Open Educational Resources in Higher Education:
Two Approaches to Enhance the Utilization of OER

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ABSTRACT

Open educational resources (OER) are openly licensed educational materials that can be used in different educational settings to help make education available to all. However, proper deployment of OER still faces many barriers, including the lack of know-how among educators and helpful supporting tools. Many educators do not have the necessary knowledge to efficiently find, utilize, edit, or distribute high quality OER. Adding to this challenge is the lack of technical tools to support them when producing OER or converting their existing educational materials to OER. In this paper, the authors introduce two practical approaches applied at the Learning Technologies Research Group at RWTH Aachen University to enhance the utilization of OER in higher education. The first one addresses the qualification of educators to the concept of OER, and the second one focuses on providing technical support to educators when producing OER.

INTRODUCTION

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) considers the right to education a fundamental human right. According to UNESCO, universal access to high-quality education contributes to peace, sustainable social and economic development, and fosters intercultural dialogue. Open Educational Resources (OERs) and associated processes and procedures have been introduced and negotiated intensively during the last 4 decades as a strategic means to improve the quality of education for all. However, several challenges still inhibit the proper deployment of OERs worldwide.

In this article, we will introduce a general background of the potential of OERs and present two approaches conducted at the Learning Technologies Research Group at RWTH Aachen University

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that specifically address two main challenges. The first approach is aimed at qualifying educators with the concept of OERs. The second introduces a tool currently in development to support educators in converting their educational materials to OERs.

Definition

The concept of OERs was introduced at a conference hosted by UNESCO in 2002 (Yuan et al., 2008). UNESCO defined OERs as "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, 2019). In simpler words, OERs are free learning materials that can be delivered in many forms, such as documents, research papers, videos, audio files, images, slides, etc. Some of the most well-known OER distribution platforms are YouTube, Wikipedia, and OpenCourseWare.

One of the most important promises of OERs lies in the potential to reduce demographic, economic, and geographic educational boundaries for everyone. It is important to note that "openness" exists in different domains and can have various meanings (Yuan et al., 2008). The concept of openness in the OER world was born from the idea that knowledge should be freely accessible to all. The two most important characteristics of openness are free availability and reducing technical, legal, or economic restrictions on using the resources. One of the most accepted definitions of "open" in the context of OERs was proposed by David Wiley, founder of the Open Content Project (1998–2003). According to this definition, copyrightable content can be considered "open" if it provides free permission to everyone to engage in the following 5R activities:

1. **Retain:** The right to make, own, and keep their copy of the resource.
2. **Revise:** The right to edit, adapt, and modify their copy of the resource.
3. **Remix:** The right to create something new by combining the resource with other material(s).
4. **Reuse:** The right to publicly use the original, revised, or remixed copy of the resource.
5. **Redistribute:** The right to share the original, revised, or remixed copy of the resource with others (Wiley, 2021).

These permissions are in line with the definition of Open Educational Resources. A key difference between OERs and other educational resources, many of which are freely available, is that OERs can be adapted and reused without needing to ask the copyright holder (Kanwar, 2018). OERs, along with Open-Source software, Open Access (OA), Open Data (OD), form part of "Open Solutions" (*UNESCO*, n.d.). Open licensing, such as Creative Commons (2001), is commonly used to identify the conditions that define acceptable usage of OERs.

Benefits

The cost of educational material can impose such an immense economic burden on some students that it may affect their academic success. The increasing costs of commercially available encyclopedias have proceeded to outweigh economic growth. This negatively influences access to higher education materials. OERs can play an important role by facilitating access to free online high-quality educational materials (Buczynski, 2006). The benefits of deploying OERs within educational practices can be discussed from different perspectives:

- **Reduction of expenses for books and supplies:** OERs reduce the additional costs on students for purchasing books or paper since learning materials are freely available digitally.
- **Augmentation of teaching materials:** OERs provide supplementary instructional resources that can be accessed remotely.

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