Regional Consultations for the 2nd World OER Congress:

Background Paper

OER FOR INCLUSIVE AND EQUITABLE QUALITY EDUCATION: FROM COMMITMENT TO ACTION

In partnership with
UNESCO
Slovenian National Commission for UNESCO
UNESCO Chair in Open Technologies for OER and Open Learning (Jožef Stefan Institute, Slovenia)

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Regional Consultations for the 2\textsuperscript{nd} World OER Congress: Background Paper

Preamble

The World Open Educational Resources Congress (2012), organised by the Commonwealth of Learning (COL) and UNESCO with the generous support of The William and Flora Hewlett Foundation (UNESCO, 2012a), attracted over 400 participants from 70 countries. The Congress resulted in the adoption of the Paris OER Declaration (Appendix A) which encourages governments to openly license educational materials developed with public funds.

Prior to the Congress, six policy forums were organised by COL and UNESCO in the major regions of the world to inform governments and educational leaders about the potential of OER and to engage them in the drafting process of the Paris OER Declaration. The theme of the regional consultation was “fostering governmental support for OER internationally”. The six regional forums were held in: Barbados, South Africa, Brazil, United Kingdom, Thailand and Oman (UNESCO, 2016b). The William and Flora Hewlett Foundation evaluation of UNESCO and COL OER initiatives in 2015 recognised that since the World OER Congress, activities of both the organisations were aligned and complemented each other’s strengths (ORS Impact, 2015). COL and UNESCO have been working closely to cooperate in the field of OER for advocacy, capacity building and policy development for implementation of the Paris OER Declaration.

The World OER Congress focused on securing governmental support for OER. The 2\textsuperscript{nd} World OER Congress aims to make the transition from commitment to action. The global community will identify strategies to harness the potential of OER for achieving inclusive and equitable quality education and lifelong learning for all by 2030.
Following a proposal by the Government of Slovenia to the 199th Executive Board of UNESCO, the 2nd World OER Congress is scheduled to be held in Ljubljana on 18–20 September 2017, hosted by the Government of Slovenia. This will mark five years since the first World OER Congress was held. In the year leading up to the 2nd World OER Congress, COL, in partnership with UNESCO and the Government of Slovenia, will conduct follow-up surveys of world governments and key stakeholders, and hold regional consultations to:

- identify the current status of the recommendations made at the World OER Congress amongst key stakeholders, namely governments, policy makers, the OER community and the wider education community;
- initiate discussions regarding the identified challenges to mainstreaming OER, as highlighted in the outcome report of the OER Road Map meeting (UNESCO, Paris 2016);
- build awareness amongst key stakeholders about the objectives of the 2nd World OER Congress and make recommendations for consideration; and
- encourage more governments to commit to the adoption of open licensing policies for educational materials developed with public funds.

The theme of the regional consultations is “OER for Inclusive and Equitable Quality Education: From Commitment to Action” and the meetings will be held as follows:

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<th>Region</th>
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<td>Asia</td>
<td>1–2 December, 2016</td>
<td>Kuala Lumpur, Malaysia</td>
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<td>Europe</td>
<td>23–24 February, 2017</td>
<td>Malta</td>
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<td>Middle East/ North Africa</td>
<td>27–28 February, 2017</td>
<td>Doha, Qatar</td>
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<td>Africa</td>
<td>2–3 March, 2017</td>
<td>Mauritius</td>
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<td>Latin America and Caribbean</td>
<td>3–4 April, 2017</td>
<td>São Paulo, Brazil</td>
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<tr>
<td>Pacific</td>
<td>29-30 May, 2017</td>
<td>Auckland, New Zealand</td>
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Background

In 2002, the term “open educational resources” (OER) was adopted at UNESCO’s Forum on Open Courseware to describe the phenomenon of openly sharing educational resources. In general, OER can include lecture notes, slides, lesson plans, textbooks, handouts given to students, videos, online tutorials, podcasts, diagrams, entire courses, and any other material designed for use in teaching and learning. In 2012, the World OER Congress brought together governments as well as educational and OER experts and emphasised using OER as a means of providing equal access to knowledge. It showcased innovative policies and initiatives that demonstrate the potential of OER to broaden access to inclusive and equitable quality education. OER has the potential to make a significant contribution to SDG 4, which calls for ensuring “inclusive and equitable quality education and promoting lifelong learning opportunities for all” with its key pillars of access, equity and inclusion. The World OER Congress (UNESCO, 2012a) defined OER as:

OER are any educational resource that may be freely accessed, copied, reused, adapted and shared and which are available under an open licence or are in the public domain for use without paying licensing fees.

Since 2012, the focus has been on implementing the Paris OER Declaration, with a view to making OER more widely used by educational stakeholders worldwide. Education 2030 (UNESCO, 2015a) reaffirms earlier political commitments to facilitate policy dialogue, knowledge sharing, standard setting and global and regional cooperation. As stated in the Qingdao Declaration, “OER provide educational stakeholders with opportunities to improve the quality of and expand access to textbooks and other forms of learning content to catalyze the innovative use of content, and to foster knowledge creation” (UNESCO, 2015b). The Qingdao Declaration also calls for sector-wide strategies and capacity-building programmes for expanding access to quality lifelong learning opportunities.
Mainstreaming OER Practices

Key Issues

The mainstreaming of OER by educational stakeholders worldwide entails key factors related to: (i) recognising the benefits of OER, (ii) mobilising educational stakeholders, (iii) addressing financing issues and (iv) achieving clarity on the meaning of “open” in the context of OER.

Benefits

OER offer the potential to provide more equal access to knowledge and educational opportunities by making quality and affordable educational resources widely available at a time when education systems worldwide are facing mounting challenges. Rapid growth in education enrolment, limited or no growth in financial resources available for education, and the ongoing rollout of enabling information and communication technology (ICT) infrastructure have made it increasingly important for educational systems to support, in an organised and deliberate manner: the development and improvement of quality teaching and learning materials, curricula, programmes and course design; the planning of effective contact with students; the design of effective assessment; and the identification of ways to meet the needs of a greater diversity of learners. These activities aim to improve the teaching and learning environment whilst managing cost through increased use of resource-based learning. OER help to manage this investment and the resulting copyright issues in a way that supports ongoing, cost-effective improvements in the teaching and learning processes whether in formal or non-formal contexts.

The Role of Educational Stakeholders

Governments have an interest in ensuring that public investments in education make a meaningful, cost-effective contribution to socio-economic development. The Paris OER Declaration calls for governments to openly license educational resources developed through public funding. Sharing these educational materials has significant potential to improve the quality and accessibility of educational delivery across national education systems by making OER more readily available for use by all education providers, not just the recipients of public funds (UNESCO & Commonwealth of Learning, 2011). As governments often play a key role in the policy development and funding of educational institutions, and as policies on education funding also indicate key priorities, they are ideally positioned to encourage or mandate institutions to release materials as OER and use open licences for materials developed with public funding. Governments can also use open licensing regimes to increase the leverage of public investments, by facilitating widespread reuse of those investments with minimal additional spending.

Governments have an interest in ensuring that public investments in education make a meaningful, cost-effective contribution to socio-economic development.
Governments, institutions, educators and students need to make continuous investments in developing educational resources to improve the quality of teaching and learning. The most cost-effective way to invest in materials design and development is to incorporate effective adaptation and use of OER. This eliminates unnecessary duplication of effort by building on what already exists elsewhere, takes advantage of pooled alternative resources to meet accessibility obligations, removes the costs of copyright negotiation and clearance, and can engage open communities of practice in ongoing quality improvement, quality assurance and translation.

**How “Free” Are OER?**

One of the key benefits of open content is that it is “free” for the end user (i.e., it does not cost anything to download, leaving aside costs of bandwidth). However, OER do incur costs related to developing, adapting and/or remixing material. Historically, much of this has been supported by funding from donors. Whilst donor funding has been an essential component of initiating OER practices, in order for them to become sustainable and effectively used, governments and educational institutions need to invest systematically in programme, course and materials development and acquisition. Costs include wages for the time people spend developing curricula and materials, adapting existing OER, dealing with copyright licensing (where materials are not openly licensed) and so on. They also include associated expenses such as ICT infrastructure (for authoring and content-sharing purposes), bandwidth, the costs of running workshops and meetings when content development teams meet, and so on.

**“Open” in OER**

The term “open” is often loosely applied. Having gained currency, it is now being appropriated in many different sectors, such as open government, open architecture, open society, open access to education materials and open source software (Weller, 2011).

In many cases, current discussions on educational reform, particularly in higher education, have moved from OER to massive open online courses (MOOCs). Both are related to general policies of open education and reform, but there are differences. In particular, most MOOCs allow users only fair-use rights or rights stated in specific licences. Most cannot be legally copied, and users cannot update them or use them to create their own courses. They are therefore not OER.

OER, as stated above, must be available on an open licence which allows users to legally use/reuse and modify them.
Challenges to Mainstreaming OER Practices

It has been observed that awareness of OER has spread faster than its implementation. Obstacles remain for the mainstreaming of OER by the global educational community. The Paris OER Declaration highlighted these obstacles and flagged them for international co-operation. Whilst advances have been made in each area, increased efforts by the international community are still necessary. These obstacles are: (1) users’ capacity to access, reuse and share OER; (2) issues related to language and culture; (3) ensuring inclusive and equitable access to quality OER; (4) the need to change business models; and (5) the development of supportive policy environments.

(1) Users’ capacity to access, reuse and share OER

[Paris OER Declaration 2012: a, d, e, f, i]

Harnessing OER requires leaders who are flexible, open to new ideas and willing to make decisions. Thus, there is a need to build capacity in leaders to ensure that the process of leveraging OER is both top-down and bottom-up. This includes building capacity in educational stakeholders (policy makers, educators, students) so that they can share materials created under an open licence, and developing user-friendly tools to facilitate the finding, retrieving and sharing of OER that are specific and relevant to particular needs.

Skills development for OER use, reuse and sharing

In addition, building capacity requires that relevant ongoing professional development activities be made available to educators so they can acquire the skills and competencies necessary for using OER. Educators also need the digital and media literacy skills to find, share, create and remix OER effectively. As available OER may not always match local methods or subject matter, staff must be trained to source and adapt OER. Further skills required include: (i) the ability to “see value” in someone else’s work and realise how it could be used in a new context, (ii) technical competence to effect changes in OER, (iii) translation proficiency and (iv) the ability to distribute and share new versions of OER to students and the open community. COL’s online Directory of OER (http://doer.col.org) is a comprehensive resource on OER in the Commonwealth.

There is also a need for capacity to focus on intellectual property rights issues, and to develop a good understanding of open licences, their implications and how they work in practice, especially to re-mix contents available in different licenses. Mechanisms need to be in place to recognise the time, effort and skills required by educational staff to develop and adapt OER.

Another key component is to popularise OER storage and retrieval systems (UNESCO, 2016b), which requires their simplification so that they include the necessary tools and information to develop OER as easily as possible. Currently there are no standards for accessing, using and reusing OER.
Furthermore, the available tools to share resources are limited, and current platforms are often difficult to use.

(2) Issues related to language and culture

[Paris OER Declaration 2012: g]

This relates to the need to promote multilingual capacity in cyberspace. The Internet, which is the main medium through which OER are shared, provides opportunities to improve the free flow of ideas by word and image. It also presents challenges for ensuring the participation of all, as the majority of the content is in English. Producing OER in local languages allows for increased diversity, quality and relevance of the content.

Furthermore, there is a need to address cultural issues around attitudes toward sharing. It is important to provide incentives to encourage or, where appropriate, require the use of OER in education institutions. As part of capacity-building efforts, there is value in creating and sustaining effective communities of practice to foster collaboration and information sharing. Such co-operation has the additional potential side benefits of improving quality (through reviewing and vetting others’ materials), increasing access and reducing costs through sharing.

(3) Ensuring inclusive and equitable access to quality OER

This point relates to two concepts: OER accessibility for persons with disabilities, and supporting the use of OER in all ICT environments.

Given such a large number of people living with a disability, it is vital that access to educational opportunities be made widely available.

Accessibility for persons with disabilities

Whilst OER include open licences, they are not inherently technically accessible to all, so there is a need to ensure that accessibility issues be mainstreamed into all use of OER — creating, sharing and/or remixing. Approximately 15 per cent of the world’s population, representing some one billion people, have a disability (World Health Organization, 2013). This figure is accelerating in line with population increases, growing poverty, natural disasters, ongoing conflicts and ageing populations. Given such a large number of people living with a disability, it is vital that access to educational opportunities be made widely available. [Paris OER Declaration 2012: a, b, c, d, e]

Connectivity

Despite the great potential of OER, there are challenges to accessing OER, particularly in developing countries where ICT availability and Internet connectivity are issues. Being able to access OER requires an adequate ICT infrastructure. A robust and fast Internet connection, still lacking in many institutions, is also very useful. Furthermore, the high cost of bandwidth, coupled with students’ poor socio-economic situations in some contexts, means that many students are unable to access
ICT, the Internet and OER. In addition, with the increased use of mobile technologies and networks to access the Internet in all parts of the world, particularly in developing countries, it is important to have mobile-friendly OER for sharing, creating and remixing, and to ensure that OER be easily downloadable for sharing on “offline” networks, if necessary. [Paris OER Declaration 2012: a, b, c, d, e, f, I]

**Quality concerns**

A common debate in OER focuses on concerns about the quality of OER. Proponents of OER point out that the transparency provided by OER (where resources produced by staff are shared openly) usually places social pressure on institutions and teaching staff to prove quality. Some institution-based providers use the brand or reputation of an institution to persuade the user that available materials on a website are high quality; if they are not, then the prestige of the institution is at risk. Another approach is to use peer review, one of the most commonly employed quality assurance processes in academia. As more institutions around the world are, at different levels, requiring their educators to share more materials under open licences, experience clearly demonstrate that this opening of intellectual property to peer scrutiny is having the effect of improving the quality of teaching and learning materials. This happens both because educators tend to invest time in improving their materials before sharing them openly and because the feedback they receive from peer and student scrutiny helps them to make further improvements.

In the development of materials for K-12 education and for teacher training, ensuring that the quality assurance mechanisms applied to non-OER content are, where possible, applied to OER has proven useful and should be further explored. [Paris OER Declaration 2012: a, b, d, e, i]

**Globally, the traditional publishing business model has come under growing pressure as a consequence of technological development and the digitisation of content.**

(4) The need to change business models

[Paris OER Declaration 2012: j]

Globally, the traditional publishing business model has come under growing pressure as a consequence of technological development and the digitisation of content. The changes experienced by the publishing industry are affecting its market paradigms and business models. Basic principles, such as economies of scale, which used to be a mantra for this sector, have become less significant. Digital books are usually sold at lower prices than physical books, and as free public-domain books increasingly becoming available, they may further threaten the traditional business model of the publishing industry (Rodrigues, Chimenti, Nogueira, Hupsel, & Repsold, 2014).

The increasing demand for access to quality education, combined with rising education enrolments, calls for more educational resources, particularly affordable textbooks. However, textbook prices are soaring along with the rising cost of tuition, causing the overall price of education to increase significantly. As textbook costs escalate, there is a simultaneous move toward digital textbooks due to the increasing availability of ICT. The potential of having affordable electronic textbooks, combined
with the possibilities offered by OER, offer the prospect of mitigating the rising cost of textbooks, with several organisations and institutions making electronic textbooks available for free.

Such developments are forcing publishing industry actors to reassess their business models and redefine their products and services to align them with changing conditions, needs and requirements. A growing number of governments and institutions — at national, regional and local levels — require that all educational resources funded by taxpayers or public resources be openly licensed as OER. At the same time, educational and academic publishers in these countries are undergoing a period of evolution and reflection regarding the future dynamic between traditional copyrighted publishers and publicly funded OER.

There is a need to identify innovative solutions for developing new business models, so that the interests of the OER community and educational publishers are addressed. Several possibilities include: (i) publishers providing customised education services; (ii) publishers concentrating on new subjects where OER do not yet exist; (iii) publishers providing joint products (for example producing conventional textbooks whilst releasing other products, such as educational games, with an open licence); (iv) publishers assembling OER; and (v) publishers developing hybrid models that allow for both OER and traditional copyrighted publications to co-exist, each meeting different audience needs (UNESCO, 2016b).

(5) The development of supportive policy environments

[Paris OER Declaration 2012: c]

The Paris OER Declaration states that publicly funded educational resources should be made available to the public under an open licence. This generates a need to foster the creation, adoption and implementation of policies supportive of effective OER practices. Governmental and institutional policy makers play a crucial role in setting policies that help to shape the direction of education systems, and these policies can accelerate or impede the adoption and creation of OER. Several countries have already adopted OER policies, and the presence of country policies that are supportive of OER can be used as a gauge to determine levels of commitment to OER. The lack of such frameworks can limit and delay the process of adoption or may even discourage institutions from pursuing OER undertakings. Furthermore, commercial interests, lack of awareness and absence of strong leadership may limit the development and implementation of supportive OER policies. Once governments and institutions have decided to adopt an open licensing policy (requiring that the outputs of grants or contracts be openly licensed), it is also important to provide guides and professional development for how to implement the open policy.

1 See https://wiki.creativecommons.org/wiki/OER_Policy_Registry.
Best Practices

As indicated in the publication *Guidelines for OER in Higher Education* (UNESCO & Commonwealth of Learning, 2011), the roles of governments in education and the relationships between governments and institutions in this sector vary widely from country to country. However, governments can usually play an important role in setting policies for education systems. They have an interest in ensuring that public investments in education make a useful and cost-effective contribution to socio-economic development.

In this context, governments are often in a position to require that educationally useful materials developed with public funds be made available under open licences. Whilst there may sometimes be reasons for not requiring open licensing, the sharing of educational materials has significant potential to improve the quality, transparency and accessibility of education systems. Likewise, governments can use open licensing regimes to increase the leverage of public investments by facilitating the widespread reuse of those resources with minimal additional investment.

In this context, the following excerpt from *Guidelines for OER in Higher Education* (UNESCO & Commonwealth of Learning, 2011, p.5-6) are useful. It suggests that governments:

a. **Support the use of OER through their policy-making role in education.** This could include encouraging and supporting the use of OER in adapting learning experiences to a greater diversity of learners, and supporting national social-inclusion agendas. In this way, it would be possible to encourage equitable access to education and improve learning outcomes for all learners. The sustainability of this endeavour might be encouraged by setting up a government programme of support for OER creation and reuse.

b. **Consider adopting open licensing frameworks.** One effective way to accelerate open licensing and the sharing of education resources would be to adopt, within policy frameworks, an appropriate national open licensing framework. This might form part of an overarching policy framework on intellectual property rights (IPR) and copyright in education that spans both research and teaching activities. Such a licensing framework could also cover the copyright and IPR status of educational materials produced by government departments and agencies.

c. **Consider adopting open standards.** Linked to the above could be the adoption of appropriate open standards. The purpose would be to ensure full access to and use/sharing of resources in education. This could span both research and educational publications, serving to ensure the perpetuity of editable electronic documents, regardless of changes to software. Such standards could cover educational materials produced by government departments and agencies and by institutions receiving government support for developing educational resources.

d. **Contribute to raising awareness of key OER issues.** This could include the development and sharing of case studies of good
practice and relevant examples of use to support implementation efforts. Governments can assist higher education stakeholders in understanding issues surrounding IPR, as well as how IPR are being challenged and reshaped by the rapid digitisation and online sharing of information and resources.

e. **Promote national ICT/connectivity strategies.** Given the centrality of ICT to accessing and sharing content online, such support could focus on ensuring sustained provision of connectivity and staff/student access to ICT within education systems.

f. **Support the sustainable development and sharing of quality learning materials.** Key to the sustainable development and use of OER will be supporting education institutions, individually and collectively, in their efforts to produce and share high-quality educational resources. This could include support for national initiatives to develop local content, and regional/global efforts to develop OER repositories and directories, as well as fostering mechanisms to promote quality in OER.

There is no single strategy that will work for every context, but a coordinated approach would likely yield the best results.

The effective use of OER in education systems at both national and institutional levels will ensure that the opportunities presented by the still mostly grassroots OER movement will be effectively harnessed to operate at the core of global educational systems.

**Conclusion**

OER provide a unique opportunity to improve learning outcomes, reduce costs and enhance the quality of teaching by facilitating effective sharing. The effective use of OER in education systems at both national and institutional levels will ensure that the opportunities presented by the still mostly grassroots OER movement will be effectively harnessed to operate at the core of global educational systems. The innovative and cost-effective characteristics of OER will ensure the objectives and key pillars of SDG 4, consisting of accessible, equitable and inclusive quality education, are met. The Regional Consultations of the 2\textsuperscript{nd} World OER Congress will aim to explore strategies and solutions to the challenges of mainstreaming OER. With this view of sharing strategies, the truly transformative potential of OER can be harnessed for achieving “inclusive and equitable quality education and lifelong learning for all”.
References


UNESCO. (2016b). Open educational resources (OER) road map meetingOutcome report. Paris, France: UNESCO.


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**Appendix A**


**2012 WORLD OPEN EDUCATIONAL RESOURCES (OER) CONGRESS**

**UNESCO, PARIS, JUNE 20-22, 2012**

**2012 PARIS OER DECLARATION**

**Preamble**

The World OER Congress held at UNESCO, Paris on 20-22 June 2012,

*Mindful of relevant international statements including:*

The Universal Declaration of Human Rights (Article 26.1), which states that: “Everyone has the right to education”;

The International Covenant on Economic, Social and Cultural Rights (Article 13.1), which recognizes “the right of everyone to education”;

The 1971 Berne Convention for the Protection of Literary and Artistic Works and the 1996 WIPO Copyright Treaty;

The Millennium Declaration and the 2000 Dakar Framework for Action, which made global commitments to provide quality basic education for all children, youth and adults;

The 2003 World Summit on the Information Society, Declaration of Principles, committing “to
build a people-centred, inclusive and development-oriented Information Society where everyone can create, access, utilize and share information and knowledge”;

The 2003 UNESCO Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace;

The 2005 UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expression, which states that: “Equitable access to a rich and diversified range of cultural expressions from all over the world and access of cultures to the means of expressions and dissemination constitute important elements for enhancing cultural diversity and encouraging mutual understanding”;

The 2006 Convention on the Rights of People with Disabilities (Article 24), which recognises the rights of persons with disabilities to education;

The declarations of the six International Conference on Adult Education (CONFINTEA) Conferences emphasising the fundamental role of Adult Learning and Education.

Emphasising that the term Open Educational Resources (OER) was coined at UNESCO’s 2002 Forum on Open Courseware and designates “teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work”;

Recalling existing Declarations and Guidelines on Open Educational Resources such as the 2007 Cape Town Open Education Declaration, the 2009 Dakar Declaration on Open Educational Resources and the 2011 Commonwealth of Learning and UNESCO Guidelines on Open Educational Resources in Higher Education;

Noting that Open Educational Resources (OER) promote the aims of the international statements quoted above;

Recommends that States, within their capacities and authority:

a. **Foster awareness and use of OER.** Promote and use OER to widen access to education at all levels, both formal and non-formal, in a perspective of lifelong learning, thus contributing to social inclusion, gender equity and special needs education. Improve both cost-efficiency and quality of teaching and learning outcomes through greater use of OER.

b. **Facilitate enabling environments for use of Information and Communications Technologies (ICT).** Bridge the digital divide by developing adequate infrastructure, in particular, affordable broadband connectivity, widespread mobile technology and reliable electrical power supply. Improve media and information literacy and encourage the development and use of OER in open standard digital formats.
c. **Reinforce the development of strategies and policies on OER.** Promote the development of specific policies for the production and use of OER within wider strategies for advancing education.

d. **Promote the understanding and use of open licensing frameworks.** Facilitate the re-use, revision, remixing and redistribution of educational materials across the world through open licensing, which refers to a range of frameworks that allow different kinds of uses, while respecting the rights of any copyright holder.

e. **Support capacity building for the sustainable development of quality learning materials.** Support institutions, train and motivate teachers and other personnel to produce and share high-quality, accessible educational resources, taking into account local needs and the full diversity of learners. Promote quality assurance and peer review of OER. Encourage the development of mechanisms for the assessment and certification of learning outcomes achieved through OER.

f. **Foster strategic alliances for OER.** Take advantage of evolving technology to create opportunities for sharing materials which have been released under an open license in diverse media and ensure sustainability through new strategic partnerships within and among the education, industry, library, media and telecommunications sectors.

g. **Encourage the development and adaptation of OER in a variety of languages and cultural contexts.** Favour the production and use of OER in local languages and diverse cultural contexts to ensure their relevance and accessibility. Intergovernmental organisations should encourage the sharing of OER across languages and cultures, respecting indigenous knowledge and rights.

h. **Encourage research on OER.** Foster research on the development, use, evaluation and re-contextualisation of OER as well as on the opportunities and challenges they present, and their impact on the quality and cost-efficiency of teaching and learning in order to strengthen the evidence base for public investment in OER.

i. **Facilitate finding, retrieving and sharing of OER.** Encourage the development of user-friendly tools to locate and retrieve OER that are specific and relevant to particular needs. Adopt appropriate open standards to ensure interoperability and to facilitate the use of OER in diverse media.

j. **Encourage the open licensing of educational materials produced with public funds.** Governments/competent authorities can create substantial benefits for their citizens by ensuring that educational materials developed with public funds be made available under open licenses (with any restrictions they deem necessary) in order to maximize the impact of the investment.