

Open Educational Resources

Basic concepts,
challenges, and
business models

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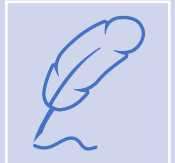
UNIVERSITY OF TWENTE.



ITC



Agenda



Defining Open
Educational Resources
(OER)



Which incentives do OER
offer?



Which challenges come
with OER?



How about business
models?

Open Educational Resources

Basic concepts, challenges, and business models

ITC

Open Educational Resources

Basic concepts, challenges, and business models

Introduction

Every university seeks to educate students, PhD candidates, research staff, and the public. The more these stakeholders can learn in a university, the more income it can generate. One might conclude that it is impossible to publicly release educational materials without losing the competitive advantage of the university. However, Janssen (2019) argues that offering free courses is already a trend as so-called Open Educational Resources (OER) are becoming more common.

For this reason, the relevancy of OER increases. Building the capacity to build is an essential pillar of OER, ITC needs to find answers to several questions:

- Does ITC contribute to OER, and if so, how?
- How does ITC address lifelong learning?
- How could (distance) teaching at ITC be supported by OER?
- What are potential business models for OER?

This document aims not to provide concrete answers to these questions. Such a round table requires all involved parties to discuss the benefits and limitations of OER. This document serves as a discussion tool for considering the questions listed above.

Definition and related concepts

In the following, we will learn about the meaning of OER.

Definition

There is consensus in the literature regarding the definition of OER. Open Science (PLOS), digital assets are open if they are available via a public online repository (Downes, 2007). Assets without any restriction as long as they are available via a public online repository (Downes, 2007). The United Nations Human Rights Declaration states that "Everyone has the right to education. Education is a fundamental right of all people." (United Nations, 1948). Elder (2019) summarizes what OER should be:

- Retain the right to make, own, and use the content in its unaltered form.
- Reuse content in its unaltered form.
- Revise and modify the content.
- Remix it with other content to create new content.
- Redistribute the original as well as the revised content.

These components can be combined to create more restrictive licenses (e.g., cc-by-nc-nd or cc-by-nc-sa). However, restrictive licenses are not conforming with the idea of OER. Furthermore, materials released under a restrictive license might be impossible to remix and distribute derivative works (Janssen, 2019).

Nevertheless, educational resources can also include non-restrictive licenses. Such materials can be licensed in many different ways. It is recommended to use tools that help creators choose the right license (e.g., <https://choosealicense.com/>). If the project is complex, it is possible to use multiple licenses.

To conclude, the idea behind OER is to provide educational resources to everyone. Nevertheless, there is some space to restrict OER for commercial purposes and whether teaching experience is an OER spectrum ranging from No OER (an institution does not publish OER) to full OER (an institution publishes OER and makes it available to everyone).



Figure 1: The OER spectrum.

Incentives for publishing OER

Publishing OER requires effort, time, and money. Universities should invest valuable resources in developing OER.

Educating the public

One reason is the overall goal of a publicly funded university. Thus, the resulting products and services should be available to everyone (D'Antoni, 2009; De Langen, 2011). Also, taxes should be used to support reusability, thereby improving the quality of education. The United Nations Human Rights Declaration states that "Everyone has the right to education. Education is a fundamental right of all people." (United Nations, 1948). Elder (2019) summarizes what OER should be:

Publishing OER is also in the governments' interest. Due to demographic changes, the number of students is increasing. In this context, an aggravating factor is the increasing number of people with some knowledge and skills obsolete. Such models, for example, hybrid education models, according to the students' needs. Also, life-long learning is becoming more important. According to Williams (2010) and Butcher and Hoosen (2012), OER can help to address these challenges.

Challenges and limitations

Despite the incentives mentioned in the previous section, there are also several challenges and limitations that go beyond making OER financially sustainable.

Lecturers

First, lecturers need to invest some effort, for example, to check whether their materials contain protected or plagiarized content (D'Antoni, 2009). Such cases require asking for permission to use copyright content, deleting it, or replacing it with an openly licensed alternative. It might also be necessary to switch from proprietary tools to open-source software. For example, lecturers might need to change a computational workflow for a geo-spatial analysis implemented in ArcGIS to QGIS. Otherwise, the students not having access to the software can only read the materials but not explore them independently. Suppose the recordings of the lectures are included in OER. In that case, privacy concerns need to be considered, e.g., if teachers do not want to be recorded. Finally, teachers might have a conflict of interest, for example, if they are involved in developing the software used in the lecture and hold the copyright (De Langen and Bitter-Rijkema, 2012). Similar conflicts can also emerge with commercial publishers or software companies involved in teaching (Orr et al., 2015). "Positioning the OER Business Model for Open Education - ERIC." <https://eric.ed.gov/?id=EJ979599>.

Rewards and Recognition

Another issue is the lack of a reward system that recognizes the use and creation of OER (Hylén, 2006). Why not valuing OER in the same way as a scientific paper? A further possibility is to consider OER in hiring and tenure, as it is sometimes done with Open Science⁶. A mind-shift towards OER will also change the wrong perception that free materials are of inferior quality (Wiley et al., 2014). However, this issue is, in part, already mitigated by the excellent reputation of ITC.

Universities

Universities planning to publish OER should also take into account costs. The final costs strongly depend on the implemented business model and the type of OER. The following expenses are fundamental (Downes, 2007):

- Teachers for creating OER and internal quality checks.
- Support staff to train lecturers, provide a helpdesk for students, manage marketing, and develop university-wide policies clarify creation and publication of OER, for example, concerning licensing and what can/cannot be shared.
- IT support to maintain software and hardware.
- Hardware (e.g., server, recording equipment) and software (e.g., recording software, learning management system).

However, revising educational materials and replacing commercial with open-source software can also make purchased software licenses obsolete. Such a transition avoids vendor lock-in and, eventually, saves costs (Tiili et al., 2020; Wiley, 2007).

Students

There are also several limitations from the students' perspective. Through online and distance learning, interaction among students is limited, which also negatively affects the development of critical thinking and problem-solving skills (Affouneh and Khlaif, 2020). Also, students do not get

⁶ <https://osf.io/7ibnt/>

Definition

“Educational materials which use a Creative Commons license, or which exist in the public domain and are free of copyright restrictions are OER.”

(Wiley et al. 2014)

“OER are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.”

(UNESCO)



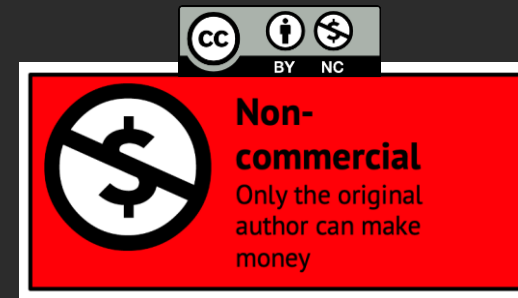
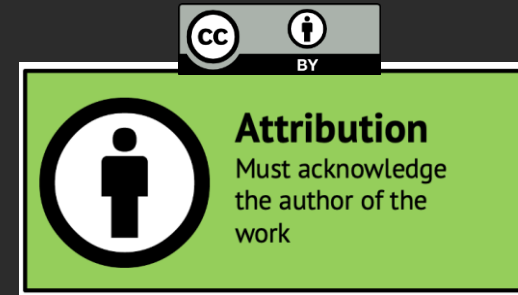
Related terms

- *E-learning*, i.e., online education and support, is a broader concept
- *Open learning*, i.e., the inclusion and removal of barriers, is not a requirement for OER
- *Massive open online courses* (MOOC). MOOCs are free online courses but usually not open-licensed
 - It is thus not possible to modify, remix, and redistribute the materials

~~OER~~

Licensing

- Part of the FAIR principles
- *Open Licenses*
- *E.g., Creative Commons (cc-by)*
- *Different licenses for software*
 - [Choose a license](#)



Incentives for the public



- “Everyone has the right to education. Education shall be free...” (United Nations Human Rights Declaration, Article 26).
- Particularly people in low- and middle-income countries can benefit from OER
- Universities aim to educate the public
- Tackle demographic changes
- Lifelong learning

- 
- OER mainly developed by developed countries
 - Global South as “mere clients”



Incentives for universities and lecturers

- Increase the own reputation
→ attract more students → more tuition fees
- Attract life-long learners (alumni)
- Adhere to Room for everyone's talent strategy and the San Francisco Declaration of Research Assessment (DORA).
- Teaching portfolios for lecturers

- Lecturers need to invest effort
- Universities need to consider costs for Teachers, Support staff, IT
- Missing Recognition & Rewards
See Shaping Expert Group:
<https://www.utwente.nl/en/organisati/on/about/shaping2030/organisation/s eg-individuals-teams/#what-we-want>

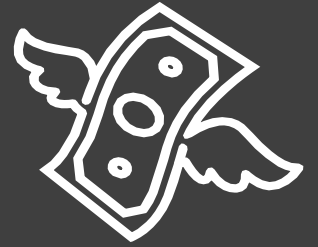
Incentives for students



- Reduced costs, time, and physical presence
- Reconcile education and family commitments
- Address health impairments
- make education possible in politically unstable areas
- Make a more informed decision whether they are interested in the course or not

- Include those who would be excluded otherwise
- Lower number of dropouts

- F2F interaction among students limited
- No immediate feedback
- Not all employers acknowledge distance teaching courses



Business models

Selling course experience model

- Charge for “value-added services” (e.g., teachers’ feedback, certificates)

Governmental model

- Collect funding from (inter-)national agencies

Community-based model

- Host OER infrastructure , organize activities, distribute content

Consultancy, training, and support model

- Institution provides consulting



Producing OER

Institutional production model

- experts convert existing teaching materials into a sharable format

Commons-based peer production model

- volunteers collaboratively create and continuously improve OER in a non-proprietary, non-commercial, open-licensed way

Content creation by classroom students model

- the students of each class develop materials for the next year under the supervision of lecturers

Cooperative production consortium model

- based on the collaboration of several institutions that use and create OER

Concrete step-by-step guides to create OER:

- SURF's [Introduction to OER](#), [OER Starter Kit](#)

Alright, ready to start? Well...



Copyright to a work created in employment

If a work has been created in employment and the creator was appointed or commissioned to create that work, the employer is deemed to be the creator and, as such, the copyright holder of that work.[2]

Copyright to an academic/scientific publication

However, in the case of an academic publication created in the employment of a university, such as a PhD thesis or scientific article, the copyright rests with the creator and not with the employer (the university).

Copyright to works made for educational purposes

The copyright to educational materials created in the employment of a university rests with the employer (the university).

What's next?

- Release of the OER document
- Initiate a discussion at ITC in a round table
- Review OER landscape (Katinka Jager-Ringoir)
- Develop OER policies for ITC and UT

