202015.pdf

Swatscheno, J. 2020. *Open educational resources promotions guide: measuring impact*. Available at: https://guides.library.illinois.edu/OERGuide/MeasuringImpact

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2016. *Education 2030: Incheon declaration: towards inclusive and equitable quality education and lifelong learning for all*. Available at: https://apa.sdg4education2030.org/sites/apa.sdg4education2030.org/files/2020-12/Education2030%20Incheon%20Declaration%20and%20Framework%20for%20Action.pdf

———. 2019. *Recommendation on open educational resources (OER)*. Available at: http://portal.unesco.org/en/ev.php-URL_ID=49556&URL_DO=DO_TOPIC&URL_SECTION=201.html

United Nations Educational, Scientific and Cultural Organization (UNESCO) and Commonwealth of Learning. 2019. *Guidelines on the development of open educational resources policies*. Available at: https://www.unesco.de/sites/default/files/2020-01/Guidelines_on_the_Development_of_OER_Policies_2019.pdf

Weller, M., De los Arcos, B., Farrow, R., Pitt, B., and McAndrew, P. 2015. The impact of OER on teaching and learning practice. *Open Praxis*, 7(4):351–361. Available at: https://oro.open.ac.uk/44963/1/227-1106-2- PB-3.pdf