JODDE Journal of Open, Distance, and Digital Education

Schön, S., Ebner, M., Hohla-Sejkora, K., Keller, E., Rapp, A., Ribeiro, M. H., Segradin, R., & Vicente-Saez, R. (2025). A multilingual OER MOOC: A case study on production and usage in a university cooperation. *Journal of Open, Distance, and Digital Education, 2*(1), 1-16. https://doi.org/10.25619/y956n017

Received: 12 February 2025| Revised: 18 April 2025 | Accepted: 23 May 2025

A multilingual OER MOOC: A case study on production and usage in a university cooperation

Sandra Schön[1], Martin Ebner[1], Katharina Hohla-Sejkora[1], Elizabeth Keller[2], Andrea Rapp[3], Maria H. Ribeiro[4], Riccardo Segradin[5], Ruben Vicente-Saez[6]

[1] Graz University of Technology, Graz, Austria
[2] KTH Royal Institute of Technology, Stockholm, Sweden
[3] Technical University of Darmstadt, Darmstadt, Germany
[4] Universidade de Lisboa, Lisbon, Portugal
[5] Politecnico di Torino, Torino, Italy
[6] Aalto University, Aalto, Finland

Correspondence:
Sandra Schön| e-mail: sandra.schoen@tugraz.at

Abstract

This paper investigates the processes, outcomes, and impact of the Unite! OER Courses Project, a cross-university initiative aimed at promoting Open Educational Resources (OER) across nine European higher education institutions. Aligned with UNESCO's OER recommendations and the Open Science movement, the project sought to enhance accessibility to high-quality educational materials and foster digital competencies among both educators and students. The research adopts a qualitative case study approach, leveraging project reports and feedback from partners. Through the development of a multilingual massive open online course (MOOC) and an international OER course, the project addressed several core goals, including support for Open Science competencies and the advancement of digital literacy across Europe. The MOOC, launched in May 2024, attracted over 1,400 participants, exceeding initial targets and demonstrating the growing demand for accessible OER content. Furthermore, capacity-building workshops aimed at educators provided training on how to incorporate OER. Initial findings indicate that the project successfully developed and disseminated several OER materials, including a multilingual MOOC and additional resources translated into Turkish, Indonesian, and Arabic. The project also fostered capacity-building among partner institutions, enabling broader engagement with OER practices. Participants in the MOOC and related activities have also reported a significant increase in their competencies regarding OER and Open Science. This study underscores the value of cross-institutional collaboration and the potential of OER to enhance radical creativity, educational accessibility, and innovation in higher education.

Keywords

Open Educational Resources, AI-generated content, University teaching, technology-enhanced learning, digital transformation, impact assessment, multilingual teaching

1 Introduction

Open Educational Resources (OER) have emerged as a powerful force in global education, driving efforts to democratize access to knowledge and enhance teaching and learning practices worldwide. Defined by UNESCO as teaching, learning, and research materials that are in the public domain or released under an open license, OER allow free access, reuse, adaptation, and redistribution (UNESCO, 2019). Their adoption supports the creation of inclusive learning environments, fosters knowledge co-creation, and empowers both educators and learners to engage with educational materials legally and flexibly. In doing so, OER play a critical role in reducing legal uncertainties, especially in digital learning settings, where clear licensing frameworks help to mitigate copyright risks and promote the confident sharing and adaptation of resources (Atenas et al., 2024).

Moreover, OER are intrinsically linked to the broader Open Science movement, which advocates for transparency, collaboration, and accessibility in the production and dissemination of knowledge (UNESCO, 2021). As part of these efforts, OER contribute to strengthening scientific capacities by supporting the dissemination of publicly funded educational materials and fostering digital competencies among educators and learners alike. Their role in promoting Sustainable Development Goal 4 (Quality Education) is particularly noteworthy, as they help lower barriers to education for marginalized and underrepresented communities worldwide. Additionally, OER initiatives encourage pedagogical innovation, active learning, and the development of transversal skills such as critical thinking, digital literacy, and global citizenship (Atenas et al., 2020).

Building on these global developments, this article focuses on the "Unite! OER courses" project as a concrete example of how international principles of openness are being operationalized in the European higher education context. The project, which brings together nine universities across Europe to create a new model of a European virtual and physical campus, is part of the Unite! alliance. Specifically, the initiative aims to develop a multilingual massive open online course (MOOC) and an international OER course for both students and educators (Schön et al., 2025; Vicente-Saez et al., 2024). The overarching goal is to enhance access to high-quality educational resources and improve digital competencies in using OER. By embedding OER practices within a transnational alliance, the Unite! project illustrates how European collaboration can amplify the global momentum for open education and create sustainable, scalable models for OER integration in higher education.

2 State of the art and conceptual framework

OER have become a significant part of educational policy at both international and European levels. UNESCO's 2019 recommendation emphasizes the importance of OER in fostering knowledge accessibility, equity, and collaboration (UNESCO, 2019). In Europe, OER are recognized as essential tools for promoting Open Science and improving the quality of education through increased access to openly licensed materials. The European Commission's Digital Education Action Plan (2021–2027) further highlights the value of OER in enhancing digital

literacy and fostering collaboration among educational institutions (European Commission, 2020).

Nevertheless, despite these policy frameworks, European higher education faces specific challenges in implementing OER broadly. One of the most pressing issues remains the diversity of copyright regulations across European countries, which complicates transnational collaboration on educational resources. While open licenses like Creative Commons provide a uniform legal foundation, differences in national copyright laws, particularly regarding educational exceptions and limitations, create uncertainties when developing and reusing OER across borders. For international alliances such as Unite!, these discrepancies pose concrete obstacles. Educators and institutions must navigate complex legal landscapes, which may result in cautious or limited use of OER, despite their potential to enhance teaching and learning (Neumann et al., 2022).

Austria, where the leadership of the Unite! OER courses project is based, illustrates how some of these challenges can be addressed through targeted national strategies and infrastructure development for more than a decade (Schön & Ebner, 2020). In 2022, Austria launched public access to the OERhub, a national platform designed to allow users to search for OER across the repositories of Austrian higher education institutions using standardized metadata (Gröblinger et al., 2021). In parallel, Austria established a national OER certification scheme for both individuals and higher education institutions. Institutions seeking certification must meet specific criteria, including the development of an OER strategy, provision of an institutional OER repository, delivery of professional development for educators, and a designated number of staff members holding an OER certificate (Schön et al., 2023). By April 2025, more than 220 individuals had successfully obtained this national OER certificate, and five universities – including TU Graz, which also hosts the project leadership of Unite! OER courses – had achieved institutional certification.

The Unite! OER courses project fits strategically within this European policy landscape: By developing a multilingual MOOC and an OER course aimed at building competencies for both students and educators, the project directly supports European objectives of improving digital skills and fostering open educational practices (European Commission, 2020). Furthermore, by embedding mechanisms for impact measurement, the project contributes to the ongoing discourse on evaluating the effectiveness and reach of OER in diverse educational contexts. Insights from the Austrian approach – particularly regarding certification processes and infrastructure – are expected to inform broader European and international efforts to advance OER adoption and overcome existing legal and structural barriers.

This contribution aims to explore the processes, outcomes and overall impact of an international cross-university initiative. Specifically, we seek to understand how the initiative has been implemented across various institutions, what the tangible results have been, and how it has influenced both participants and the broader academic community. By analysing these aspects, we aim to provide a clearer picture of the initiative's effectiveness and its potential for fostering collaboration, radical creativity, and innovation in higher education.

A conceptual framework for this contribution is drawn from the OER Impact Assessment Framework developed by Ebner et al. (2022). This framework provides a structured approach for evaluating the effects of OER in higher education institutions (see Figure 1). The framework

emphasizes the importance of responsible measuring both quantitative outcomes, like student performance and resource usage, and qualitative aspects, such as user satisfaction and institutional engagement with OER practices.

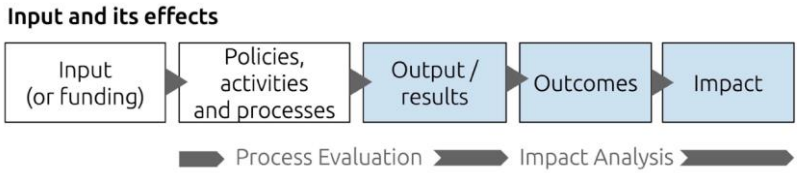

Figure 1: Monitoring possibilities of OER activities and their effects (Ebner et al., 2022, Figure 1, p. 298).

Building upon the idea of the regular OER reports produced by TU Graz (Ebner et al., 2022) and the aim to assess OER impact, one question has been how the project partners see the "Unite! OER course" project, led by TU Graz, as a relevant and impactful OER activity. In line with the chosen framework, we present the project activities – supported by a funding volume of €68,000 for the 12-month initiative – detailing the specific activities and processes, the tangible results (the MOOC and its materials), and the outcomes (participant insights). Additionally, we reflect on the broader impact on partner institutions, including future uses of the materials, the engagement of external partners already achieved, and further perspectives for sustainable dissemination and application.

3 Method

This research adopts a case study approach (Swanborn, 2010) to document the development and implementation of the Unite! OER course. Case studies are particularly useful in understanding complex processes, such as the collaborative development of multilingual educational resources across multiple institutions (cf. Pirkis et al., 2001). The case study highlights both the opportunities and challenges of the project, providing insights into how the AI tool HeyGen was used to produce a multilingual MOOC, and how open-licenced materials were used within and beyond the project, its dissemination, and the further impact of the OER. Figure 2 illustrates the project timeline, highlighting its core activities and the associated documentation and processes that form the basis of this case study

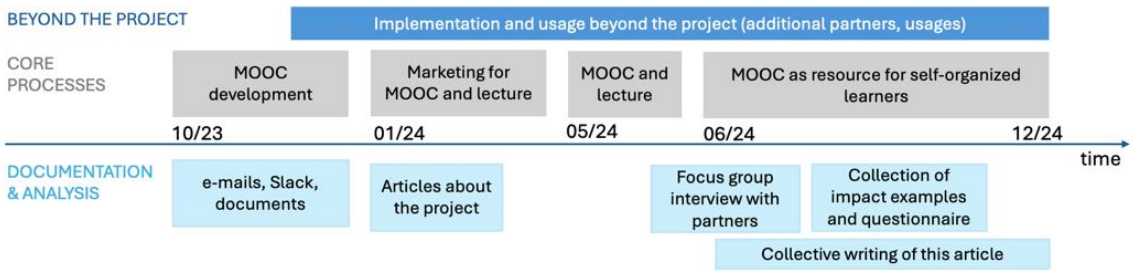

Figure 2: The Unite! OER courses project process and documentation and activities done for the case study

The primary data of this case study are project reports, internal documentation, and insights from partners. The primary data was triangulated with publicly available secondary sources of information on the "Unite! OER courses" project, university guidelines, and national, European, and global level policy documents on OER and Open Science. During an in-person meeting, all project partners also engaged in a focus group discussion to reflect on the successes, outcomes, and lessons learned from the project. The discussion was recorded and documented in written form.

The iterative data collection process allowed for continuous input from project partners. Regular reviews of the project were conducted, enabling adaptations based on challenges encountered during the translation and video production phases. This flexible approach ensured that the final products were tailored to meet the specific needs of the partner institutions while maintaining overall project goals (Schön et al., 2024): All partner institutions had the opportunity to customize the MOOC content to reflect the particular needs and contexts of their countries, as well as to integrate it with the current OER strategies and activities at their universities.

For this article, we subsequently invited all project partners to provide their assessment of the project's impact, and all partners were encouraged to collaboratively contribute to the writing of this paper. The case study is structured to provide an overview of the project's background, development processes, the resources produced, and an analysis of the outcomes and its perceived impact.

4 Results

4.1 Background and overview

The Unite! alliance is actively committed to the advancement of Open Science and OER within its partner universities, contributing to broader European and international goals of fostering transparency, accessibility, legitimisation, and collaboration in education and research. Unite! has established various Open Science initiatives, such as the Open Science Summer School and Open Science Policy Forums hosted at Aalto University, where emerging perspectives were explored to promote a transition from modern science to open science in Higher Education. These initiatives reflect the strategic objectives outlined in the Unite! Open Science and Innovation Roadmap (Unite!, 2022). The Open Science trainings emphasize the technical and philosophical changes needed to embrace Open Science in the digital era, fostering collaboration and knowledge sharing across Europe (Unite!, 2022).

Therefore, the "Unite! OER course" project was motivated by several factors:

1. The need to develop and foster competence development concerning open science, where OER and open licenses are a very good first step.

2. Support for Open Science by making educational resources widely accessible and promoting collaborative content development as described, e.g., in the Unite! Open Science Roadmap (2022).

3. The desire to enhance digital competencies and equip educators with the skills to integrate OER into their curricula.

The Unite! OER project was developed to support the creation of multilingual educational resources as part of the broader Open Science movement. The MOOC and accompanying OER

course were designed to be accessible in 12 languages – German, English, French, Polish, Finnish, Portuguese, Italian, and Catalan, with additional versions produced in Turkish, Indonesian, and Arabic (Schön et al., 2024). The aim was to make OER widely available across the Unite! universities, with a particular focus on improving digital literacy and novel open science competencies and fostering collaboration among students and educators.

The course was integrated into the Unite! Metacampus, Unite!'s federated learning management platform for all participating universities. This platform enabled students and lecturers to access the MOOC and learning materials, making the project a model for future multilingual educational initiatives (Unite! University, 2024).

4.2 Process of the OER MOOC production

The production of the Unite! OER MOOC followed several phases: The timeline, as shown in Figure 2 for the MOOC production, includes the development and quality assurance of all MOOC texts and learning videos (see Figure 3).

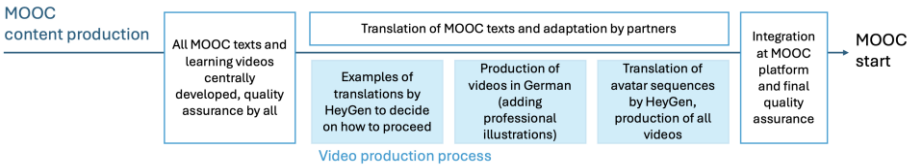

Figure 3: Timeline of the production of the MOOC "OER in HE" and its videos using HeyGen (Schön et al., 2025, Figure 3, p. 34)

The first draft of the MOOC concept built up on the extensive experience of the project lead in the field, having developed several MOOCs on OER, starting with the very first German-language MOOC on OER a decade ago (Arnold et al., 2015). The first drafts for course materials and video scripts were initially developed in English. According to the original project proposal and description, the plan was to produce all videos in English and subsequently add subtitles or voice-over narration to make them accessible in other languages. As initial tests with HeyGen had already taken place, we agreed to experiment with the tool to see how it could support the creation of language variants. Concerning the scripts, a comprehensive quality assurance process has followed that included feedback from partner institutions on both content and video production. Then, the AI tool HeyGen allowed for the automatic translation of video scripts and the creation of instructor avatars that delivered the course in different languages. Nevertheless, we were unsure about the quality. So, examples of HeyGen's automatic translations and pronunciation of some typical sentences and formulations in all partner languages were produced and evaluated by all partners. Partners could then choose between fully translated videos or English videos with subtitles. For example, the Finnish and Catalan versions used English videos with subtitles. It is important that the decision for an automatic translation quality by HeyGen was based on HeyGen's status in January 2024. Generally, the use of AI presented challenges, particularly in the automatic translation of technical terms and years (numbers). Several revisions were required to address issues related to gendered language, terminology, and the handling of numbers in different languages. These revisions were made iteratively, with input from all partners to ensure accuracy and cultural relevance. Overall, the decision to use the AI tool HeyGen to create multilingual video content significantly reduced the time and costs associated with translation and traditional multilingual video production. However, human

experts were still responsible for the professional visualisation and editing of the videos, which made a concise evaluation process essential, as the video team did not speak most of the target languages.

Beyond the videos, each institution adapted the content of the MOOC to reflect national regulations and repositories, making the MOOC relevant to local contexts (Schön et al., 2024).

4.3 Description of produced OER

The project resulted in the production of several key OER resources; all materials are published under a CC BY 4.0 International license.

- A MOOC on OER, available now in 12 languages (three in addition to the core project), was designed to introduce the concept of OER and explain how to find and use open resources as well as to show how to publish OER using open licenses such as Creative Commons (Schön et al., 2024).
- The MOOC was hosted on the iMooX.at [1] platform and made freely available to participants across Europe.
- In addition, the course was integrated into the Unite! Metacampus, allowing students and lecturers to access live sessions and interactive content (Unite! University, 2024).

The MOOC was produced in several languages to cater to a diverse European higher education audience, mainly to TU Graz's partners in the alliance:

- German (TU Graz for Austria, TU Darmstadt for Germany)
- English (designed as an international version for the European higher education area)
- Finnish (Aalto University)
- French (Grenoble INP graduate school of engineering and management, UGA Grenoble)
- Italian (Politecnico di Torino)
- Catalan (Universitat Politècnica de Catalunya/BarcelonaTech)
- Polish (Wroclaw University of Science and Technology)
- Portuguese (Universidade de Lisboa)
- Swedish (KTH Royal Institute of Technology)

The MOOC started on 6 May 2024 and comprised four units with a total of 11 videos in each language, each about three to six minutes long. The four units introduce OER and open license and the MOOC, how to find and use OER, how to produce and publish OER, and introduce Open Science and OER policies. Figure 4 shows screenshots of the videos with avatars of the lecturers. As we will describe later, we had two additional language versions available at the MOOC start as well.

[1] Retrieved June 12, 2025, from https://imoox.at/course/OERinHE

Figure 4: Screenshots of videos in different languages produced for the MOOC "OER in HE"

In addition to the MOOC, there was a university course "Open Educational Resources" offered by TU Graz. This English-language course was open to all Unite! members via the Unite! federated learning management system, Metacampus (see Alcober & Mohammadali, 2023; Ebner et al., 2024). The course expands on the MOOC content, providing additional insights and practical training on finding, publishing, and understanding OER, and offers the opportunity to earn the Austrian national OER certificate (see Schön et al., 2023). For this, in addition to the MOOC content, the university lecture included in-person sessions, and all participants were required to create three OER as part of the course. Slides and additional materials for the course are available under an open license in the TU Graz OER repository (see Schön & Ebner, 2024).

4.4 Project results and outcomes concerning the primary use: OER MOOC and OER course

The MOOC exceeded its target enrolment, with over 800 registered participants from across the alliance. This success highlights the demand for accessible, multilingual OER in European higher education. From the outset of the project, it was clear that the MOOC would remain available as a self-paced learning resource for at least one year following its initial run. The continued use of the MOOC is evident from the number of currently registered 1,400 participants as of May 2025. It should be noted that this figure does not account for participants who may have unenrolled from the MOOC.

The university course had 85 registered participants at Metacampus (July 19, 2024), and 13 of them successfully finished the course (10 from TU Graz, 3 from partner universities). The dropout rate can largely be explained by the nature of the university course as an optional learning opportunity. It was designed as an open-access MOOC, but formal academic credit was only available to students of TU Graz. Furthermore, the course required a considerable time commitment, including completing all modules and assignments, which may have contributed to the attrition among participants who did not seek credit or had competing priorities. These factors likely played a significant role in the lower completion rate. In addition, the capacity-building workshop organized as part of the project equipped lecturers with the tools and skills

needed to integrate OER into their teaching. This workshop with 10 experts from 7 of the Unite! universities were instrumental in ensuring the long-term sustainability of OER practices within the Unite! alliance. The outcome of the activity is that all participants, whether in the MOOC, the course, or the training sessions experienced a significant increase in their competencies related to Open Educational Resources (OER) and therefore in Open Science. We would like to highlight that competence development was ensured through mandatory course requirements: MOOC participants had to pass OER-related quizzes, and university lecture participants were required to create three OER. These tasks provide concrete evidence of the participants' acquired competencies in OER and Open Science.

4.5 Additional project results and impact

4.5.1 Additional OER that was developed within the project

Several additional Open Educational Resources (OER) were developed and published under open licenses as part of the project, including a presentation on OER that was shared with project participants during the project kick-off and a new version of the OER Canvas from TU Graz adapted for the Unite! alliance (Technische Universität Graz, 2024). In preparation for the facilitator training, numerous tools and resources were published by the project leadership to familiarize colleagues with these materials. These tools were designed to be translated and adapted by the participants. The collection of these tools also provides an extensive overview of all the materials used throughout the project. (see Figure 5).

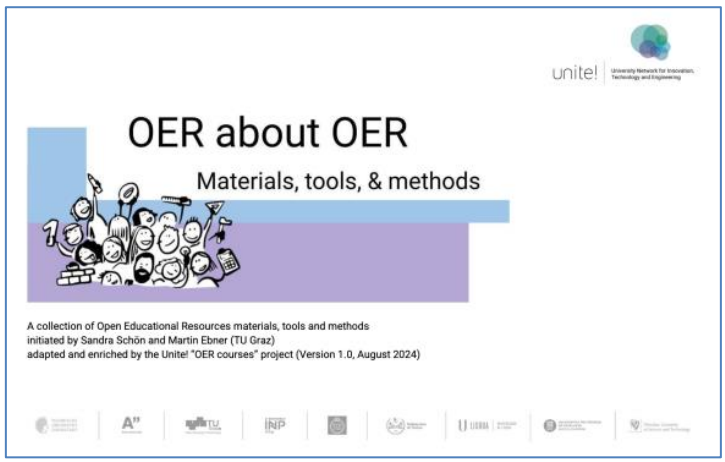

Figure 5: Cover of the published collection of OER materials, tools and methods (under CC BY 4.0 International). (Schön & Ebner, 2024, Screenshot of the Cover).

4.5.2 Extra translations into Turkish, Indonesian language and Arabic language

OER facilitate collaboration, and as a result, external partners beyond the core project team engaged in the development of additional language versions from an early stage. Due to the open licensing and the active consent of all project partners at the project's start, interest from external institutions emerged quickly. During the general development of the MOOC, colleagues from Universitas Negeri Malang (Indonesia) and Atatürk Üniversitesi (Turkey) began creating their own versions. For the Indonesian version, the AI-based tool HeyGen was used to produce localized video content. Given the limited project budget, the Turkish adaptation utilized the original English-language videos with the addition of Turkish subtitles, while the MOOC content

itself was fully adapted by the Turkish partner. Following the official conclusion of the MOOC, an Arabic-speaking colleague further developed an Arabic version of the course, including Arabic subtitles, which was completed in October 2024. In total, the MOOC is now available in 12 language versions.

The creation of these additional language versions represents a significant impact of the project itself, as it demonstrates how the open licensing approach, combined with the openness of the project leadership to involve external partners, enabled broader international engagement and adaptation. These developments clearly extend the reach and relevance of the project far beyond the initial consortium, illustrating the practical benefits of open educational practices in fostering collaboration and localization. While the effects of these additional language versions on the collaborating partners have not yet been systematically analysed within this contribution, they undoubtedly reflect an important outcome of the project and offer valuable potential for future research and evaluation.

4.5.3 Exemplary impacts for Unite! Partners

The following list gives an overview of some exemplary impacts described by some of the partners in the project "Unite! OER course":

At TU Graz, the lecture about OER is now part of the regular curriculum in teacher education and an optional offer for all students. Starting in spring 2025, TU Graz offer as well an OER training as part of its lifelong learning program for external people. The project Unite! OER course gave the opportunity to develop new competencies in insights into how to use AI (HeyGen) for multilingual MOOC development and the needed processes.

At Aalto University, the project has been seen as a pilot to collect experiences on how to spread OER and Open Science competences within the Alliance. First, a lecture on Higher Education OER Policies: Examples from Institutional to European level was organised. Second, the MOOC materials are being evaluated to be used in training sessions of Aalto's Open Science Unit.

KTH Royal Institute of Technology utilised the MOOC materials in a OER lifelong learning course LD1013 Sustainable Knowledge Dissemination through OER and Open Science (2 ECTS). This self-paced online course ran from June to December 2024 and admitted a total of 53 students. A joint publication about OER is planned for an engineering education conference.

Politecnico di Torino, after contributing to the Italian translation of the MOOC, is considering incorporating it in the existing PhD soft-skills course, Research Data Management and Open Science, and in the seminars dedicated to the Open Science practices addressed to the researchers of Politecnico di Torino. A postdoc research fellow has attended the MOOC and explored how it could be integrated into the different courses.

For Universidade de Lisboa the "Unite! OER courses" project enabled the development of critical competencies and insights into utilizing AI tools for the creation of multilingual MOOCs. The future inclusion of Open Educational Resources (OER) in the teacher education curriculum

highlights its significance in training educators for the integration of open and innovative teaching practices.

The Technical University of Darmstadt is examining the use of the MOOC materials in various degree programs, particularly in the field of Digital Humanities.

4.5.4 Overview of the impact of the project by Unite! partners

Some partners also shared their perceived impact of the Unite! OER Courses project. The main authors asked partners to evaluate the impact using the criteria seen in Table 1. Please note that we have also included *transformative impact*, even though it may not be realistic for a relatively small initiative like this. However, we included it to provide a full range of potential impact assessments.

- 0 = No impact: No discernible effect on activities or outcomes.
- ■ = Some impact (not measurable): Minor influence, but difficult to quantify or prove.
- ■ ■ = Moderate impact (measurable): Measurable effects with moderate influence on practices, resources, or learning outcomes.
- ■ ■ ■ = Significant impact: Strong, measurable influence that contributes noticeably to teaching, learning, or institutional practices.
- (■ ■ ■ ■ = Transformative Impact)

Table 1: Overview of perceived impact of the "Unite! OER courses" project for the partners who provided feedback (December 2024)

Partner	Perceived impact
Aalto University	■ ■
KTH Royal Institute of Technology	■ ■
Politecnico di Torino	■ ■
Universidade de Lisboa	■ ■
TU Graz	■ ■ ■
TU Darmstadt	■

Not all partners or contact persons participated in this survey four months after the project's completion. There may be various reasons for this, such as different thematic priorities or role changes. However, it also suggests that the impact was likely higher for the universities that did participate.

5 Discussion and conclusion

The Unite! OER Course Project demonstrated both the opportunities and challenges of implementing Open Educational Resources (OER) in a multilingual and cross-institutional setting. One key insight is that OER is still a relatively new topic in some institutions, showing that its adoption and impact vary significantly. While some universities already have established

OER or Open Science policies and practices, in line with their educational and research assessment systems, others are still in the early stages of engagement, which influenced how deeply the project was integrated into local educational strategies.

Another critical factor influencing impact was language availability. While the project successfully produced a multilingual MOOC, it became evident that not all languages currently have a strong base of existing learning resources on the topic of OER.

At the core of the project's sustainability is open licensing. The ability to reuse and adapt materials depends entirely on the fact that the course and its resources were published under a Creative Commons (CC BY 4.0) license. Without open licensing, widespread adoption and integration into different institutional settings would not have been possible due to copyright limitations. This reinforces the idea that for OER to have a lasting impact, institutions must prioritize not only creating resources but also ensuring they are openly licensed (OER).

Another important takeaway is that institutional engagement played a significant role in determining impact. Universities that actively participated in the project, integrated OER into their curricula, or made efforts to promote the course locally reported stronger outcomes. In contrast, partners with lower engagement saw more limited effects or did not report. This suggests that embedding OER into institutional policies and connecting it to existing educational programs is crucial for long-term sustainability.

Feedback from partners highlighted that the initiative and engagement of the project lead were essential factors in the project's success. Some partners noted that the project's impact was not only due to the availability and quality of resources but also because they were actively encouraged to explore implementation at their own institutions. The structured support and proactive outreach of the project team ensured that OER adoption was not left to chance but actively facilitated through discussions, guidance, and follow-ups. One of the lessons learned is that, given the limited funding of the SEED project, further progress on the topic by the engaged institutions will likely depend on securing additional funding, prompting reflection on possible future scenarios and next steps.

In summary, the "Unite! OER Course" project has shown that while OER provides powerful opportunities for fostering Open Science and digital learning, its success depends on institutional commitment, language accessibility, open licensing, and proactive engagement from project leadership and partners. Addressing these factors in future initiatives will be key to further scaling the impact of learning offers and materials provided as OER in European higher education.

To our knowledge, there is no comparable MOOC project that has produced multiple language versions in the way ours has. We assume that this aspect of our project is, in fact, the first of its kind globally. This was made possible by the use of open licenses and the OER approach, and likely also because the project itself focused on OER, which raised awareness among all contributors that the materials and results were intended to be reused and adapted. However, we are not aware of any similar documented cases or descriptions that could serve as a direct reference for comparison

References

Alcober, J., & Mohammadali, F. H. (2023). The digital platform for the Unite! Alliance: The Metacampus. 9th International Conference on Higher Education Advances (HEAd'23), Universitat Politècnica de València, València. https://doi.org/10.4995/HEAd23.2023.16265

Arnold, P., Kumar, S., Schön, S., Ebner, M., & Thillosen, A. (2015). A MOOC on Open Educational Resources as an Open Educational Resource: COER13. In J. R. Corbeil, M. E. Corbeil, & B. H. Khan (Eds.), *The MOOC case book: Case studies in MOOC design, development and implementation* (pp. 247–258). Linus Learning.

Atenas, J., Ebner, M., Ehlers, U.-D., Nascimbeni, F., & Schön, S. (2024). An introduction to open educational resources and their implementation in higher education worldwide. *Weizenbaum Journal of the Digital Society, 4*(4). https://doi.org/10.34669/wi.wjds/4.4.3

Atenas, J., Havemann, L., & Timmermann, C. (2020). Critical literacies for a datafied society: Academic development and curriculum design in higher education. *Research in Learning Technology, 28*, 2337. https://doi.org/10.25304/rlt.v28.2337

Ebner, M. (2021, November). iMooX - a MOOC platform for all (universities). 2021 7th International Conference on Electrical, Electronics and Information Engineering (ICEEIE), 1–5. https://doi.org/10.1109/ICEEIE52663.2021.9616685

Ebner, M., Edelsbrunner, S., Grigoriadis, Y., Schauer, J., & Schön, S. (2021). Learning video canvas: Collection of ideas for the learning video (Versions 2021-04). Zenodo. https://doi.org/10.5281/zenodo.4624701

Ebner, M., Lorenz, A., Lackner, E., Kopp, M., Kumar, S., Schön, S., & Wittke, A. (2016). How OER enhance MOOCs – A perspective from German-speaking Europe. In M. Jemni, Kinshuk, & M. K. Khribi (Eds.), *Open education: From OERs to MOOCs* (pp. 205–220). Springer. https://doi.org/10.1007/978-3-662-52925-6_11

Ebner, M., Orr, D., & Schön, S. (2022). OER impact assessment: A framework for higher education institutions and beyond. *Open Education Studies, 4*(1), 296–309. https://doi.org/10.1515/edu-2022-0018

Ebner, M., Schön, S., Alcober, J., Bertonasco, R., Bonani, F., Cruz, L., ... Würz, A. (2024). Aligning IT infrastructures for digital learning amongst the European university alliance Unite! - The Unite! digital campus framework and requirements (1.0). Unite! Community 2 Digital Campus, Graz University of Technology. https://doi.org/10.3217/36yen-0wy21

Ebner, M., Schön, S., Ebner, M., Edelsbrunner, S., & Hohla, K. (2022). Potential impact of open educational resources and practices for good teaching at universities: The OER impact assessment at TU Graz. In M. E. Auer, A. Pester, & D. May (Eds.), *Learning with technologies and technologies in learning: Experience, trends and challenges in higher education* (pp. 79–99). Springer. https://doi.org/10.1007/978-3-031-04286-7_5

Edelsbrunner, S., Gritsch, P., Ebner, M., Lanzinger, M., & Schön, S. (in press). "MOOCing ohne Mensch" Fallstudie zum KI-generierten MOOC „Societech". GMW 2024 Proceedings.

European Commission. (2020). Digital education action plan (2021–2027): Resetting education and training for the digital age. Publications Office of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0624

Gröblinger, O., Ganguly, R., Hack, C., Ebner, M., & Kopp, M. (2021). Dezentral bereitstellen – zentral finden. Zur Umsetzung hochschulübergreifender OER-Angebote. In C. Gabellini, S. Gallner, F. Imboden, M. Kuurstra, & P. Tremp (Eds.), *Lehrentwicklung by Openness – Open Educational Resources im Hochschulkontext* (pp. 39–44). Pädagogische Hochschule Luzern. https://doi.org/10.5281/zenodo.5004445

Jahic, I., Ebner, M., & Schön, S. (2023). Harnessing the power of artificial intelligence and ChatGPT in education – A first rapid literature review. In T. Bastiaens (Ed.), Proceedings of EdMedia + Innovate Learning (pp. 1462–1470). Association for the Advancement of Computing in Education (AACE). https://www.learntechlib.org/primary/p/222670/

Jahić, I., Ebner, M., Schön, S., & Edelsbrunner, S. (2024). Exploring the Use of Generative AI in Education: Broadening the Scope. In P. Zaphiris & A. Ioannou (Eds.), *Learning and Collaboration Technologies* (Vol. 14724, pp. 283–304). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-61691-4_19

Neumann, J., Schön, S., Bedenlier, S., Ebner, M., Edelsbrunner, S., Krüger, N., ... Zawacki-Richter, O. (2022). Approaches to monitor and evaluate OER policies in higher education – Tracing developments in Germany, Austria, and Switzerland. *Asian Journal of Distance Education, 17*(1). http://asianjde.com/ojs/index.php/AsianJDE/article/view/619

Nußbaumer, D., Mair, B., Schön, S., Edelsbrunner, S., & Ebner, M. (2024). Evaluating the efficacy of automated video editing in educational content production: A time efficiency and learner perspective study. In P. Zaphiris & A. Ioannou (Eds.), Learning and collaboration technologies - 11th International Conference, LCT 2024, held as part of the 26th HCI International Conference, HCII 2024, Proceedings (pp. 234–246). Springer. https://doi.org/10.1007/978-3-031-61672-3_15

Pirkis, J., Herrman, H., Schweitzer, I., Yung, A., Grigg, M., & Burgess, P. (2001). Evaluating complex, collaborative programmes: The Partnership Project as a case study. *Australian & New Zealand Journal of Psychiatry, 35*(5), 639–646. https://doi.org/10.1080/0004867010060513

Schön, S., Brünner, B., Ebner, M., Edelsbrunner, S., Hohla-Sejkora, K., Uhl, B. (2025). Early Findings from Pilots in AI-Driven Education: Effects of AI-Generated Courses and Videos on Learning and Teaching. In Auer, M.E., May, D. (Eds.) *2024 Yearbook Emerging Technologies in Learning. Learning and Analytics in Intelligent Systems*, (Vol 44., pp. 23–44) Springer, Cham. https://doi.org/10.1007/978-3-031-80388-8_2

Schön, S., & Ebner, M. (2020). Open educational resources in Austria. In R. Huang, D. Liu, A. Tlili, Y. Gao, & R. Koper (Eds.), *Current state of open educational resources in the "Belt and Road" countries* (pp. 17–33). Springer. https://doi.org/10.1007/978-981-15-3040-1_2

Schön, S., & Ebner, M. (2024). OER about OER: Materials, tools & methods. A collection of open educational resources materials, tools and methods. Report of the Unite! OER Courses project. https://doi.org/10.3217/5bq59-j6c60

Schön, S., Ebner, M., Berger, E., Brandhofer, G., Edelsbrunner, S., Gröblinger, O., ... Steinbacher, H. P. (2023). Development of an Austrian OER certification for higher education institutions and their employees. In D. Otto, G. Scharnberg, M. Kerres, & O. Zawacki-Richter (Eds.), *Distributed learning ecosystems* (pp. 143–160). Springer. https://doi.org/10.1007/978-3-658-38703-7_9

Schön, S., Ebner, M., & Vicente-Saéz, R. (2025). Building OER Competence Across the Unite! Alliance. Insights from the "Unite! OER Courses" Project. *Presentation at Unite! Ed Future Conference*, March 13, 2025. Graz University of Technology. https://doi.org/10.3217/hm2aw-dvh27

Swanborn, P. G. (2010). *Case study research: What, why and how?* SAGE.

Technische Universität Graz. (2020). Richtlinie zu offenen Bildungsressourcen an der Technischen Universität Graz (OER-Policy). https://www.tugraz.at/fileadmin/user_upload/tugrazInternal/Studium/Lehre/RL_OER_Policy_24112020.pdf

Technische Universität Graz. (2024). Canvas for the creation of an open educational resource - Unite! version. https://doi.org/10.3217/s91k8-vbk73

UNESCO. (2019). Recommendation on open educational resources (OER). https://unesdoc.unesco.org/ark:/48223/pf0000370936

UNESCO. (2021). Recommendation on open science. https://doi.org/10.54677/MNMH8546

Unite! University. (2022, August 29). Unite! fosters open science and builds a community of open science support persons. Unite! University News. https://www.unite-university.eu/unitenews/unite-fosters-open-science-and-builds-a-community-of-open-science-support-persons

Unite! University. (2024). Unite! pioneers open science and multilingual OER courses. https://www.unite-university.eu/unitenews/unite-pioneers-open-science-and-multilingual-oer-courses

Vicente-Saez, R., Schön, S., & Ebner, M. (2024). Unite! University Alliance's OER project Unite! OER courses - An open education initiative to develop open science competencies within Unite! (10/2023-09/2024). Presentation 13 March 2024 in the Series „*Aalto RDM & Open Science Training*“. https://zenodo.org/records/10812652

Author’s Contributions

SS: Conceptualization, Methodology, Funding acquisition, Project administration, Investigation, Writing – original draft, Writing – review & editing; ME: Conceptualization, Methodology, Funding acquisition, Project administration, Supervision, Writing – review & editing; KH: Project administration, Writing – review & editing; EK: Validation, Writing – review & editing; AR: Validation, Writing – review & editing; MHR: Validation, Writing – review & editing; RS: Validation, Writing – review & editing; RVS: Project administration, Investigation, Writing – review & editing.

All authors have read and agreed to the published version of the manuscript.

Acknowledgement of Use of Generative AI Tools

The authors acknowledge the use of ChatGPT-4o (Version as of January 2025) in facilitating the drafting of early versions of the manuscript. These drafts were subsequently reviewed, critically edited, and adapted by the human authors to ensure academic rigor and alignment with ethical standards. The authors also assessed and addressed potential biases inherent in the AI-generated content. The final content, conclusions, and assertions in this paper are the sole responsibility of the human authors.

In the creation of this scholarly product, the authors benefited from GAI related to the following areas: Writing – original draft.

Acknowledgement

The project "Unite! OER courses" was co-funded as a seed-fund project of the European University Alliance Unite! (Erasmus+, 2022-2026).

Data Availability

All course materials referred to in this study are openly licensed and publicly available. No additional datasets beyond those described in the article are necessary for replication or further analysis.

Ethics and Consent

All participants at the MOOC (on the Austrian national MOOC platform iMooX.at) and the course at federated Unite! learning management system Metacampus gave their informed consent in compliance with GDPR regulations. Only aggregated participation numbers were analysed. The impact assessments were provided by the co-authors based on their institutional perspectives. No individual-level or sensitive data were collected or reported.

Competing Interests

The authors declare no competing interests.