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Approaches to Monitor and Evaluate OER Policies in Higher Education - Tracing Developments in Germany, Austria, and Switzerland

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Abstract: The 2019 UNESCO recommendation on Open Educational Resources (OER) encourages member states to monitor policies and mechanisms in OER across the world. In higher education, there are many initiatives and policies around OER. This contribution gives insights into the current situation concerning OER policy documents that are of national or institutional relevance for public higher education institutions in Germany, Switzerland, and Austria. For each country, a different approach for identifying OER policy documents was chosen, dependent on the availability of documents and different dominant forms of documentation. Whereas digital documents available on the web were found as helpful sources for Germany, and performance agreements between the national ministry and individual universities were used for analysis in Austria, a survey amongst all universities was the chosen research approach in Switzerland to give an overview about potentially OER related policy documents. All these documents are now made available via the OER World Map. With this contribution, the authors also highlight the possibility of using the OER World Map as a powerful tool to collect and evaluate OER policy documents.

Keywords: open education, open educational resources, OER policies, OER World Map, digitization strategies

Highlights

What is already known about this topic:

- The UNESCO (2019) recommendation encourages the development of supportive OER policies in higher education institutions.
- OER World Map (<https://www.oerworldmap.org>) is a platform, which aims to collect data and information about actors and activities related to OER.
- OE Policy Hub (<https://www.oepolicyhub.org>) provides a collection of >300 policy documents, which refer to open education or OER.

What this paper contributes:

- An overview of the OER higher education landscape in Germany, Austria, and Switzerland.
- The current state of OER policy implementation in the three countries.

Implications for theory, practice and/or policy:

- The article reveals the nature of policy documents in which aspects of OER and Open Education are considered.
- Higher Education Institutions can use this overview as a starting point for developing their own OER strategies and policies
- The results can also be used for further national comparisons or benchmark systems



Introduction

One of the many advantages of Open Educational Resources (OER) is that they can be used free of charge but can also be adapted and reused (e.g., Ebner & Schön 2011). Higher education institutions (HEIs) use OER in different ways (Schaffert, 2010); for about 15 years, countries (Hoosen & Butcher, 2012) as well as the first HEIs have been positioning themselves favourably towards OER for strategic and publicity reasons and developing and publishing dedicated OER strategies (dos Santos et al. 2017; e.g., University of Edinburgh, 2016). National policy documents on OER are developed and published to promote OER. In this paper, we examine the extent to which OER has become visible in policy documents to date in three middle European countries (Germany, Austria, Switzerland) in the field of HEI.

Our contribution has a twofold objective. Firstly, we aim to describe the current state of OER policy making in higher education in Austria, Germany and Switzerland using an approach, which combines quantitative and qualitative elements. By doing so, we hope to provide deeper insights into the functioning of OER policy making and possibilities to monitor OER policies and its effects in these central European countries (see UNESCO, 2019). At the same time, we want to provide a first orientation which could support better assessment of our future national developments, as well as the monitoring of ongoing OER adoption. We believe that an overview of OER policies might form a good starting point to conceptualize a more comprehensive monitoring system, which could help to evaluate future OER-programs and support collaboration on an international level.

Conceptual Framework

OER Policy

The OER World Map (<https://www.oerworldmap.org>) is a platform that collects data and information about actors and activities related to OER. It uses state of the art linked open data technology and currently provides more than 6400 entries. The project has been funded by the William and Flora Hewlett Foundation since 2014 and was developed by the North-Rhine-Westphalian Library Service Center (hbz) till March 2021. Currently, it is in a major organisational transition phase. One of the major lessons learned from the OER World Map project is that comprehensive data collection is possible, but requires systematic impulses, for example in the form of editorial support. To improve the user experience of the platform, the OER World Map recently developed the OE Policy Hub (<https://www.oepolicyhub.org>, OEPH). The OEPH is a satellite site that accesses the central data pool of the OER World Map, but at the same time can be adapted in terms of structure and layout to the needs of a specific user group, in this case policy makers. The data provided on the OEPH includes the OE Policy Registry, a collection of more than 300 policy documents, which refer to OE or OER.

The OE Policy Hub defines Open Education Policies as "regulations and strategies, which foster the development and implementation of Open Educational Practices, including the creation and use of Open Educational Resources, by governments, institutions, and other organisations. They allocate resources and orchestrate activities to increase access to as well as quality, efficiency and innovation of education."

Within this contribution, we exclusively refer to higher education policies on or about OER. Many of the initiatives and policies described have a broader scope, such as covering digitalization or open education, including the introduction of open teaching methods and practices (Inamorato dos Santos,

Punie & Castaño-Muñoz 2016; Nascimbeni & Burgos, 2016, Atenas et al., 2019). Within our contribution, we focus on OER as openly licensed learning, teaching and research materials as defined by UNESCO¹.

One important insight gained within the development of the OE Policy Hub is that it is surprisingly difficult to define the term 'OER-policy' precisely and conclusively. According to our experience, the term 'policy' is used differently in different contexts and geographical regions. Even though we are not able to work out a conclusive typology of policies at this point, we would like to go into some particularly important differences in more detail below.

Policy Initiatives Versus Policy Documents

The term "Policy" is also be used in a broader way, as "policy initiative" (cf. Morestin, 2012), which is not restricted to documents, but describes complex institutional processes which develop over time and which, in addition to policy documents, also includes implementation measures such as projects, programmes and services. To avoid misunderstandings, we use the term 'policy document' in the relevant places. OER policy documents are written manifestations of decisions of the senior management of an institution to foster the development and use of OER. Following this definition, different types of policy documents can be identified. The OER World Map/OE Policy Hub currently distinguishes between five different types of policy document; they are legislation, policy documents, strategy documents, call for tender and 'other'.

Looking at the different types of policies it can be stated that some policy documents provide strategic orientation, while others represent concrete regulations, which must be observed by the members of the institution applying them. While occasionally policy and strategy are different, but complementary steering instruments, this contribution will summarize both instruments as policy documents in the broader sense.

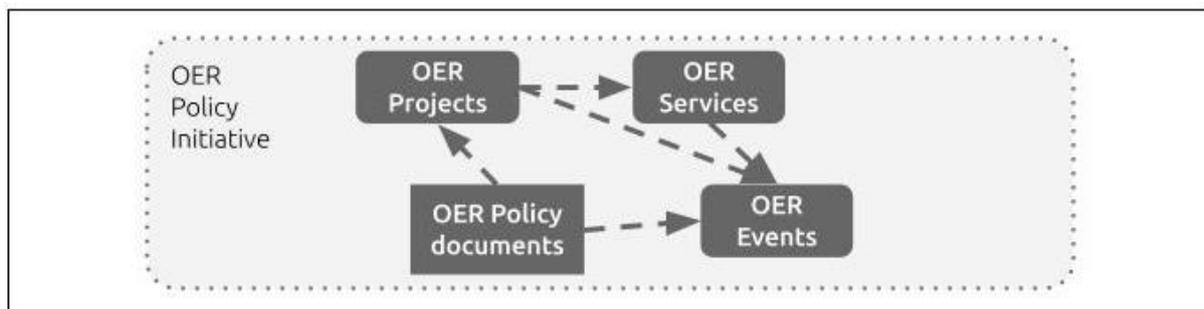


Figure 1. An Influence Map of the structure of OER Policies and its components

Figure 1 shows the structure of an OER policy-initiative and its components. This highlights that policy documents make up only one component of policy initiatives. Arguably it is significantly easier to collect existing policy documents than to model complete policy initiatives, but the full impact of policy documents can only be assessed when considering the entirety of the policy initiatives.

OER Policy Making as Multi-level Governance

Recommendations for analysing (public) policies suggest starting with a description of the logic model of its influence (Morestin, 2012), so we draft relationships of different governance levels in the following:

¹ According to the established definition of the 2012 Paris OER Declaration 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."

OER policy making happens on different political and institutional levels. Figure 2 shows the intertwining nature of OER policy making on the international, national, and institutional level. We embed this in a broader context, highlighting that international policies can influence a national policy, which in turn can initiate and influence HEI policy documents, as well as the vague notion of mutual influence within the worldwide OER movement. Plainly, international policies will themselves be based on experiences at both the national and institutional level, so in fact influence flows in both directions. However, from a multi-level policy perspective, the rationale of international initiatives is that they can scale up and mainstream positive experiences, fostering maximum achievement of the potential of OER.

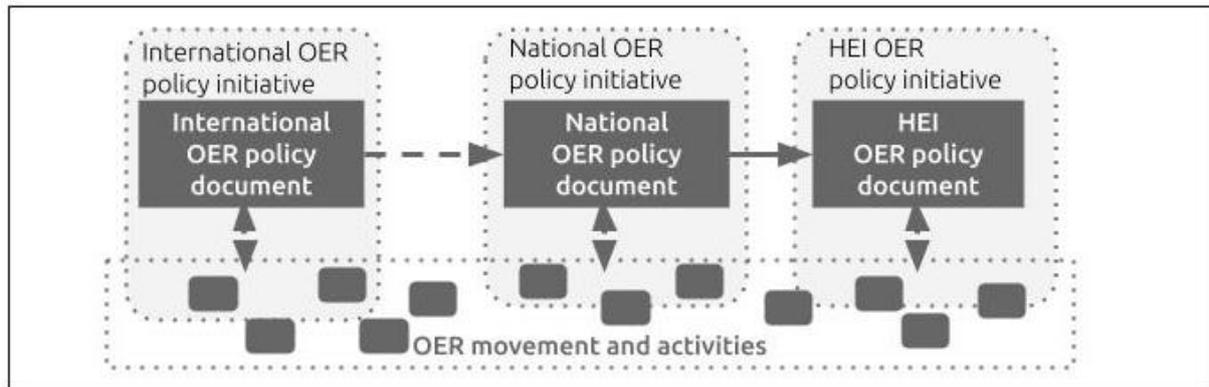


Figure 2. A draft of how (inter-) national OER policy influences a HEI (OER) policy

OER policy making on international level and examples for OER policy documents in higher education worldwide

OER policy making on the international level is the subject of the activities of various multinational institutions like UNESCO, the Commonwealth of Learning, OECD, and the European Community. Probably most influential so far have been the activities of UNESCO, which adopted its Recommendation on OER in November 2019 (UNESCO; 2019). Additionally, we want to sketch the worldwide situation of OER policy documents in HEI.

The UNESCO (2019) Recommendation as International Policy Document

The UNESCO recommendation is the successor to the UNESCO (2019) Declaration on OER, which was adopted in 2012 and includes the most widespread definition of OER so far, and indeed has been considered especially influential for the adoption of OER in Germany during recent years. The UNESCO Recommendation (2019) is an interesting example of an international policy itself, which includes numerous recommended actions, divided into five areas of action:

- Capacity building (“Building capacity of stakeholders to create, access, re-use, adapt and redistribute OER”)
- Policy making (“Developing supportive policy”)
- Inclusive and equitable access to quality OER (“Encouraging effective, inclusive and equitable access to quality OER”)
- Sustainability models for OER (“Nurturing the creation of sustainability models for OER”)
- International cooperation (“Promoting and reinforcing international cooperation”)

Policy making seems to be of particular importance within the overall framework of the recommendation. For example, item 12 states that “member States [...] should develop or encourage policy environments, including those at the institutional and national levels, that are supportive of effective OER practices”. Item 12 a) includes the far-reaching claim that member states should consider “developing and implementing policies [...] which encourage educational resources developed with public funds that are

openly licensed or dedicated to the public domain". If one reads the recommendation carefully, one can extract from it almost a complete blueprint for the research presented within this paper: Item 12 g) recommends "encouraging and supporting research on OER, through relevant research programmes on OER development, sharing and evaluating". Within item 15, the recommendation claims that "Member States should promote and reinforce international cooperation among all relevant stakeholders, whether on a bilateral or multilateral basis." Finally, within item 16, the recommendation expresses that "Member States should [...] monitor policies and mechanisms related to OER using a combination of quantitative and qualitative approaches". To do so, Member States are encouraged to deploy "appropriate research mechanisms to measure the effectiveness and efficiency of OER policies and incentives against defined objectives" and to develop "strategies to monitor the educational effectiveness and long-term financial efficiency of OER." In this respect, the present contribution attempts to take up the objectives set by the UNESCO recommendation and to take the first steps towards their implementation in practice.

National and Institutional OER Policy Documents in HEI Worldwide

Marín et al. (2020) investigated the influence of country-specific contexts on the development of national or state-wide policies for digital infrastructures and their implementation of OER with a focus on HE. The authors investigated ten nations worldwide and found that most of them referred to high level plans in terms of strategies (China, Germany, Japan, South Korea, Turkey) or to working papers with influence on national or provincial policy (Spain) with some connection to OER. Australia and the United States also had some initiatives, but they were not connected to OER policy documents. For instance, the #GoOpen initiative by the U.S. Department of Education supports states in the use of openly licensed educational materials but does not mandate its use (see <https://tech.ed.gov/open/states/>). It was only the national government of South Africa that had developed "several policies where OER are referred to, with the most recent being the Call for comments on the open learning policy framework for South African post-school education and training (2017)" (Marín et al., 2020, p. 251).

Marín et al. (under review) also collected and presented OER policies within HEI or related research and data in 10 nations:

- In the case of **South Korea**, each university develops its own OER policy. As a HEI case, "Seoul National University has three different policy frameworks for OER selection and management: a) for internal courses, b) for Korean MOOCs, and c) for global MOOCs (edX)" (Marín et al., under review, p. 7).
- In **Australia**, the University of Wollongong and the University of Technology Sydney are two examples of Australian HEI that do not actually have an OER policy as such, but had targeted strategies towards OER (Marín et al., under review; Stagg et al., 2018).
- Few universities in **Canada** have OER policies. As an example, "Ontario's University of Windsor [...] enacted OER policies with a Senate motion in 2016 advocating the use of OER, and the establishment of an Office of Open Learning that supported the development and use of OER/P" (Marín et al., under review, p. 8).
- A different case is the University of Cape Town in **South Africa**, where there is no actual OER policy but its Intellectual Property Policy (2011) "intentionally supports open educational practice" (Cronin, 2019, p. 7), assigns copyright of the course materials to the author/s and encourages academics to share them as OER (Cox & Trotter, 2016).
- In **Spain**, 16 out of 34 Spanish universities with open access policies included OER in their documents. The Open Access policy of the Open University of Catalonia (UOC) is one of the most comprehensive of all the universities with this policy and refers to OER: the teaching materials are to be published first under copyright during a specific period, after which they are published with Creative Commons licenses (UOC, 2010). Another Spanish policy that refers to OER more concretely is the International University of La Rioja's Open Education policy (UNIR, n.d.), published by the Research Institute for Innovation and Technology in Education, which

specifies the institution's vision towards Open Education (including OER). UNIR encourages both staff and students to "use, create and publish OE resources and services to enhance the quality of the student experience, enhance the provision of learning opportunities for all, and improve teaching practices" (UNIR, n.d.). The strategic priorities of the policy are five: P1) increase the amount of UNIR resources released as OER, P2) integrate existing OER as appropriate into UNIR courses, P3) support the creation of OER as academic resources, P4) develop an open access approach for UNIR research data, and P5) contribute to the awareness of open education into society and the academic community at large (UNIR, n.d.).

- Not being part of the comparative study case mentioned before, the **United Kingdom** has some exemplary cases of OER policies in HE. As Campbell states (2019), Glasgow Caledonian University was the first university in Scotland to approve an interim open education resources policy in 2015. The University of Edinburgh has published its OER policy (Open.Ed) in 2018, approved by the University's Learning and Teaching Committee. As Cronin (2019, pp.7-8) explains, "Open.Ed includes an institutional OER policy as well as an array of supporting resources for learning and teaching using OER. The policy is rooted in a vision for OER that encompasses 'education, research collections, enlightenment and civic mission'". The policy "encourages (University) staff and students to use, create, and publish OERs to enhance the quality of the student experience, enhance the provision of learning opportunities for all, and improve teaching practices" (The University of Edinburgh, 2016, p. 1) and was adapted from OER policies at the University of Leeds, the University of Greenwich, and Glasgow Caledonian University.
- Another case outside the comparative study case is **Morocco**. The "OER Morocco declaration" launched in 2016 by a consortium of universities is a relevant highlight in the country related to OER policy that provides a combination of guidelines to adopt OE, including OER, in higher education (Zaatri et al., 2020).

As can be observed from this overview, other studies have discussed examples of OER institutional policy documents and strategy papers, but these are still scarce and do not cover all HEI within the countries. In this contribution we will analyse the cases of Germany, Switzerland, and Austria, highlighting their similarities and differences.

Research Questions and Methodology

Research Questions

This study will answer the following two research questions:

- RQ 1: Are documents available that can be used to monitor the relevance of OER in HEI, especially in public universities in Germany, Switzerland, and Austria?
- RQ 2: What are the results and insights of using such documents for monitoring?

To answer our research questions, we checked existing documents in the field of HEI institutional level and defined an appropriate and fitting research approach to collate and analyse relevant documents in the countries (Germany, Switzerland, Austria).

Types of Policy Documents Addressed in this Research

In this research, we have focused on single universities in Germany, Austria, and Switzerland and have identified the following types of relevant (OER) policy documents:

1. Institutional OER policy documents: Policies, which provide concrete rules of conduct concerning the development and use of OER within an institution and which are usually explicitly designated policies.

2. Institutional strategy papers: Policies, which express the decision to address, amongst others, the topic of OER in the future, such as digitalisation strategies or strategies for future teaching and learning.
3. Performance agreements: Regulative agreements between higher education institutions and the respective responsible state ministries that can stipulate the development and use of OER, thereby leaving the higher education institutions a certain amount of freedom for detailed control. Performance agreements seem to be of special interest since they are manifestations of a negotiation process between the state level and the institutional level.

Although we occasionally refer to national policies, their collection was not the explicit aim of the present work.

Overview of Methodologies within the Multi-Case Study

This contribution is a multi-case study (Mills, Durepos & Wiebe, 2010). To analyse the OER policies in higher education in Germany, Austria, and Switzerland, we needed to select and use different methodologies. For Germany and Austria, relevant documents were available publicly and could be at last partly retrieved online, whereas for Switzerland, universities needed to be contacted directly and were asked concerning relevant documents. Table 1 gives an overview of the different sources and methodologies.

Table 1. Overview of Methodology for OER document analysis in higher education of Germany, Switzerland, and Austria

Methodology	Germany	Switzerland	Austria
Focus of collected Data	Digitalisation Strategies (Status April 2021)	OER relevant documents (Status April 2021)	Performance Agreements (2019-2021) (Status April 2021)
Collection of Data	Search for publicly available digitalisation strategies of the 131 German universities that are allowed to confer PhD degrees and are publicly funded	Survey amongst 40 HEI	Search for the publicly available performance agreements of all 22 public universities
Comment on data coverage	17 were found	60% response rate	All 22 are available
Analysis of Data	Documents were analysed concerning mentions of OER.	Documents were described and ordered.	Documents were analysed concerning mentions of OER.

The analyses presented here took place in the period from March to July 2021. For reasons of space, the documents analysed in this paper can be found in a separate document; they are each marked with an asterisk (Neumann et al., 2022).

For each country, we describe the concrete procedures, the documents examined and the results, against the background of a brief sketch of the landscape of public universities within the following chapter.

Findings

OER Policies in German Higher Education

German HEI Landscape and OER

The German higher education system consists of a total number of 420 institutions that catered to a total student body of 2.9 million in the winter term 2020/21 (Hochschulrektorenkonferenz, 2021; Statista, 2020). The central characteristic of the system lies in its compartmentalization with each federal state having sovereignty over the education system (legislation) in the respective state. The system is, for the overwhelming part, publicly funded. Universities, universities of applied sciences, institutions for administration and arts and music education that are allowed to confer PhD degrees and are publicly funded amount to 131 (Hochschulrektorenkonferenz, 2021). These 131 institutions are also considered in the present analysis since it was not feasible to thoroughly analyse all higher education institutions.

The federal states in Germany control higher education development via higher education development contracts (“Hochschulentwicklungspläne”), on the basis of which target agreements are reached with the universities (“Ziel- und Leistungsvereinbarungen”). The agreed goals are incorporated into the respective higher education development plans of the individual universities. A variable part of the allocated budgets is dependent on the achievement of quantitative targets like number of enrolled students or number of graduates (performance-oriented allocation of funds). If the development and publication of OER are included in the target agreements, this represents a high motivation for the universities to move in this direction.

OER policies are often related to developments in digitalisation. Here, German higher education is also very active. Digitalisation has garnered substantial interest over the past years and higher education institutions have increased the digitalisation within teaching and learning, their institutional infrastructures and have also made considerable attempts to broaden their strategic outlook on digitalisation (Gilch et al., 2019). On an applied level, the *Hochschulforum Digitalisierung*, a joint forum of CHE Centrum für Hochschulentwicklung, Hochschulrektorenkonferenz and Stifterverband für die Deutsche Wissenschaft and funded by the Federal Ministry of Education and Research, has emerged since 2014 as a platform. Addressing higher education practitioners and researchers in educational technology it fosters dialogue, shares best practices, and overall aims to advance digitalisation within higher education. Given the decentralized structure of the higher education system, the states are influential regarding policy and decision making, leading to each state having a different take on digitalisation as well, which leads to a highly diversified picture (see Arndt et al., 2020).

While the topic of digitalisation has resulted in digitalisation strategies for the individual federal states (and including higher education) (Bedenlier & Deimann, 2020), the number of specific OER policies has remained low in Germany, in comparison to other countries (Orr, Neumann, Muuß-Mehrholz, 2017) - not only within higher education but across all education sectors (Deimann, Neumann & Muuß-Mehrholz, 2015; Ebner & Schön, 2015; Muuß-Mehrholz & Schaumburg, 2014). However, this situation has begun to change in the past years. Several states now have OER platforms or repositories in place (e.g. Baden-Württemberg, Lower Saxony, North Rhine Westphalia, Hamburg) or have developed open educational offerings alongside ‘closed’ ones. The past years have witnessed major initiatives such as the project behind OERinfo, providing an overview of OER across different education sectors, materials and general information related to OER (<https://open-educational-resources.de/>). Following the inclusion of the planned development of a national OER strategy in the 2018 government coalition contract, in 2021, the federal government scheduled official hearings to finalize the strategy in summer 2021 (Bündnis Freie Bildung, 2021), but so far none was published. Empirical research into the actual use and assumed merits of OER remains scarce (Otto, 2019; 2020). Instructors tentatively see the merits of using OER, but also express reluctance (Schmidt et al., 2017). Indeed, Germany does not follow a nationally concerted strategy but rather has disconnected pieces. Outside educational policy,

major actors often position themselves as part of an “OER movement”, arguing normatively for openness of education (Kerres, 2019).

Data Collection and Analysis

With a view to the fact that OER tends to be viewed within the context of digitalisation in Germany, the analysis focused on digitalisation strategies that mention OER (or similar - see below). The data retrieval of the current strategy papers regarding digitalisation for this contribution occurred in the first half of April 2021. The data retrieval procedure consisted of two steps: Firstly, the full name of the specific higher education institution attached with the phrase “Digitalisierungsstrategie” (digitalisation strategy) was searched for in Google. Text files that could be derived from that step were directly taken into the text corpus for analysis. In case there was no strategy found via the search engine, the second step included an internal search of the official websites of the specific higher education institution, with only the term “Digitalisierungsstrategie” inserted into the search field.

Furthermore, the inclusion of findings was defined by the following criteria. The title had to be rather domain specific and contain one of the following key concepts: “IT” or “elearning” or “Digitalisierung” and “Strateg*”. Otherwise, it had to be published by the general authority of the chair or presidium of the institution and had to be found by the search terms. With this procedure, strategy papers of single departments and units of a university were excluded. In addition, text files that had been collated and made publicly available via URLs as part of the project “Higher Education Institutions’ Digital Strategies (HEIDS)” at Technische Universität Hamburg (Knutzen, Ladwig & Arndt, 2019) were integrated into the corpus and duplicates excluded.

Conclusively, 17 of 131 of the above-described institutions in Germany had a published strategy paper according to the criteria applied here and that we were able to identify via our search. These were taken into consideration for the following analysis. We also identified one explicit OER policy (**Hochschule Reutlingen**, 2019) which we did not include for reasons of consistency - but which serves as anecdotal evidence that institutions have started to consider the topic as separate from digitalisation as such.

In the analysis of the institutions’ digitalisation strategies, we distinguished between three forms of mentioning of OER:

- *No mention*: The terms “Open Education”, “Open Educational Resources”, “OER”, “open license” or the German equivalents or hints are not mentioned in the performance agreements.
- *OER is mentioned*: OER terms are mentioned, but explicit activity in the field is not described or specified.
- *Concrete OER activities are described*: These may be ‘initial enquiries and explorations on the topic in OER pilot projects’ or more advanced activities such as the development of a HEI-wide OER repository.

Findings

Our analysis of the 17 retrieved full text strategy papers results in:

- 5 (29,5%) mention OER and explicitly commit themselves to working towards activities and or strategies that foster the usage, implementation, and distribution of OER.
- 7 (41%) contain a mention of the term open educational resources (OER). They address related concepts such as Open Science, Open Access, Open Data, and rebuilding library infrastructures with Open-Source software in order to foster open education in general.

- So, 12 of 17 (71%) institutions² at least mentioned OER.
- 5 (29,5%) do not mention OER or related concepts.

In the following list we will illustrate example activities that foster the production and usage of OERs at the five institutions that addressed OER in more detail:

- The **Technical University of Braunschweig** explicitly addresses “opening up the university through digitalisation in order to promote social participation, general access to education, and the training of specialists” (Technische Universität Braunschweig*, 2020, p. 7, own translation). Firstly, they define “the production and use of freely accessible OER as one example” (p.7) of achieving the above-mentioned goal. Secondly, they address “the expansion of continuing education offerings in the sense of Open Science” (p. 7, own translation).
- The **University of Bremen** promotes the permanent allocation of “publications (Open Access), teaching and learning materials (OER) and services and infrastructures for handling scientific data” (Universität Bremen*, 2018, p. 31, own translation)
- The **University of Duisburg-Essen** “wants to use educational resources to enrich its own teaching [...] and at the same time to make its own teaching and learning content available to a broader target group in a low-threshold manner” (p. 7). They also aim at fostering disciplinary networking between OER producers. The UDE is focusing its efforts on implementing an OER delivery option with interfaces to existing e-learning tools” (Universität Duisburg-Essen*, 2017, p. 7f., own translation)
- The **University of Osnabrück** clearly identifies three aspects by which the implementation and usage of OER in higher education in Germany is constantly slowed down: “Teachers consider third-party material unsuitable [...], teachers do not know or cannot find suitable material, or the material they have found would have to be edited, trimmed, or supplemented and is not available in a changeable format. [...] Teachers are to a large extent uncertain about which materials may be used under which circumstances [...]” (Universität Osnabrück, 2017, p. 51, own translation) They explicitly strive to participate in the OER movement in three ways: Firstly, “by making its own tools OER-friendly (being able to publish created materials as OER, being able to easily search and embed OER materials, [...] create, maintain, share, and reuse materials with low-threshold tools, etc.);” secondly “through special promotion of the benefits of releasing teaching materials as OER” and thirdly through funding these developments “by participating in calls for proposals on projects that foster the creation and use of OER” (Universität Osnabrück*, 2017, p. 52, own translation)
- The **University of Freiburg** states that an open learning and teaching culture (p.1) is meant to be built with and around OER in order to enhance life-long learning. This culture is meant to offer micro-degrees to translate the output of the university into society. Additionally, they address three levels on which this development is supposed to contribute to basic teaching, informal continuous learning, and knowledge transfer. As concrete measures they describe a “continuous education of teachers about the benefits of OER” and the “development of an OER Policy.” (Universität Freiburg*, 2020, p. 3, own translation).

In the case of the remaining seven digitalisation strategies that mention OER, OER appear to be understood as part of the broader ideas of *openness* (Kerres, 2019; Weller, 2014), that is, referring to related larger discourses in the *Open Education* and *Open Science* movements. For example, major changes in the organizations such as library software development and IT system changes and the support of Open Access publications, are addressed in the cases of University of Bamberg, University

² Universität Bamberg (2019), Universität Bielefeld (2020), Technische Universität Braunschweig (2020), Universität Bremen (2018), Universität Duisburg-Essen (2017), Technische Universität Bergakademie Freiberg (2019), Universität Freiburg (2020), Fernuniversität Hagen (2020), Technische Universität Hamburg-Harburg (2017), Universität Osnabrück (2017), Universität Paderborn (2018/19), Universität Trier (2018).

of Trier, and the FernUniversität in Hagen. Whilst not specifically relating to actual practices, topics such as increasing broad use of blended learning formats for informing about OER (University of Paderborn) or using OER as part of increasing education equality (Technische Universität Bergakademie Freiberg) are mentioned concerning OER. However, these strategies do not seem to elaborate on more concrete aspects and dimensions of OER and only touch upon them in passing.

OER Policies in Switzerland Higher Education

Switzerland's HEI Landscape and OER

The Swiss higher education landscape offers a wide range of study opportunities at all levels (Bachelor's, Master's, Doctor of Philosophy) and is characterised by diversity: ten cantonal universities, two Federal Institutes of Technology (ETH Zurich/EPF Lausanne), the Federal Institute for Vocational Education and Training, the Federal Institute of Sport, nine cantonal or intercantonal universities of applied sciences, 17 universities of teacher education and six university-related accredited institutions according to the Higher Education Funding and Coordination Act (Swissuniversities HEdA, 2021). The universities of applied sciences, which were clustered in regionally organised universities of applied sciences under public law, have been accredited in the last two years, with the result that these universities no longer appear under their umbrella organisation. One example is the Zurich Universities of Applied Sciences ZFH, which consists of the Zurich University of the Arts, Zurich University of Applied Sciences, Zurich University of Teacher Education, and the School of Business Zurich. They are now increasingly operating independently rather than under the ZFH label. Another example is the University of Applied Sciences of Northwestern Switzerland (FHNW), which unites nine universities of applied sciences across several cantons under one organisational umbrella. Some of these sub-universities have a high degree of autonomy. In addition to the universities under public law, there are more than 30 other universities (Schmidt, 2008) or university-related accredited institutions, but these were not considered for this analysis. This complex situation poses a particular challenge for the research questions to be examined in this article.

For Swiss higher education institutions, there is no published white paper on OER that could be used as a set of arguments at the strategic level (Reimer & Edinger, 2014). However, there are efforts at a national level to strengthen OER in higher education in Switzerland, such as the government funding scheme of swissuniversities (swissuniversities, 2021), the national umbrella organisation of the Swiss HEI. In previous years, projects with funding from swissuniversities were able to establish a national conference on OER, the Open Learning Days (openlearningdays.ch, 2021), which will be continued in the forthcoming years. Just recently, at the beginning of 2021, a major collaborative project was started under the P8 funding programme of swissuniversities (swissuniversities digital skills, 2021) with a project duration until 2024. The project "Swiss Digital Skills Academy: Mastering Open Educational Resources (OERs) and Open Educational Platforms (OEPs)" is a common project of 13 Swiss HEI and covers topics like "teach the teachers", "community building", or "accessibility of OER".

Data Collection and Analysis

In many cases, policy documents are published at Swiss universities' homepages. However, when we started our document analysis, we found that many of these strategic documents were quite brief and went into less detail on issues (quite often "OER" was not specially mentioned). As it was not possible to conduct a document analysis for Switzerland, we decided to choose a different method. Through personal networks and web searches, we listed contacts of all 40 HEI in Switzerland. The six university-related accredited institutions mentioned in the Higher Education Funding and Coordination Act were not considered for the survey. Furthermore, the universities mentioned in the clusters of universities of applied sciences are counted as one HEI in our survey, as well as in the Higher Education Funding and Coordination Act (swissuniversities HEdA, 2021).

To acquire the data, the first contact was made through an unstructured e-mail in German and English language. We inquired after the status of OER at the respective university, the existence of OER policy documents and if OER was part of a digitalisation strategy, general strategy document, or a performance agreement of the university. In many cases, further details were obtained by telephone. We also discovered that very different organisational units are responsible for OER policy documents or the promotion of OER at Swiss universities. They were affiliated with either (a) didactics- and e-learning centres, teaching and innovation centres, or blended learning centres, (b) the university administration, centres for higher education development, or the rectorate, or (c) media centres or the university library. For our inquiry into OER policies at HEI in Switzerland, we aimed to cover all 40 Swiss HEIs.

Table 2: Swiss Type of HEI and Response Rate

Type of HEI	Number of HEIs	Responses	Response rate (%)
Cantonal universities	10	7	70
Universities of teacher education	17	10	59
Cantonal/inter-cantonal univ. of applied sciences	9	5	56
Federal Institutes	4	2	50
Total	40	24	60

As Table 2 shows, the overall response rate to our e-mail inquiry of sixty percent was moderate, but can be regarded as representative, as we reached the major universities of the Swiss university landscape. We received responses from all larger language areas of Switzerland, namely German, French, and Italian, with a stronger response from the German speaking Swiss HEI.

Findings

The results of the ad hoc survey in April-May 2021 revealed an insufficient uptake of OER policy development, but also revealed a reassuring outlook. OER activities of the Swiss HEI are invisible, even though in a 2019 online survey, 27% of participants from universities, universities of teacher education and 33% of participants from universities of applied sciences rated the topic OER as "strategically relevant" (Gutknecht, Reimer & Lüthi, 2020, p. 14). Furthermore, in the survey, 40% (universities) to 56% (universities of applied sciences) stated that OER activities have already been introduced at their universities. Participants mentioned terms such as strategy, agenda setting and policy, central point of contact or coordination (Gutknecht, Reimer & Lüthi, 2020, p. 14).

The majority of HEIs of all types, which have responded to the ad hoc survey, have neither developed an OER policy nor is the topic of OER directly mentioned in the strategic documents - which is in line with the previous survey. However, the survey also found that there are many universities, universities of applied science and universities of teacher education that have embedded the open idea into their institution, e.g. by an open access policy, such as the University of Zurich, University of Bern, University of Zurich, ETH Zurich, EPF Lausanne, University of Neuchâtel, Lucerne University of Applied Sciences and Arts, University of Applied Sciences and Arts Northwestern Switzerland (see examples of Open Access Policies of Swiss HEI in Neumann et al.*, 2022).

The following higher education institutions have explicitly mentioned an OER policy or the topic of OER in their strategic documents:

- **University of Basel** has OER integrated in their strategic document "Digitalisation of Teaching". Open Education and OER are mentioned and placed in the teaching context. Activities are described such as: introducing an OER Policy to provide more security for the lecturers in the areas of copyright, data protection or creation of a Code of conduct for interactivities in public or scientific forums and networks (Universität Basel*, 2018, p. 4).

- **Zurich University of Applied Sciences (ZHAW)** encourages the creation and distribution of teaching and learning materials as Open Educational Resources. ZHAW staff involved in teaching benefit from a "culture of sharing" (ZHAW*, 2018, p. 4). ZHAW has had an OER policy since January 2020. It describes its position on OER as follows (excerpt): "The ZHAW recommends the use of Open Educational Resources (OER) and to adapt them for the own target group to exploit didactic and content-related synergies and new perspectives. OER enables a constructive approach to the restrictions of copyright law, especially when using digital media. Likewise, ZHAW promotes the production of OER to actively participate in the "culture of sharing" (ZHAW*, 2020, own translation). Also, there is a strong commitment to respect the copyrights of third parties followed by recommendations on how to use Creative Commons Licenses. ZHAW supports its staff and students in the use, creation, publishing, and licensing of OER (ZHAW*, 2020).
- **Bern University of Teacher Education (PHBern)**: OER is referred to in the performance agreement for the area of further training. Bern University Teacher Education is committed to select, develop, and evaluate OER and distribute them via their homepage to the beneficiaries. In addition, advice and guidance is offered in digital media. This offer is not specified in more detail. Further strategic issues are not mentioned (PHBern*, 2017, p. 5).

There is a variety of activities on OER at each type of university, grassroots initiatives such as bottom-up activities (e.g., ETHx MOOCs or OER support websites of HSLU and ZHAW - see examples of OER activities of Swiss HEI in the Annex) as well as national HEI initiatives (e.g., SwissMOOCServices, the OpenLearningDays, or a national P8-OER project see examples in the Annex), which are supported by several funding schemes of swissuniversities. This finding is supported by the survey of Gutknecht, Reimers, & Lüthi (2020). Our inquiry shows, however, that OER is not yet anchored in the strategic documents of universities in Switzerland. Only very few universities have an OER policy or address the topic of OER in a strategy paper.

OER Policies in Austrian Higher Education

Austrian HEI Landscape and OER

In Austria, most students are at universities that are publicly funded and can be attended for comparatively low tuition fees - especially when compared internationally - if one has the formal admission requirements. In addition to 22 public universities, Austria has 16 private universities. There are also 21 universities of applied sciences and 14 University Colleges of Teacher Education in Austria, which are responsible for the training of a significant number of teachers (Federal Ministry of Education, Science and Research, 2021).

There has been a steadily growing OER movement for about 15 years with numerous projects and initiatives in Austria. OER are already part of government strategies, commissioning of feasibility studies (Schön et al., 2017) and support for OER projects (Orr, Rimini & van Damme 2015; Schön & Ebner, 2020). In 2016, the term "OER" was mentioned for the first time in a strategy paper of the Austrian government, the "Digital Roadmap" (Bundeskanzleramt und Bundesministerium für Wissenschaft, Forschung und Wirtschaft, 2016). The Austrian government as well has recognised the importance of the topic for higher education institutions and in 2016, together with the Forum Neue Medien in der Lehre Austria and other stakeholders, issued a recommendation for the integration of OER at Austrian HEIs (Ebner et al., 2016a, English paper Ebner et al., 2016b). In 2017, a concept for the certification of HEIs was published (Ebner et al., 2017). In Austria, OER are mentioned as well in at least two national strategies for higher education. In the "National Strategy for the Social Dimension in Higher Education" (Bundesministerium für Wissenschaft, Forschung und Wirtschaft) OER is mentioned as a means for broad access and integration in studies (Bundesministerium für Wissenschaft, Forschung und Wirtschaft, 2017, p. 26). Additionally, there are two strategic publications within the national education report concerning the area of digital education. Both reports emphasise the importance of OER for both

secondary and tertiary education (Baumgartner et al., 2016; Brandhofer et al., 2019). OER can also be found in the "Overall Austrian University Development Plan", the technical-strategic planning instrument on which the further development and strategic orientation of the 22 public universities in Austria is based and which forms the basis of the performance agreements with the individual universities. In the system goal "Improving the quality and efficiency of university teaching", OER is explicitly mentioned as an action until 2024: "Use of Open Educational Resources (OER) to increase self-learning ability as well as ubiquitous unrestricted access to knowledge" (Bundesministerium für Bildung, Wissenschaft und Forschung, 2020, p. 40, own translation).

The Austrian Federal Ministry has co-financed two important projects in relation to Austrian public universities in the last five years, namely the project "Open Education Austria" (2016-2018) and the current follow-up project "Open Education Austria Advanced" (2021-2024). In the project, the infrastructures for open educational resources of Austrian higher education institutions and universities are established and further developed. Project partners in the first implementation were the University of Vienna, the University of Graz, the University of Innsbruck, and the Graz University of Technology; in the current implementation, fnma and öibf (Vienna) are also involved as smaller partners. The project includes the implementation of OERhub.at, where all metadata of Austrian OER from universities or Austrian OER repositories of universities can be found in the future. OER repositories at the partners' universities and corresponding interfaces are also being developed and implemented (Ladurner et al., 2020), as well as OER MOOCs and training courses offered. OER certification, which was already outlined in a white paper in 2017 (Ebner et al., 2017), is now also being designed, participatively developed and tested until 2024. One criterion for the OER certificate for Austrian HEI is that they publicly/strategically commit to open educational resources. Therefore, the development of documents for OER recommendations and policies is supported within the project (Schön et al., 2021).

Data Collection and Analysis

If governments wish to shape their relations with public HEI, they can either enact laws and regulations or conclude agreements. Individual agreements are possible as well, typically so-called regular "performance agreements" (Kogler, 2017, p. 27) are used for this. Performance Agreements are seen as the central design and steering instrument for public HEI in Germany, Austria, and Switzerland (Kogler, 2017). Performance agreements at public HEIs are formally signed contracts between the HEI and a state institution, and in Austria this is done between the university and the ministry of education, science and research. In contrast to Switzerland, where the performance agreements are very short, the Austrian performance agreements include a long list of plans, measures, and activities. Although they are not the only possible sources for OER activities or plans in public HEI, they are relevant and as well a resource that is easy to find due to the public nature of those public strategies in Austria. We therefore research and analyse OER policies and strategies for OER (see Open Education Policy Hub, 2021):

- National OER policies or strategies for higher education mentioning OER.
- OER Policies of public universities
- Performance agreements of public universities in relation to OER

In the analysis of the universities' performance agreements, we distinguish between three forms of mention of OER, as also applied in the analysis of the German case: no mention, OER is mentioned and Concrete OER activities are described. Additionally, we will give an insight into the situation of the role of OER in private universities, universities of applied sciences and University Colleges of Teacher Education in Austria.

Findings

All performance agreements (2019-2021) between the Austrian public universities and the ministry were analysed concerning the mention of OER. A detailed analysis is already published in a German conference proceeding (Edelsbrunner, Ebner & Schön, 2021). Our analysis results in:

- 9 (41%) public universities³ described concrete OER activities within their performance agreements
- 3 (14%) more only referred to OER or related concepts such as open education in a vague manner, meaning more than half of the public universities have concrete or vague references towards OER.
- So, 12 of 22 (55%) institutions at least mentioned OER.
- 10 (45%) universities did not mention OER within their performance agreements.

All four partners of the current "Open Education Austria Advanced" project are among the universities which present more intense activities and goals concerning OER. However, there are also universities outside the consortium with explicit OER activities.

- For example, the **University of Natural Resources and Life Sciences, Vienna** announced an OER policy (Universität für Bodenkultur & BMBWF*, 2019, p. 56).
- The **Medical University of Vienna** commits to an "analysis of the Open Education Resources options for MedUni Vienna and further improvement of the offers in the teaching and learning area" as well as an examination of the participation in OER projects. (Medizinische Universität Wien & BMBWF*, 2019, p. 32)
- The **TU Vienna's** performance agreement explicitly refers to OER and states it as an implementation goal (Technische Universität Wien & BMBWF*, 2018, p. 29).

Aside from the analysis of performance agreements, two of the universities already have explicit OER policies, as announced in their performance agreements: the **University of Graz** since March 2020 (Universität Graz, 2020); the **TU Graz** published its OER policy in November 2020 (Technische Universität Graz, 2020). At least two additional universities are currently discussing their own OER policies, so that we expect that the availability of such documents clearly dedicated to OER will grow as well.

Conclusion and Further Perspectives

The concept of "OER policy" is fuzzy and must be sharpened in the future. The understanding of this contribution, which distinguishes between "policy documents" and "policy initiative" represents a good starting position for a deeper understanding of the different phenomena related to policy making. This paper has also argued that we should often look beyond pure OER policies and initiatives, as OER is often part of policies on digitalisation or on open principles. The analyses of the situation at the public universities in Germany, Switzerland and Austria based on these two premises have shown that it can be helpful and useful to search specifically for documents that (could) address the topic of OER or OER policy within a certain governmental level.

³ These are: University of Vienna, University of Graz, Medical University of Graz, Medical University of Vienna, TU Vienna, Medical University of Graz, Graz University of Technology (TU Graz), University of Innsbruck, University of Natural Resources and Life Sciences, Vienna

Concerning research question 1 (RQ 1), on the availability of documents that can be used to monitor the OER relevance in HEI, suitable types of documents were found. They were all publicly available in the case of Austria, partly publicly available in Germany, but we needed our own investigations and a survey amongst the universities in Switzerland to identify and reach their relevant documents. Concerning the potential insights (RQ 2), it seems possible to describe the status of OER in HEI in relatively good quality. However, how these results can be used for further, also national comparisons or benchmark systems, requires further discussion.

Limitations

Certain limitations to this study arise from the methodological approach used and the restrictions it entails, as well as the sample under consideration. These are also challenges for the possibilities of monitoring OER developments. With the three countries having a strong publicly funded higher education system, we opted to focus on these institutions and leave out private ones. In further iterations, this would need to be mended to gain a more comprehensive picture. However, the study in this form presents a first attempt to make OER visible in HEIs and can provide the grounds for further analysis.

Whilst we chose countries for our analysis that are relatively comparable in regard to their HE systems being predominantly publicly funded and being heterogeneous in their blend of universities and universities of applied science, the analysed documents vary considerably. In the case of the German HEIs, the digitalisation strategies are institutional documents that proclaim a vision and intention but that are not binding in a way that the performance agreements are for the Austrian case. In Switzerland, the documents were retrieved through a survey constituting another focus. Thus, we can provide a glimpse into how the three different countries approach OER in policy documents from different angles, but we cannot directly compare them due to the different nature of the documents, e.g., how great their effect and binding nature is. In further research, a closer alignment of document type across countries is aimed for.

In the cases of Germany and Switzerland, we note how time-consuming the search is, so that the display of results will also be incomplete because of missing documents. For the case of Germany, it needs to be stated that we searched for the digitalisation strategies as diligently and attentively as possible. Still, we need to acknowledge that we might have missed strategic papers.

In the case of a special topic such as OER, it could also be that there are independent contributions from the universities; in Austria there are already two OER policies from universities. Having resorted - for reasons of consistency - to only focus on explicitly labelled strategies, we have not considered mission statements, general development plans etc. that might focus on OER. Practically, we know that the OER practice and practices of the universities are not always written down in strategies or described as OER activities. It could as well be, that they are described but not labelled as OER: for example, in Austria MOOCs on the platform iMooX.at are mostly open, but always CC-licensed, but the term OER itself is seldom used. Additionally, policy or strategy documents still must be translated into activities, so they can only be viewed as a proxy for actual activities. Looking at the number of policy documents therefore cannot provide more than a very rough indication of the actual situation. The mere existence of a policy document does not mean that its contents are implemented and "lived" in the respective institution concerned.

To sum up, policy documents make a good starting point for identifying policy initiatives. Nevertheless, their importance for the evaluation of policy initiatives should not be overestimated. Anecdotal evidence gathered in the course of this work suggests that quite often policy initiatives are being launched without releasing a formal strategy or policy first. Also, the policy concept seems to be spread differently in different countries, which must be considered in the assessment. In-depth continuation of our research,

for example by collecting data on existing related implementation activities, some projects, and services in addition to the policy documents would be worthy.

Outlook: OER World Map as Potential System to Monitor OER Policy Document Development?

Finally, we would like to give an outlook on the OER World Map as a potential system to monitor OER policy document development. All the documents mentioned in this article were registered with the OER World Map as part of research.

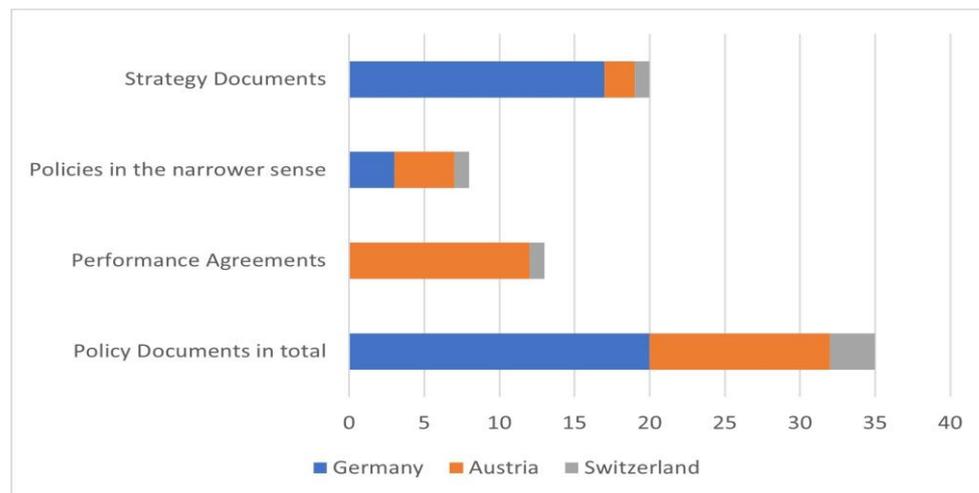


Figure 3. Number of OER-Policies documents and subtypes within Higher Education Institutions in Germany, Austria, and Switzerland according to the OER World Map

It seems difficult to quantitatively compare the policies found in each of the three countries, as the approaches to the data collection were different and, moreover, different emphases were set. Nevertheless figure 3, which shows the total numbers of HEI policy documents within the region, indicates that Austria has a significantly higher penetration of policies at institutional level compared to Germany and Switzerland. Now, we can only speculate about the reasons for this. One possible explanation could be that (according to the OER World Map) the number of national policy documents is also higher than in Germany and Switzerland, which could have supported the trend towards adopting institutional policies. Another explanation could be that the topic of OER was taken up earlier in Austria's higher education system than in Germany and Switzerland and therefore could develop further than with its neighbours.

As a side effect of our research, it turned out that the OER World Map is a helpful tool for collecting data. The categories provided by the map turned out to allow capturing the collected data in an adequate way. Several already existing categories have not been used in this research and provide a chance for deeper insights. Another strength of the platform is that it facilitates the connection of policy documents to other activities, which could be used to evaluate the efficiency of a policy in the future. Nevertheless, the research shows that data collection must be done systematically, as otherwise the data on the map will be far from complete. This research helped to improve data availability on the OER World Map significantly (+400% in Germany, +300% in Switzerland).

We have shown that there is still a way to go, as not only the existing basic scientific concepts need to be sharpened and differentiated. Also, sustainable monitoring of the growing adoption of OER requires a stable human, technical and methodological infrastructure, which needs to be conceptualised and implemented.

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The analysis of both the worldwide overview of national and institutional OER policies and the German Higher Education Institution OER Policies was partly organized in the context of the project Digital educational architectures – Open learning (educational) resources in disseminated learning infrastructures (EduArc), which was funded by the German Federal Ministry of Education and Research, Grant Number 16DHB2129.

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