

# UNESCO-COL GUIDELINES FOR OPEN EDUCATIONAL RESOURCES (OER) IN HIGHER EDUCATION

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## 1 ACKNOWLEDGEMENTS

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## 2 GLOSSARY OF TERMS

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**Distance education** is a set of teaching and learning strategies (or educational methods) that can be used to overcome spatial and/or temporal separation between educators and students. However, it is not a single mode of delivery. It is a collection of methods for the provision of structured learning. It avoids the need for students to discover the curriculum by attending classes frequently and for long periods. Rather, it aims to create a quality learning environment using an appropriate combination of different media, tutorial support, peer group discussion, and practical sessions.

**E-learning** refers to structured learning opportunities mediated through the use of digital resources (usually combinations of text, audio and visual/video files) and software applications. E-learning may be offered on-line and synchronously (e.g. real-time conference), on-line and asynchronously (e.g. text-based discussion forum) or off-line (e.g. interactive CD/DVD/flash drive). E-learning can be employed in both contact and distance programmes.

**Inclusive Design:** design that is inclusive of the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference.

**Open Access:** Open access publishing is an important concept, which is clearly related to – but distinct from – that of OER. The term ‘open access’ is applied to many concepts, but usually refers either to:

- ‘open access (publishing)’; or
  - ‘access to material (mainly scholarly publications) via the Internet in such a way that the material is free for all to read, and to use (or reuse) to various extents’; or
  - ‘open access journal, journals that give open access to all or a sizable part of their articles’.<sup>1</sup>
- Open access publishing is typically referring to *research publications* of some kind released under an open licence. OER refers to *teaching and learning materials* released under such a licence. Clearly, especially in higher education, there is an overlap, as research publications usually form an important part of the overall set of materials that students need to access to complete their studies successfully, particularly at postgraduate level.

**Open Educational Resources (OER)** OER are teaching, learning, and research materials in any medium that reside in the public domain or have been released under an open licence that permits their free use and, in some instances, re-purposing by others. The use of open file formats improves access and reuse potential of OERs which are developed and published digitally. Open educational resources can include full courses, course materials, modules, textbooks, research articles, videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. OER is not synonymous with online learning or eLearning. Rather, many OER – while shareable in a digital format – are also printable. Given the bandwidth and connectivity challenges common in some developing countries, a high percentage of resources will be shared as printable resources, rather than being designed solely for use in online learning.

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<sup>1</sup> [http://en.wikipedia.org/wiki/Open\\_access](http://en.wikipedia.org/wiki/Open_access).

### 3.1 PURPOSE OF THE GUIDELINES

Open educational resources (OER) are materials used to support education that may be freely accessed, reused, modified, and shared by anyone. These guidelines outline key issues and suggestions for integrating OER into higher education<sup>2</sup>. Their purpose is to encourage decision-makers in governments and institutions to invest in the production, adaptation, and use of OER, while bringing them into the mainstream of higher education, to improve the quality of curricula and teaching and to reduce costs.

### 3.2 RATIONALE FOR THE OER GUIDELINES

#### *The higher education context*

In the knowledge-driven global economy, higher education systems play major roles, amongst others, in the pursuit of social development and knowledge and in supporting national economic competitiveness. However, they face immense challenges to meet rising enrolment demand worldwide. The percentage of the age cohort enrolled in tertiary education grew from 19 per cent in 2000 to 26 per cent in 2007, but this growth is uneven and is not accompanied by equivalent increases in human or financial resources to enable universities to accommodate the greater demand.

Information and Communication Technologies (ICT) are increasingly prevalent in higher education; governments and higher education institutions are exploring how best to harness ICT to the benefit of students and teaching staff. As part of this, many institutions are incorporating ICT into their educational programmes in order to serve their students more effectively and to prepare them for the world into which they will graduate. Digital systems are adaptable and flexible and can be personalized to meet a variety of learning needs. In many developing countries, however, access to hardware, software, and connectivity remain challenges. It is critical to adapt pedagogical approaches to this environment, while ensuring high quality and relevant educational opportunities.

In parallel, ICT is dramatically increasing the transfer of information through global communication systems, leading to an explosion in the generation and collective sharing of knowledge. The participation of amateurs in previously specialized disciplinary areas is extending the boundaries of scholarship, while dynamic knowledge creation and social computing tools and processes are becoming more widespread and accepted. This opens opportunities to create and share a greater diversity of learning resources, thereby accommodating a greater diversity of learner needs. The digitization of information, combined with its increasingly widespread dissemination, poses significant challenges to concepts of intellectual property. Copyright regimes and business models for publication are under scrutiny.

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<sup>2</sup> OER is not synonymous with online learning or e-learning. Many open resources being produced currently –while shareable in a digital format – are also printable. Given the bandwidth and connectivity challenges common in some developing countries, a high percentage of resources will be shared as printable resources, rather than being designed solely for use in e-learning.

### ***Open licensing and the emergence of OER***

Within the above context, open content licences<sup>3</sup> have emerged in an effort to protect authors' rights in environments where content (particularly when digitized) can easily be copied and shared on the Internet without permission. Open licences seek to ensure that copying and sharing happens within a structured legal framework that is more flexible than the automatic all-rights reserved status of copyright. OER are part of this process, and allow for more flexibility in the use, re-use, and adaptation of materials, for local contexts and learning environments, while allowing authors to have their work acknowledged.

Many advocates of OER say that a key benefit of open content is that it is 'free', but this is only true for the end-user. Open content can be shared with others without asking permission and without paying licence or other access fees. However, some important cost considerations must be taken into account. Taking effective advantage of OER requires institutions to invest systematically in programme/course design and materials development and acquisition. Time needs to be invested in developing courses and materials, finding appropriate OER, adapting existing OER, and negotiating copyright licensing (if material is not openly licensed). There are also associated costs such as procurement and maintenance of ICT infrastructure (for authoring and content-sharing purposes) and bandwidth.

Educational institutions can make these investments as part of their processes of improving the quality of their teaching and learning. Peers can share materials and enrich the curriculum for students, while institutions using and adapting OER will find this a very cost-effective way to invest in materials design and development.

### ***The transformative potential of OER***

The challenge of meeting the growing demand for higher education with limited increases in resources and with the ongoing rollout of ICT infrastructure into higher education institutions have created a unique situation. It has become increasingly important for educational institutions to support, in a planned and systematic manner:

- Development and improvement of curricula;
- Ongoing programme and course design;
- Organisation of interactive contact sessions with students;
- Development of quality teaching and learning materials; and
- Design of effective assessment tools for diverse environments.

OER can make a significant contribution to this process. Its transformative educational potential revolves around four linked possibilities:

- 1) Making educational resources easily available can contribute to transparency and the improvement of quality in the higher education system;
- 2) Building capacity for the creation of OER can be an attractive element in the professional development of academic staff;
- 3) OER can be used to optimize deployment of institutional staff and budgets; and
- 4) Involving students in the adaptation of OER engages them more actively in the learning process.

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<sup>3</sup> Open licences typically modify all-rights reserved copyright licences to allow users a series of rights to reuse, combine, and modify original works. More information is available <http://wiki.creativecommons.org>.

### 3.3 SCOPE OF THE GUIDELINES

Given the potential of OER to improve higher education systems, UNESCO and COL have developed these guidelines to support governments, teaching staff, higher education institutions/providers, and quality assurance/accreditation and recognition bodies. For those who are interested in learning more about the concept of OER and how it is being applied in higher education institutions around the world, a companion document – *The UNESCO-COL Guide to OER*<sup>4</sup> – provide more detailed information about all aspects of OER.

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<sup>4</sup> See <http://www.col.org/resources/publications/Pages/detail.aspx?PID=357>

## 4 GUIDELINES FOR HIGHER EDUCATION STAKEHOLDERS

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### 4.1 GUIDELINES FOR GOVERNMENTS

Governments play a crucial role in setting policies that focus higher education systems, and have an interest in ensuring that public investments in higher education make a meaningful, cost-effective contribution to socio-economic development. In addition to playing a key role in policy development, governments also support some universities financially.<sup>5</sup> Government policies on higher education financing may serve to signal key priorities, for example, on the relative emphasis to be placed on research versus teaching and learning activities, as well as which teaching and learning activities are most important.

Given these roles, governments are ideally positioned to encourage or mandate higher education institutions to produce educational resources in open formats and to license materials developed with public funding under an open licence. While there may occasionally be reasons not to encourage this kind of open licensing, sharing of educational materials has significant potential to improve the quality, transparency, and accessibility of educational delivery across higher education systems. When this is done, OER are made more readily available for use by all higher education providers. Likewise, governments can use open licensing regimes to increase the leverage of public investments, by facilitating widespread re-use of those resources with minimal additional investment.

In this context, it is suggested that governments:

- a. *Support the use of OER through the revision of policy regulating higher education.* This should include encouraging and supporting the use of OER to adapt learning experiences to a greater diversity of learners; as well as sharing resource alternatives. In this way, it will be possible to ensure equal access to higher education and improve learning outcomes for all learners. Sustainability of this endeavour could be encouraged by setting up a dedicated government-level OER programme.
- b. *Contribute to raising awareness of key OER issues.* Governments can assist higher education stakeholders to understand issues surrounding Intellectual Property Rights (IPR), as well as how these are being challenged and re-shaped by the rapid digitization and online sharing of information and resources. This could include advocacy work with government agencies, higher education providers, and other stakeholders around the potential of harnessing OER. It could also include development and sharing of case studies of good practice and relevant examples of use to support implementation efforts.
- c. *Review national ICT/connectivity strategies for Higher Education.* Given the centrality of ICT to accessing and sharing content online, such reviews could focus on ensuring sustained provision in connectivity and staff/student access to ICT within higher education systems.
- d. *Consider adapting open licensing frameworks.* Possibly the most effective way to accelerate open licensing and sharing of higher education resources would be adoption/ adaptation and approval of an appropriate national open licensing framework, with clearly defined options for use by all higher education stakeholders. This could ideally form part of an overarching policy

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<sup>5</sup> This support may include staff remuneration, student stipends, physical infrastructure and the purchase of textbooks (in some cases from a government printer).

framework on IPR and copyright in higher education that spans both research and teaching activities. Such a licensing framework may also cover the copyright and IPR status of educational materials produced by government departments and agencies.

- e. *Consider adopting open format standards.* Linked to the above would be adoption of appropriate open format standards, with clearly defined options for use by all higher education stakeholders. The purpose of this would be to ensure full access to and use/sharing of resources in higher 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 higher education providers supported by governments in the production of educational resources.
- f. *Support institutional investments in curriculum design.* Review and, where appropriate, adjustment of existing government policies and funding regimes can be useful to ensure that they make specific provision for institutional investments in ongoing curriculum design, creation of effective teaching and learning environments, as well as development of accessible, quality teaching and learning materials. Ideally these policies should also make specific provision for collaboration where this can add value.
- g. *Support the sustainable production and sharing of learning materials.* Key to sustainable development and use of OER will be to support higher education institutions, individually or collectively, in their efforts to produce and share high quality educational resources. This could extend to supporting periodic updating of and improvements to teaching materials, adapting openly licensed materials to support this work where relevant. This would ensure that it is undertaken in the most cost-effective way possible (without compromising quality). In many instances, support could be provided as part of a systematic effort to widen access to, and participation in, higher education.
- h. *Collaborate to find effective ways to harness OER.* Work with higher education providers to determine the most cost-effective ways to facilitate the organization, electronic management, and online sharing of OER. While it is likely that some institutions will prefer to host content on their own institutional servers, it may be more cost-effective to establish shared repositories of OER that can be accessed by all higher education providers and can connect to global networks. Another solution may be to join regional/global efforts to develop OER repositories and directories rather than replicating these investments unnecessarily. There is no single strategy that will work for every context, but a coordinated approach will likely yield the best results.

## 4.2 GUIDELINES FOR HIGHER EDUCATION PROVIDERS

Higher education providers have a critical role to play in providing their teaching staff support in creating effective teaching and learning environments for students, as well as ongoing opportunities for professional development. Identification and/or development of learning resources are an integral part of this process. Well-designed learning resources encourage greater individual engagement by students with information, ideas, and content than is possible, for example, in a large-scale contact lecture. When using such resources as an integral part of the teaching and learning process, the limited face-to-face time with students can then be more effectively used to support engagement and to nurture discussion, debate, creativity and practical application, or to support student research activities, rather than simply imparting information.



OER can thus be enormously useful when attempting to meet the diverse learning needs of ever-increasing student enrolments

In developing courses and learning resources, teaching staff have historically tended to use what is already available. The increasing availability of OER not only widens the scope of what is accessible, but also creates opportunities for existing resources to be adapted to fit better the local context – related to culture, access and learning needs – without necessitating lengthy copyright negotiation processes or duplicating development of identical core content.

Experience shows that, when an institution makes its courses/materials publicly available online (assuming it is of quality and relevance), this can attract new students, facilitate accountability (through its transparency), advance institutional recognition and reputation, and support the public service role of institutions. It may also further the dissemination of research results and thereby attract research funding.

In this context, it is suggested that higher education providers:

- a. *Provide incentives to support investment in high quality learning material acquisition, adaptation, and production.* Institutional policies should be reviewed to:
  - Encourage judicious selection and adaptation of existing OER, as well as production of new materials where necessary;
  - Promote collaboration both within and beyond the institution in developing materials;
  - Provide staff appropriate incentives and rewards for the acquisition, adaptation, and production of learning material; and
  - Ensure that staff workload models allow for curriculum, course, and materials design and development, as well as research activities.
- b. *Recognize the important role of educational resources within internal quality assurance processes:* This should include establishing and maintaining a rigorous internal process for validating the quality of educational materials prior to their publication as OER.
- c. *Consider the relative merits of creating flexible copyright policies that apply open licences to content by default.* Such policies could make it simple for staff to invoke all-rights reserved copyright or other licensing permutations when this is deemed necessary. These policies could be part of a wider institutional process to ensure that robust, enforceable IPR, copyright, and privacy policies are in place and accurately reflected in all legal contracts and conditions of employment.
- d. *Undertake institutional advocacy and capacity building.* Ongoing awareness-raising, capacity-building (staff development), and networking/sharing is necessary to develop the full range of competences required to facilitate more effective use of OER.<sup>6</sup> These activities could aim to encourage a shared vision for open educational practices within the organization, which would ideally be aligned to the institution's vision and mission.
- e. *Ensure ICT access for staff and students.* This would entail striving to ensure that teaching staff and students have ubiquitous access to the necessary ICT infrastructure, software and connectivity to access the Internet and develop or adapt educational materials of different kinds. This should include software applications, for example web content editing tools,

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<sup>6</sup> A complete list of relevant skills and competences for consideration is included in Appendix One.

content management systems, templates, and toolkits that facilitate the creation and use of adaptable, inclusively designed educational resources.<sup>7</sup>

- f. *Develop institutional policies and practices to store and access OER.* This includes the capacity to store, manage, and share resources and content, both internally and externally, so that academic endeavours build on a growing base of institutional knowledge. This might be most cost-effectively done as part of a coordinated national strategy or in partnership with emerging global OER networks and repositories.
- g. *Review institutional OER practices periodically.* Such reviews will help the institution determine the value of its policies and practices. They could include reviewing the extent of use of openly licensed educational materials in higher education programmes and assessments its effects on the quality of educational delivery, and its impact on the cost of developing/procuring high quality teaching and learning materials for undergraduate and postgraduate programmes.. Where relevant, this might usefully be extended into showcasing examples of good practice, both in marketing publications and in the form of academic research publications.

### 4.3 GUIDELINES FOR TEACHING STAFF

Teaching staff are ultimately the most important agents in ensuring the quality of the teaching and learning delivered to students in higher education programmes. They generally have significant responsibility for and remain at the centre of the teaching and learning experience for students. Teachers face a series of challenges, including:

- Time constraints to prepare curriculum and to select, adapt, and/or develop teaching and learning materials;
- Meeting the often diverse needs of the learner base;
- Legislative accessibility requirements;
- Covering a large and often growing knowledge base;
- The need to update their ICT skills continually;
- High student expectations; and
- Ever-increasing programme and course enrolments.

Responsibility for assuring the quality of any content used in teaching and learning environments, including OER, will reside predominantly with the programme/course coordinators and individual teaching staff. Whether prescribing textbooks, choosing a video to screen, or using someone else's course plan, they retain final responsibility for choosing which materials – open and/or proprietary, digital or hardcopy – to use. For this reason, much of the 'quality' of OER will depend on which resources teaching staff choose to use, how they choose to adapt them for contextual relevance, and how they integrate them into teaching and learning activities of different kinds. An effective OER framework has the potential to address many of these challenges.

In this context, it is suggested that teaching staff in higher education institutions:

- a. *Update knowledge on, and develop skills to evaluate, existing OER.* A good starting point for doing this is to explore existing OER by visiting suitable portals/ repositories and determining what might be of use in courses and modules. Teaching staff may also find existing OER a useful guide for reflecting on their own curriculum and pedagogy. Such exploration may also

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<sup>7</sup> Also see Annex Two

develop confidence to share new and/or adapted resources to address curriculum gaps within the wider OER community, which would constitute a significant contribution to global knowledge.

- b. *Start publishing OER.* For some teaching staff, this might most comfortably be initiated by 'starting small', publishing materials openly that are already routinely produced as part of teaching and learning, including course outlines, course information booklets or hand-outs, lecture notes and formal course assessments (for example, assignments, essay questions, tests, problems sets, and examinations). Over time, such practices could generate a rich repository of materials on which to draw. It will also provide students with a far richer understanding of the content area.
- c. *Adapt and contextualize existing OER.* Part of effective use of OER includes developing skills to adapt and contextualize existing OER to respond to diverse learning needs and support a variety of learning approaches for a given learning goal. This can be achieved by making use of, and contributing to, the diverse pool of resources available in OER repositories<sup>8</sup> and sharing information on issues and processes related to adaptation and localization of resources.
- d. *Seek institutional support for OER skills development.* There are several professional development opportunities and collaborative partnerships that can lead to the acquisition of relevant skills and competences, such as materials design, curriculum development, and locating, selecting, and adapting OER (including use of global repositories to identify appropriate resources).<sup>9</sup>
- e. *Leverage networks and communities of practice.* Teaching staff can benefit tremendously from using existing online networks and communities of practice to collaboratively develop, adapt, and share OER, as well as engage in dialogue on their experiences in teaching and learning in higher education. Such communities of practice also often provide an excellent platform for publishing resources in existing repositories.
- f. *Publish about OER.* This can help to increase the body of knowledge available on the subject, particularly if it is done via open publications, journals, and other relevant vehicles. This might include articles sharing experiences on the use, re-use, and re-purposing of OER.
- g. *Provide feedback about, and data on use of, existing OER.* Providing feedback and data on the OER that have been created, adapted, used and/or re-used, specifically relating to success in meeting learning goals and specific learner needs is an invaluable contribution to their effective use.
- h. *Update knowledge of IPR, copyright and privacy policies.* This would entail having access to relevant advice and expertise on these matters, as well as a general familiarity with institutional policies and contractual agreements, relating to IPR and copyright. It is particularly important to be clear about rights and conditions relating to works created during the course of employment and how these might be shared with and used by others. Teaching staff should endeavour to be clear about how these policies might affect their rights and the avenues for channelling any concerns about the nature of these policies, while knowing where to go within the institution for assistance in these matters.

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<sup>8</sup> See Appendix Two.

<sup>9</sup> A detailed list of relevant skills is contained in Appendix One

#### 4.4 GUIDELINES FOR STUDENT BODIES

As the role of universities has evolved, so too has the role of the student. Emerging trends include a need for active global citizenship, employability, transferable skills and knowledge, communication skills, creativity and innovation. Key challenges include meeting the rising costs of education (including textbooks) and identifying appropriate educational programmes that meet one's learning needs. Effective OER use can contribute to resolving these challenges, both by lowering costs and making the content of educational programmes more transparent.

When adequately supported, students have great potential to support higher education providers in sourcing, adapting, and producing OER in partnership with teaching staff, as well as developing understanding of and supporting copyright clearance processes for content to enable its release under an open licence.

To promote these changing student roles, student bodies have a role to play in shaping the quality of their educational experience. Although creating teaching and learning environments that harness OER in educationally effective ways is primarily the responsibility of teaching staff, it is wise for student bodies – as key stakeholders in higher education – to be aware of the relevant issues and integrate them as appropriate into their interactions with other higher education stakeholders.

In this context, it is suggested that student bodies:

- a. *Familiarize themselves with policies governing their educational experience*, including government and institutional policies that govern their educational experience, with respect to access to regularly updated curricula, teaching materials, appropriate modes of curriculum development<sup>10</sup> and use of students as knowledge producers and active participants in the learning process.
- b. *Undertake advocacy of OER*. Student bodies can actively promote awareness among students of the potential of OER to improve the educational experience, based on the educational and economic benefits of OER mapped out in this document and *The UNESCO-COL Guide to OER*.<sup>11</sup> Student bodies could also support and advocate for the sharing of publicly-funded educational materials under open licences to eliminate duplicated expenditure on publicly funded materials, with a view to opening educational experiences to more students.
- c. *Encourage their members to publish work as OER*. Students can make a significant contribution to growing use of OER by publishing their work routinely (anonymously, should this be preferred) – in the form of responses to formal assessments and, as appropriate, under the guidance of teaching staff – under an open licence. Student bodies can also contribute by engaging with higher education providers to enable students to become visible producers of knowledge while they are still studying. A repository of student work could serve as a powerful learning tool, while also raising awareness about the distinction between appropriate sharing/collaboration and plagiarism. Publishing student work can also put

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<sup>10</sup> This could include using high quality educational materials of different media; harnessing existing and appropriate (openly licensed) materials to update programmes where this is more cost- and time-effective than designing new materials from scratch; as well as designing activities and assessment tasks that engage students as active participants in learning, rather than passive recipients of content.

<sup>11</sup> See <http://www.col.org/resources/publications/Pages/detail.aspx?PID=357>

pressure on academics to ensure that their courses are refreshed annually, while making it more difficult for individual students to plagiarize particular assignments.

- d. *Take an active role in assuring the quality of OER through social networks.* Student bodies can encourage students to participate in the social networking environments that have been created around OER repositories, so that they play an active role in assuring the quality of content by adding comments on what content they are finding useful and why.
- e. *Participate in institutional decision-making processes about ICT infrastructure and connectivity.* Given that connectivity is an increasingly important part of the higher education experience, it is worthwhile for student bodies to engage in institutional decision-making processes focused on ICT use in order to lobby for clear, funded plans to increase access to ICT infrastructure and broadband connectivity for students.
- f. *Encourage student participation in activities to support OER development:* Student bodies can actively support and promote strategies to include students, possibly as part of contractual agreements with institutions, to assist in sourcing, adapting, and producing OER in partnership with teaching staff, as well as supporting copyright clearance processes for existing content to enable its release under an open licence.

#### **4.5 GUIDELINES FOR QUALITY ASSURANCE/ACCREDITATION BODIES AND ACADEMIC RECOGNITION BODIES**

Quality assurance and recognition have become central elements of higher education at global, regional, national and institutional levels. With the increased diversity of higher education on offer, quality assurance practices and fair recognition of qualifications has become central in a world where there is increased mobility of learners, researchers, and other professionals.

Although quality assurance is the primary responsibility of higher education institutions, external quality assurance bodies also play an essential role by enhancing a quality culture within higher education institutions, through the assessment of programmes offered by the institutions and review of the internal quality assurance mechanisms implemented by the institutions. Therefore, when assessing the teaching mission of the higher education institutions, quality assurance bodies will look, directly or indirectly, at the educational resources that are produced, adapted and used by the institutions (including OER).

To guarantee fair recognition of qualifications, recognition bodies should closely consider the quality of qualifications, which would be 'described' both by the awarding institutions and external quality assurance bodies. From this perspective, the missions of quality assurance bodies and recognition bodies are closely linked and, in many cases, recognition bodies will rely on information provided by quality assurance bodies. Therefore, recognition bodies are also likely to look at the educational resources produced, adapted, and used by the awarding institution.

Therefore both quality assurance bodies and recognition bodies play a crucial role of taking OER into consideration in the accomplishment of the specific missions of higher education providers and thus underlining the transformative educational potential of OER in higher education.

In this context, it is suggested that quality assurance bodies and recognition bodies:

- a. *Raise awareness about OER.* This could include ensuring that all professionals involved in quality assurance and recognition are aware of the increasing importance of OER in development and use of educational resources by higher education institutions. Particular attention might be paid to the shifting terrain of IPR and copyright, to develop understanding of the range of licensing options available for educational resources, particularly those where learning resources can be released with due/appropriate recognition to the authors.
- b. *Engage in debates on OER, in particular on IPR.* Like all other stakeholders in higher education, quality assurance bodies and recognition bodies will need to be involved in policy developments around OER, focusing on both the opportunities and challenges brought by OER in their specific missions. For example, changes in IPR-related issues are likely to have an effect on external quality assurance systems and the reviewing processes led by the competent bodies.
- c. *Consider the effects of OER on quality assurance and recognition.* It is becoming increasingly important to analyse the extent to which quality assurance and recognition principles and processes support effective use of OER, thus either facilitating or impeding higher education institutions that are attempting to take advantage of the opportunities created by OER. In this regard, it will be important to review the role and use of OER in improving quality of teaching and learning.
- d. *Develop criteria for the assessment of OER integration.* Quality assurance agencies could support institutions by developing criteria for the assessment of OER.
- e. *Undertake advocacy of OER:* Considering the evolution towards a learner-centred approach in higher education and increased focus on the learning outcomes of higher education qualifications, the open character of OER can help quality assurance bodies and recognition bodies in their respective missions by providing transparent information on the individualized learning processes. Therefore, in cooperation with other higher education stakeholders, quality assurance bodies and recognition bodies might consider undertaking advocacy of OER, underlining the potentials of OER use in fostering excellence amongst higher education institutions, and facilitating fair recognition of qualifications amongst the various higher education systems.

**FURTHER READINGS**

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To be added

**APPENDIX 1 – USEFUL KNOWLEDGE, COMPETENCES, AND SKILLS FOR EFFECTIVE USE OF OER IN HIGHER EDUCATION**

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Below is a 'shopping list' of the knowledge, competences, and skills that universities may wish to develop in order to make the most effective use of Open Educational Resources to improve the quality and cost-effectiveness of OER:

- 1) Expertise in advocacy and promotion of OER as a vehicle for improving the quality of learning and teaching in education (having a good grasp of both conceptual and practical issues, policy implications, and so on). This requires:
  - a) Passion about the concept of openness, without which any attempts at advocacy are unlikely to succeed;
  - b) Understanding of the pros and cons of different open licensing arrangements, combined with insight into how most current policy environments constrain use of OER and open licensing of intellectual capital (with a particular focus on the challenges of persuading educational decision-makers in environments where Intellectual Property policies make no provision for open licensing);
  - c) Clarity on the economic benefits of OER, both in terms of marketing institutions, programmes, and individuals and in cost-effectiveness of materials production;
  - d) Sound knowledge of practical examples of use of OER to use to illustrate key points;
  - e) Up-to-date knowledge of the arguments for and against use of OER.
- 2) Legal expertise to be able to:
  - a) Advise people on licensing of materials;
  - b) Review current copyright and IPR regimes;
  - c) Develop and adapt privacy, copyright, and IPR policies;
  - d) Determine requirements for copyright clearance and privacy to release materials under Creative Commons licences;
  - e) Negotiate rights to use materials under Creative Commons licences;
  - f) Reflect copyright and disclaimer statements accurately in materials of different kinds and multiple media.
- 3) Expertise in developing and explaining business models that justify, to institutions, individual educators, and other creators of educational content (including publishers), the use of open licensing and that illustrate the benefits.
- 4) Programme, course, and materials design and development expertise, with a particular focus on helping educators to harness the full potential of resource-based learning in their programmes and courses. This requires a thorough understanding of education (pedagogy; being able to differentiate among open, distance, electronic and blended learning – and their



respective merits, etc.), as well as the context of education, tailored to the specific sector in which work is taking place. In addition, it requires skills in:

- a) Conducting educational needs assessments;
  - b) Managing curriculum development processes;
  - c) Effective identification of target audiences;
  - d) Definition of effective and relevant learning outcomes;
  - e) Identification of relevant content areas for programmes, courses, and modules;
  - f) Selection of appropriate combinations of teaching and learning strategies to achieve identified learning outcomes;
  - g) Financial planning to ensure affordability and long-term sustainability of teaching and learning strategies selected;
  - h) Developing effective and engaging teaching and learning materials;
  - i) Integrating meaningful learner support into materials during design;
  - j) Designing appropriate effective assessment strategies;
  - k) Applying the most appropriate media and technologies to support learning outcomes;
  - l) Using media and technologies to support educational delivery, interaction, and learner support;
  - m) Sourcing OER, including a knowledge of the strengths and features of the main repositories, specialized repositories, and OER search engines;
  - n) Adapting and integrating OER coherently into contextualized programme and course curricula;
  - o) Negotiating with external individuals /organizations to issue or re-issue resources under open licences;
  - p) Re-versioning existing resources using optical character recognition where they do not exist in digital form;
  - q) Implementing the necessary processes for producing print-on-demand texts.
- 5) Technical expertise. This set of skills is tightly connected to the skills of materials design and development. Increasingly, resource-based learning strategies are harnessing a wide range of media and deployed in e-learning environments, facilitated by the ready availability of digitized, openly licensed educational content. This requires skills in:
- a) Advising institutions on the pros and cons of establishing their own repositories, as well as advice on other possible ways of sharing their OER;
  - b) Creating stable, operational Virtual Learning Environments (VLEs) and content repositories;

- c) Supporting educators to develop courses within already operational or newly deployed VLEs;
  - d) Developing computer-based multimedia materials (including video and audio materials).
- 6) Expertise in managing networks / consortia of people and institutions to work cooperatively on various teaching and learning improvement projects (including an ability to adapt to challenging environments – for example, power outages, physical discomfort, difficult personalities, institutional politics – and remain focused on the task at hand).
- 7) Monitoring and evaluation expertise to design and conduct formative evaluation processes, as well as longer-term summative evaluation and/or impact assessment activities that determine the extent to which use of open licensing has led to improvements in quality of teaching and learning, greater productivity, enhanced cost-effectiveness, and so on.
- 8) Expertise in curating and sharing OER effectively. This includes:
- a) Technical skills to develop and maintain web platforms to host OER online, as well as to share the content and meta-data with other web platforms;
  - b) Ability to generate relevant and meaningful meta-data for OER;
  - c) Knowledge of and the skills to deploy standardized global taxonomies for describing resources in different disciplines and domains;
  - d) Website design and management skills to create online environments in which content can be easily discovered and downloaded.
- 9) Communication and research skills to be able to share information about OER, in the form of web updates, newsletters, brochures, case studies, research reports, and so on. This will include the full spectrum of skills required for such communication activities, from researching and documenting best practices, core concepts to graphic design and layout expertise.

## **APPENDIX 2 – PROMOTING MORE EFFECTIVE AND INCLUSIVE EDUCATION BY DESIGNING OER FOR THE DIVERSE NEEDS OF LEARNERS**

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Learners learn differently. Learning experiences that match the learner's individual learning needs result in the best learning outcomes. OER should be open and accessible to learners with a diversity of learning needs. Learning needs are affected by:

- Sensory, motor, cognitive, emotional, and social constraints;
- Learning styles or approaches;
- Linguistic and cultural backgrounds; and
- Technical, financial, and environmental constraints.

Accessible learning is achieved by matching the individual learning needs of each learner with a learning experience that addresses the needs. This can be accomplished by the resource delivery system by reconfiguring the resource where possible, by augmenting the resource, or by replacing the resource or parts of the resource with another resource or resource component that addresses the same learning goals.

To support this, learning materials or educational resources should:

- 1) Include labelling to indicate what learning needs the resource addresses;
- 2) Allow the creation of variations and enhancements through open licences;
- 3) Support flexible styling (for example, font can be enlarged, the colour contrast can be enhanced and the layout can be adjusted – for learners with vision impairments or mobile devices);
- 4) Support keyboard control of functions and navigation (for learners who cannot use or do not have access to a mouse or pointing device);
- 5) Provide audio or text descriptions of non-text information presented in videos, graphics or images (for learners who have visual constraints or who have limited displays);
- 6) Provide text captions of information presented in audio format (for learners who have hearing constraints or lack audio interfaces);
- 7) Cleanly separate text that can be read in the interface from underlying code or scripting (to enable translation);
- 8) Use open formats wherever possible to make it easier for alternative access systems and devices to display and control the resource.

The resource delivery system should also enable each learner, or their support team, to identify the learner's functional learning needs.

For more information on these issues, visit <http://floeproject.org/>.