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Article abstract

In this article, ambassadors of the International Council for Open and Distance Education (ICDE) Open Educational Resources (OER) Advocacy Committee (OERAC) provide a snapshot of regional and global Open Educational Resources (OER) initiatives. This committee has been active since 2017 with membership renewed biannually. The ambassadors work to further OER awareness and understanding, to increase global recognition of OER, and provide policy support for the acceptance and application of OER. This overview highlights national and regional initiatives associated with the UNESCO OER recommendation and the five action areas that include: building capacity and leveraging OER; developing supporting policies; ensuring equity and effectiveness; encouraging sustainable OER model development; and, promoting and facilitating international collaboration. In addition, monitoring and evaluation of the action areas are suggested to be prioritized. This overview is not exhaustive, and much work remains to implement the OER Recommendation at scale, maximize its implementation, connect these recommendations to the United Nation's Sustainable Development Goals (SDGs), along with the futures of education with a new social contract for education, individuals, and the planet.



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The UNESCO OER Recommendation: Some Observations from the ICDE OER Advocacy Committee

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Abstract

In this article, ambassadors of the International Council for Open and Distance Education (ICDE) Open Educational Resources (OER) Advocacy Committee (OERAC) provide a snapshot of regional and global Open Educational Resources (OER) initiatives. This committee has been active since 2017 with membership renewed biannually. The ambassadors work to further OER awareness and understanding, to increase global recognition of OER, and provide policy support for the acceptance and application of OER. This overview highlights national and regional initiatives associated with the UNESCO OER recommendation and the five action areas that include: building capacity and leveraging OER; developing supporting policies; ensuring equity and effectiveness; encouraging sustainable OER model development; and, promoting and facilitating international collaboration. In addition, monitoring and evaluation of the action areas are suggested to be prioritized. This overview is not exhaustive, and much work remains to implement the OER Recommendation at scale, maximize its implementation, connect these recommendations to the United Nation's Sustainable Development Goals (SDGs), along with the futures of education with a new social contract for education, individuals, and the planet.

Keywords: open educational resources, UNESCO OER recommendation, OER advocacy, distance education

Introduction

In 2017, the International Council for Distance Education (ICDE) established the first Open Educational Resources (OER) Advocacy Committee (OERAC) whose mission is to increase global recognition of OER worldwide and provide policy support for the uptake, use, and reuse of OER. Committee membership seeks representatives from each continent and has been renewed every two years (ICDE, 2023; Ossiannilsson, et al., 2020). In this article, current ambassadors of the OERAC provide a snapshot of regional and global OER initiatives.

In March 2020, due to the COVID-19 pandemic, most sectors around the world went online, not least the educational sectors, and most educational institutions and stakeholders became aware of the Internet as a resource and tool for continuity of work. More or less all educational organizations around the world began to offer online and distance learning, with the use of more technology, digitalization, and OER, taking steps that were started over 25 years ago by many online educational providers. When connectivity and access to sources, tools, and software were not limitations, the online setting opened possibilities for anyone to learn anything (Bozkurt et al., 2020; Ossiannilsson et al., 2020; Stracke et al., 2022).

Before the pandemic, the 2030 Agenda for Sustainable Development, adopted by all United Nations member states in 2015, provided a common blueprint for peace and prosperity for people and the planet, now and in the future. Its centerpiece is the 17 Sustainable Development Goals (SDG), which represent an urgent call to action by all countries as part of a global partnership. They recognize that eradicating poverty and other deprivations must go hand in hand with strategies to improve health and education, reduce inequalities, and promote economic growth—all while combating climate change and protecting our oceans and forests (UNESCO, 2016). Four years later, the UNESCO initiative on the futures of education and a new social contract for education was launched, aimed at rethinking education and shaping the future for individuals and the planet. This initiative stimulates a global debate about how knowledge, education, and learning must be reconceptualized in a world of increasing complexity, uncertainty, and precarity (UNESCO, 2019a). UNESCO (2019b) also notes that OER are a catalyst for achieving the SDGs, particularly SDG 4, which relates to education. OER are now defined as follows (UNESCO, 2019):

Open Educational Resources (OER) are learning, teaching, and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation, and redistribution by others.

OER are a catalyst for change toward the open movement and for human rights, equity, social justice, and the common good. The futures of education are being transformed by the use of learning technologies, particularly in hybrid and online learning environments that challenge institutional and personal capacity to ensure access for all (UNESCO, 2019a).

The UNESCO OER Recommendation

A milestone was reached in 2019, when UNESCO member states unanimously adopted the OER Recommendation for global implementation (UNESCO, 2019). The Recommendation covers five areas: building capacity and using OER; developing supportive policies; ensuring equitable access to quality OER; promoting the creation of sustainable OER models; promoting and facilitating international cooperation; and in addition, monitoring and evaluation are emphasized. OER are valued as a catalyst for innovation and the realization of UNESCO SDG 4: education for all, accessibility, equity, equality, inclusion, diversity, lifelong learning, and the higher values of social justice and human rights. The OER recommendation will be a catalyst for achieving SDG 5 (gender equality), SDG 9 (industry, innovation, and infrastructure), SDG 10 (reducing inequalities within and between countries), SDG 16 (peace, justice, and strong institutions), and SDG 17 (partnerships for the goals).

Since access to quality education through OER impacts human rights and social justice, the UNESCO OER recommendation is critical. In 2020, the impact of the global COVID-19 pandemic clearly demonstrated the importance of opening up education and access to internationally recognized, qualified learning resources. This article describes how the promise of resilient, sustainable, and high-quality open education is being addressed in different regions as part of operationalizing the five action areas. The Recommendation has opened up the opportunity for all actors in the education sector to contribute and now includes formal, non-formal, and informal actors. Non-formal learning takes place outside formal learning environments but within some kind of organizational framework, while informal learning takes place outside schools and colleges and arises from the learner's involvement in activities that are not undertaken with a learning purpose in mind. (Council of Europe, n.d.).

Notes From the Field Around the Globe: Ambassadors' Observations

This section briefly summarizes notes from the field of the ICDE OERAC ambassadors on OER initiatives from their regions and in total represent many parts of the globe. The regions appear in alphabetical order: Asia, Europe, Oceania, North America, and South America. Ambassadors have also previously published observations related to the UNESCO OER recommendation (Ossiannilsson, 2020; Ossiannilsson et al., 2021; Ossiannilsson et al., 2022).

Asia

OER in Asia have been converted to the format of massive online open courses (MOOCs). The main driver is the Asian Association of Open Universities, which has established a MOOCs learning centre with a wide range of courses developed by its member universities, mainly from southeast and south Asia (e.g. India, the Philippines, Indonesia, and Malaysia) and the open universities in east Asia, especially the Open University of Hong Kong. The latter, which has been renamed the Metropolitan University and transformed into a traditional campus university, has been actively involved in the creation of OER including MOOCs.

In recent years, Tsinghua University has jointly organized a World Conference on MOOCs with UNESCO and the Chinese Ministry of Education every October or November. Since the first conference in Beijing, a

MOOC alliance has been at work. At the initiative of the Ministry of Education of China, two new national platforms in the Chinese language have been established in cooperation with ministries and giant telecommunication and high technology corporations in China, one serving basic education and one for tertiary education to which 10 more existing MOOC platforms such as iCOURSE and CNMOOCs have been added at the outbreak of COVID-19 (Bozkurt et al., 2020). Because of the pandemic, the idea of open, flexible, and distance education have been embedded more or less in the minds of conventional universities that participate actively in providing OER in the form of courses. A small quantity of academic courses created by open universities contribute to the popular national MOOC platforms. Jiangsu Open University has also already added about five courses to China MOOCs platform for full-time students. In 2022, the Open University of China started to establish its own freely accessed platform with more than 500 short courses for lifelong learners. The platform is currently in operation with the ambition to be the online learning hub intended for working adults in China.

The quality of OER has been evaluated and monitored by the associations of creators and the learning platforms where the courses are offered. Funding also comes from universities and colleges, mainly for the reason that it is an honor and privilege to create a course on the national learning platform. All courses uploaded to the learning platform must be used for at least three rounds of learning. The responsibility of maintaining the courses lies with the creators, who are motivated to maintain the life expectancy of their courses as long as possible by promoting them on social media in China.

Europe

In 2022, *Germany* adopted a national strategy on OER (Bundesministerium für Bildung und Forschung, 2022). This strategy briefly explains that the modernization of the educational landscape in Germany is a central social process. In a culture of digitality, modern education is digitally supported education with digital competencies and skills being important. They complement the cultural and conventional skills of reading, writing, mathematics and critical thinking. Digital education spaces are the necessary extension of classrooms, seminar rooms, and lecture halls that have long and exclusively defined the concept of education. Digital tools, media, and platforms connect teachers and students to the world around them. At the heart of digital networking is communicating, sharing, and collaborating—regardless of time or place. Also influential is the simplified use, production, and further development of educational materials. Learning materials are the central object, carrier, and fuel in teaching and learning processes and in the competence development of learners and teachers. The Federal Ministry of Education and Research (BMBF) wants to support the innovative design space of digital educational media and materials and promote modernization and innovation in education. Because of these aspirations, OER offer special potential for cooperation and collaboration, competence development, and the development of new pedagogical practices to support the development of learners and teachers in all areas of education in a 21st-century digital living and working world. With its OER strategy, the BMBF is addressing current developments and setting the framework for an innovation space in which the potential of free educational materials can unfold and have a long-term and lasting impact.

In the *Netherlands*, the Minister of Education, Culture, and Science provides funding as part of the incentive system for open and online education coordinated by SURF. SURF is a cooperative association of Dutch educational and research institutions in which members join together in their digital services and

innovations, with the SURF members owning its outputs. The incentive system comprises two pillars: online education and open learning materials. The rationale and goal cited is that online education provides opportunities for innovation and quality improvement in higher education. (SURF, 2021).

In *Norway*, the Norwegian Digital Learning Arena (NDLA) is a joint provincial enterprise providing open digital learning content for upper secondary education. The NDLA is not only a compilation of open educational resources, but also offers a number of other online tools for sharing and collaboration. The NDLA produces freely available digital learning resources for upper secondary education (<https://ndla.no/>) and its goal is to contribute to increased collaboration in teaching and learning, the development and sharing of expertise, and the promotion of service offerings and technologies within the edtech sector. On the platform, the NDLA offers over 22,000 learning resources in 146 examination subjects. The learning resources are of high quality, professionally up-to-date, and developed in collaboration with qualified teachers and students. In 2021, the platform recorded nearly 15 million visits (NDLA, 2022).

In *Spain*, the Open Education Policy at the Universidad Internacional de La Rioja (UNIR) (Burgos, 2017a) represents a firm commitment to finding a model of sustainability between proprietary and open approaches. In 2017, at UNIR, a pioneering policy at the international level for an online university and a Spanish-language university was unanimously approved by all members of the University Council. In the process, this policy was validated by 27 external reviewers from five continents who are active and recognized members of the open movement. It was an exercise in transparency and integrated work. This policy is based on a practical approach that facilitates the integration of open resources into the University's formal programs by students, faculty members, and academic leaders. In this way, formal learning is combined with non-formal and informal learning, and the wide variety of high-quality, internationally available content is validated as part of the educational process in the University's portfolio. The policy goes beyond content, as the pillars of open education, as described by Burgos (2017b, 2020), are several: content, methodology, research data, research results, policy, licensing, technology, access, accreditation, certification, interoperability, and practices (i.e., as in Open Educational Practices, OEP). For this reason, the University is also committed to an open approach in all of these areas. In this specific example, more than 25% of UNIR's academic instructional production is available as open access. Examples of this open sharing include the video repository UNIR TV (UNIR, 2009), which collects more than one million educational videos, or through the open courses portal OpenEd (UNIR, 2017b), created by the UNIR Research Institute iTED (UNIR, 2017a), which aggregates and facilitates access to all the results of the projects carried out by UNIR and funded internationally. This sharing mindset implies a strong commitment of the University to the design, use, integration, and production of resources and educational policies, along with the other pillars.

In *Sweden*, a group of volunteers founded Meeting Place OER (Mötesplats OER, 2020) and translated the UNESCO OER Recommendation. They have also hosted two national conferences for policymakers to mark the anniversary of the UNESCO OER Recommendation, in 2021 and 2022. In 2021, the government commissioned the Royal Library to map and analyze the use of OER and public participation in the research process. The assignment is to be conducted with a focus on the general library system. While carrying out the assignment, the Royal Library will seek opinions from the State Board of Education, universities and colleges, the National Heritage Authority, the university chancellor's Offices, the Swedish Research Council,

and other relevant agencies and organizations. In addition, experience within Digisam is a platform where 22 governmental cultural heritage stakeholders work together to digitize cultural heritage will be considered. Digisam strives to ensure that websites are accessible to everyone as part of enhancing equitable access in this area of open education.

The Royal Library was also given an assignment for investigation on open science, which has been a priority area in the European Commission's strategies, guidelines, and recommendations since 2016. Public transparency and participation in research and innovation projects are factors that can contribute to a better understanding of scientific processes. Participation can take the form of citizen science or other forms of co-creation, for example, in which stakeholders are given influence over the research process in different ways. In the Research and Innovation Policy Proposal Research, Freedom, Future—Knowledge and Innovation for Sweden (Research, freedom, future, 2020), the government stated that access to fact-based knowledge and information is an important tool to strengthen people's resilience in stressful times and to protect human rights in an equitable, safe, and sustainable way. The 2020 Research and Innovation Policy Bill maintains that universities need digital education services to meet society's growing need for skills transfer and lifelong learning. According to the Library Act (2013, p. 801), libraries in the public library system must work for the development of democratic society by contributing to the transmission of knowledge and the free formation of opinion. Libraries in the public library system must also promote the value of literature and interest in education, information, training and research, and cultural activities in general (Research, freedom, future, 2020).

The results of the Royal Library's investigation show that there are great benefits to increased use of open learning resources. This is primarily for access to quality resources for learning in formal education, but also for lifelong learning and education. There are also benefits to universities and colleges when open learning resources are developed and used collaboratively and on a larger scale. The public library system has an important role to play in connecting the public with open-access learning resources from universities and other educational institutions. If nothing else, university libraries can help faculty and students at all levels of education find, use, and disseminate open learning resources. In early 2023, the Royal Library (Kungliga Biblioteket) will also present a related survey and analysis of public participation in the research process, with a focus on public librarianship (Kungliga Biblioteket, 2022).

On December 16, 2022, the Ministry of Education hosted a meeting on OER inviting 20 stakeholders from various sectors to discuss the upcoming monitoring and evaluation of the OER Recommendation. One of the meeting outcomes was the need for increased collaboration between the sectors involved and the establishment of a number of working groups for more robust national strategies. Today, there are official translations from the Swedish National Council UNESCO for both the UNESCO Open Science Recommendation (UNESCO, 2021b) and the OER Recommendation (UNESCO, 2022).

Oceania

In *New Zealand*, two Te Ama Ako team members from Otago Polytechnic Ltd., led by Wayne Mackintosh, have been involved in creating new open courses: "Digital Skills for OER Sharing" (DS4OERS), for Pacific nations (an initiative of the Commonwealth of Learning, New Zealand's Foreign Affairs and Trade Aid Programme and the Pacific Centre for Flexible and Open Learning for Development); the online course

“Empowered Digital Teacher for Online Learning” for Pacific Island educators; and a French-language version of “Open Education, Copyright, and Open Licensing in a Digital World” (in partnership with UNESCO, ICDE, and l’Université Numérique, France, to support the UNESCO OER recommendation in Francophone countries). Otago Polytechnic Ltd. has also developed the Multitopic format for Moodle, which is now widely used by the Moodle open-source community. The Multitopic format is a course format plugin and such plugins determine the layout of course material in Moodle. The Onetopic format used by Otago Polytechnic Ltd. is designed to present each topic on its own page, with a tab bar at the top of the pages containing links to each topic. Multitopic format is designed to display multiple topics on a page and, therefore, provides options to move, hide, or delete groups of resources together within a page. Course pages with multiple topics per page created in the Multitopic format are, therefore, easier to edit and use. The Multitopic format has already been installed on over 2,000 Moodle sites with implications for the course experience by thousands of learners including open courses.

North America

In *Canada*, interest in OER continues to make inroads. At the national level, the Canadian Association of Research Libraries has written an OER background paper for federal government politicians and officials. This paper provides the current benefits and challenges of using OER in Canadian higher education to help policy creators understand the merits of OER. Regionally, in addition to the ongoing efforts of BC Campus and eCampus Ontario, the Maritime provinces have established Atlantic OER, although stable funding for this initiative is lacking. These three organizations work to further innovations in open teaching and learning practices, with BC Campus leading the way. At a provincial level, the Alberta government explicitly listed OER as one aspect that supports increased access to higher education in their 10-year strategy for postsecondary education. This visioning recognition occurred through the collaborative advocacy work of university student associations and faculty members. In the fall of 2021, an Alberta textbook-broke campaign by several college and university student associations continued the advocacy and awareness-building for students regarding the benefits of OER. These provincial initiatives filter to other provinces, regions, and the national level through student and organizational networks.

The autumn of 2023 marks the international Open Education Global conference in Edmonton (also known as Amiskwacîwâskahikan) with the conference theme of “Building a Sustainable World through Open Education”, with a subtheme focusing on Indigenous Peoples’ knowledge systems that promote sustainability and facilitate the culturally appropriate transfer of Indigenous ways of knowing across systems through Traditional Knowledge Labels. Learning from and alongside Indigenous thought leaders about Indigenous knowledge systems and open education is an important aspect of this international conference and the continuing development of OER.

In *Mexico*, national initiatives to promote universal access to knowledge have been implemented with the creation of the Office for the Management of Universal Access to Knowledge (Consejo Nacional de Ciencia y Tecnología, 2022):

- a network of spaces for universal access to scientific, technological, and humanistic knowledge through the arts;

- a national policy for publishing research in national, fully open-access journals to support and recognize the editorial quality of journals committed to openness;
- an economic incentive for researchers linked to disseminating scholarship and academic research outputs in adequate formats for all types of audiences' readiness; and
- a network of Mexican institutional repositories, with the goal of connecting the digital repositories of higher-education institutions (Rasseli, 2021).

These initiatives are supported by government funding, and most higher education institutions are making additional efforts to build their repositories and frameworks. Though OERs are not yet part of a specific national policy, they can be integrated. Moreover, there is an effort to set up an environment of openness that will enable further transitions toward an inclusive and open educational practice.

South America

Currently, there is an incentive in *Brazil* for the practice of open education. One area that stands out in this regard is health. For at least the last 10 years, the material developed to support the training of health professionals in the Brazilian Unified Health System has been based on OER.

Actions related to open educational practices are disseminated in different places. Several public higher-education institutions are developing academic-scientific projects that promote the elaboration and dissemination of OER, which are used in basic courses and extension courses in the form of self-instruction. This initiative is very interesting because it adheres to the job and salary plan for health professionals at the federal, state, and local levels.

National actions are being transferred to several institutions in South America. A good example is the virtual learning environment of the health unified system of Brazil (AVASUS) of Laboratory of Technological Innovation in Health—(LAIS-) of Federal University of Rio Grande do Norte (UFRN), which offers more than 330 courses accessible through specializations or learning paths (Valentim et al., 2022). AVASUS is an environment that, in addition to providing courses since 2021, also offers OER that can be accessed after an initial registration. The methodology implemented in AVASUS is currently being used as the basis for enhancing the virtual environments of the PAHO/WHO Virtual Campus of Public Health. Another example of the development of working groups that lead actions in the field of open and distance education, as well as the development of OER, is carried out by UniREDE—Associação Universidade em Rede. In addition to these examples, there are many other initiatives, since the vast majority of Brazilian public universities have institutional repositories that provide access to OER. A study has been developed by Caitano et al (2022) in the field of mass education provides new data in an innovative approach to evaluating the contribution of the massive training of professionals. The aim was to monitor the effective transformation of the work process and professional practice related to the use of OER and the fulfilment of the Sustainable Development Goals.

Conclusions and Recommendations

The preceding overview has highlighted several national and regional initiatives related to the UNESCO OER recommendation. However, there are still many ongoing initiatives, and much work remains to be done to implement the OER Recommendation at scale, maximize implementation, and link it to the SDGs and the futures of education, with a new social contract for individuals and education that extends throughout the planet. In summary, more needs to be done at the global level, not least when it comes to implementing the five areas of the 2019 Recommendation: building capacity and leveraging OER, developing supporting policies, ensuring effectiveness and equity, promoting the creation of sustainable OER models, and facilitating international collaboration. As part of meeting these action areas, monitoring and evaluation should be prioritized to ensure OER is part of high quality, sustainable, and equitable education for all.

References

- Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., Lambert, S. R., Al-Freih, M., Pete, J., Olcott, Jr., D. Rodes, V., Aranciaga, I., Bali, M., Alvarez, Jr., A. V., Roberts, J., Pazurek, A., Raffaghelli, J. E., Panagiotou, N., de Coëtlogon, P., Shahadu, S., Brown, M., Asino, T. I. Tumwesige, J., Ramírez Reyes, T., Barrios Ipenza, E., Ossiannilsson, E., Belhamel, K., Irvine, V., Sharma, R. C., Adam, T., Janssen, B., Sklyarova, T., Olcott, N. Ambrosino, A., Lazou, C., Mocquet, B., Mano, M., & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1–126. <http://dx.doi.org/10.5281/zenodo.3878572>
- Bundesministerium für Bildung und Forschung. (2022). *OER-Strategie freie bildungsmaterialien für die entwicklung digitaler bildung*. [Free educational materials for the development of digital education] https://www.bmbf.de/SharedDocs/Publikationen/de/bmbf/3/691288_OER-Strategie.pdf?__blob=publicationFile&v=4&fbclid=IwAR1qhoyUMGHHbBi42aeimBiVZ1g8wjhY9aIBkVrZNP1D2NO-kez5oQe4Wc
- Burgos, D. (Ed.). (2017a). *Educación abierta* [Open education policy]. Universidad Internacional de la Rioja (UNIR). <http://bit.ly/unir-openpolicy> (English) and <http://bit.ly/unir-educacionabierta> (Español)
- Burgos, D. (2017b). *Into the open: A transgenic evolution of the educational system*. [Conference presentation]. 27th ICDE World Conference on Online Learning, Toronto, Canada.
- Burgos, D. (2020). About open science and open education (editorial). In D. Burgos (Ed.), *Radical solutions and open science: An open approach to boost higher education*. Springer. <https://doi.org/10.1007/978-981-15-4276-3>
- Caitano, A. R., Gusmão, C. M. G., Dias-Trindade, S., Barbalho, I. M. P., Morais, P. S. G., Caldeira-Silva, G. J. P., Romão, M. H., Valentim, J. L. R. S., Dias, A. P., Alcoforado, J. L. M., Oliveira, C. A. P., Coutinho, K. D., Rêgo, M. C. F. D., & Valentim, R. A. M. (2022). Massive health education through technological mediation: Analyses and impacts on the syphilis epidemic in Brazil. *Frontiers in Public Health*, 10, 944213. <https://doi.org/10.3389/fpubh.2022.944213>
- Consejo Nacional de Ciencia y Tecnología (CONACyT). (2022). *Acceso universal al conocimiento*. [Universal access to knowledge]. <https://conacyt.mx/acceso-universal-al-conocimiento/>
- Council of Europe. (n.d.). *Formal, non-formal and informal learning*. <https://www.coe.int/en/web/lang-migrants/formal-non-formal-and-informal-learning>
- Kungliga Biblioteket. (2022). *Öppna lärresurser har en outnyttjad potential*. [Open educational resources has unused potentials]. <https://www.kb.se/samverkan-och-utveckling/nytt-fran-kb/nyheter-samverkan-och-utveckling/2022-10-20-oppna-larresurser-har-en-outnyttjad-potential.html>

- Library Act. (2013). *Bibliotekslagen* [Library Act]. https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/bibliotekslag-2013801_sfs-2013-801
- Mötesplats OER. (2020). Mötesplats OER [Meetingplace OER]. <https://www.motesplatsoer.se>
- NDLA. (2022). Om NDLA [About Norwegian Digital Learning Arena]. <https://ndla.no/en/>
- Ossiannilsson, E. (2020). ICDE OERAC 2020 - Summary and reflections. [Unpublished manuscript]. Oslo: ICDE.
- Ossiannilsson, E., Aydin, H., & Wetzler, J. (2021). *Report from the ICDE OER advocacy committee's survey 2020: Implementation of the UNESCO recommendation on open education resources*. International Council of Open and Distance Education. <https://www.oerknowledgecloud.org/record2734>
- Ossiannilsson, E., Gusmão, C., Ulloa-Cazarez, R., & Obiageli Agbu, J.-F. (2022). *Open innovation framework: Emerging narratives from the ICDE OER advocacy committee*. ICDE OER Advocacy Committee. <https://www.icde.org/knowledge-hub/open-innovation-framework-oerac-2022>
- Ossiannilsson, E., Zhang, X., Wetzler, J., Gusmão, C., Aydin, C. H., Jhangiani, R., Glapa-Grossklag, J., Makoe, M., & Harichandan, D. (2020). From open educational resources to open educational practices. *DMS-DMK*, 31. <https://doi.org/10.4000/dms.5393>
- Rasseli, L.A. (2021, Oct. 21). Mexican Network of Institutional Repositories (REMERI) is reincorporated into LA Referencia. *Red Clara*. <https://redclara.net/index.php/en/noticiasyevenos/noticias/2348-mexican-network-of-institutional-repositories-remeri-is-reincorporated-into-la-referencia>
- Research, freedom, future – knowledge and innovation for Sweden (2020). Bill 2020/21:60 (Sweden). <https://www.regeringen.se/rattsliga-dokument/proposition/2020/12/forskning-frihet-framtid--kunskap-och-innovation-for-sverige/>
- Stracke, C.M., Burgos, D., Santos-Hermosa, G., Bozkurt, A., Sharma, R.C., Cassafieres, C.S., dos Santos, A.I., Mason, J., Ossiannilsson, E., Shon, J.G., Wan, M., Obiageli Agbu, J.-F., Farrow, R., Karakaya, Ö., Nerantzi, C., Ramírez-Montoya, M.S., Conole, G., Cox, G., & Truong, V. (2022). Responding to the initial challenge of the COVID-19 pandemic: Analysis of international responses and impact in school and higher education. *Sustainability*, 14, 1876. DOI: <https://doi.org/10.3390/su14031876>
- SURF. (2021). *Open and online education incentive scheme*. <https://www.surf.nl/en/open-and-online-education-incentive-scheme?dst=n2453>
- UNESCO. (2016). *Education 2030: Incheon Declaration and framework for action for the implementation of Sustainable Development Goal 4*.

https://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf

UNESCO. (2019). *Recommendation on Open Educational Resources (OER)*.

<https://unesdoc.unesco.org/ark:/48223/pf0000373755/PDF/373755eng.pdf.multi.page=3>

UNESCO. (2021a). *Reimagining our futures together: A new social contract for education*.

<https://unesdoc.unesco.org/ark:/48223/pf0000379707>

UNESCO. (2021b). UNESCO's recommendation on open science. <https://unesco.se/unescos-rekommendation-om-oppn-vetenskap/>

UNESCO. (2022). *Unescos rekommendation för öppna lärresurser*. [UNESCO's recommendation for open educational resources]. <https://unesco.se/?infomat=unescos-rekommendation-for-oppna-larresurser>

UNIR (2009). *UNIR TV* [Video UNIR] (2017a). *Instituto de Investigación, Innovación y Tecnología Educativas (UNIR iTED)* [Research Institute for Innovation & Technology in Education (UNIR iTED)]. <http://ited.unir.net/>

UNIR (2017b). *OpenEd* (Open course repository). <https://opened.unir.net/>

United Nations. (1948). *Universal declaration of human rights*. <https://www.un.org/en/about-us/universal-declaration-of-human-rights>

Valentim, R. A. M., Oliveira, C. A. P., Oliveira, E. S. G., Ribeiro, E. L., Costa, S. M., Morais, I. R. D., Fernandes, F. R. S., Caitano A. R., Gusmão, C. M.G., Cunha-Oliveira, A., Rêgo, M. C. F. D., Coutinho, K. D., Barros, D. M. S., & Ceccim, R. B. (2022). Virtual learning environment of the Brazilian health system (AVASUS): Efficiency of results, impacts, and contributions. *Frontiers in Medicine*, 9. <https://doi.org/10.3389/fmed.2022.896208>

