

FROM PROMOTION TO PERSUASION: SUPPORT AS ESSENTIAL NEXT STEP FOR ESTABLISHING OPEN EDUCATIONAL RESOURCES AT UNIVERSITIES

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Abstract

This paper argues that support services are an essential contribution to the further establishment of Open Educational Resources (OERs) at universities. After illustrating why promotion alone is not enough to convince university teachers to use OERs, the current challenges and barriers to the use, creation, and delivery of OERs are described. Based on this, numerous support services that universities can provide to users and creators of OERs at different institutional levels are presented. Subsequently, two examples from Austria are used to show how support measures can be implemented in concrete ways and what positive impact they have on establishing OERs.

Keywords: OER, Open Educational Resources, open education, third mission, accessibility, policy, lifelong learning.

1 INTRODUCTION

Open Educational Resources (OERs) have a rather long history by now. After all, the first definition of OERs by the UNESCO dates back to 2002 [1]. In the past two decades, this definition has not only been refined [2] but numerous measures have also been taken to popularize OERs among academia. In particular, the advantages of OERs such as legally safe use, availability to the general public, or higher visibility of one's teaching performance have been emphasized. By this, it was possible to interest numerous teachers in the use and production of OERs.

Now that the interest of teachers has been aroused, strategic measures are needed to anchor OERs at universities. Starting with a description of the status quo, this paper addresses prerequisites and conditions that foster the use and creation of OER at universities on different levels. On the one hand, general tendencies that can be derived from current scientific contributions and international examples are shown. On the other hand, experiences from the University of Graz and the Austrian project "Open Education Austria" are referenced.

In doing so, the paper focuses on how support measures can be anchored strategically and which effect these support offers have on the use and production of OERs. More in-depth questions about the pedagogical use of OERs (especially from the students' perspective) and the technical implementation of OER repositories are not addressed as they go beyond the scope of this paper. Related research questions are undoubtedly important but require separate analyses. It should also be emphasized that the paper focuses mainly on the options for action from the perspective of universities as institutions. The role of teachers and service staff is, of course, always considered in this context, but they are not the primary actor in the measures suggested.

2 SUPPORT-DRIVEN IMPLEMENTATION OF OERS AT UNIVERSITIES

As mentioned in the introduction, OERs have many benefits – in higher education as well as for society in general. Building on the 5Rs (retain, reuse, revise, remix, and redistribute) by Wiley [3], free educational materials support teachers, students and the general public in acquiring and disseminating knowledge. The numerous benefits of OERs have been highlighted by the relevant communities for years and have already convinced many individual educators. However, OERs are still not particularly widespread at universities. Therefore, it is important not only to communicate the benefits of OERs, but also to implement OERs strategically at universities.

Universities thus have the task of developing guidelines and policies with the aim of fostering the use and creation of OERs. The "Guidelines on the Development of Open Educational Resources Policies" by Miao et al. [4] offer a good foundation for this. The comprehensive and hands-on guidelines are aimed at policymakers and provide knowledge and skills to review, analyze, develop, implement, and

measure a suitable OER policy. The authors also present numerous support measures for the design of an OER master plan and make reference to the Sustainable Development Goal 4 (Quality Education). Indeed, OERs can make a valuable contribution to "ensure inclusive and quality education for all and promote lifelong learning" [5].

A few years earlier, in 2016, Ebner et al. [6] recommended six measures for fostering OERs at Austrian universities: mandatory commitment to OERs, establishment of a nationwide information platform for exchange and cooperation, establishment of nationwide educational programs for different stakeholders, establishment of national OER badges, targeted financial and structural promotion of OERs, and establishment of OER strategies within each institution and as a comprehensive approach. Although these recommendations were not yet sufficiently differentiated, they form a crucial basis for the strategic implementation of OERs at Austrian universities. Which of these recommendations have been implemented in Austria in the meantime, and how support services have contributed to this, is described in chapter 3 of this paper.

In order to successfully proceed with the strategic implementation of OERs, it is first important to analyze the current status of using and creating OERs. The systematic mapping of scientific literature on empirical research on OERs by Otto et al. [7] shows that almost one third of the 272 publications analyzed discuss the use of OERs. In contrast, the amount of analysis devoted to the challenges and barriers associated with OERs is less than five percent (incidentally, the same is true for the topics of incentives and motivation for engaging with OERs). Because OER implementation is a typical change process in which – as with all change processes – resistance is to be expected [8], it is necessary to investigate the current challenges and barriers associated with OERs further than this. Therefore, the following chapter is dedicated to this topic. According to Towey et al. [9], (support-based) approaches to the strategic implementation of OERs can only be presented afterwards.

2.1 Challenges and barriers

In order to determine the current challenges and barriers in dealing with OERs, a number of recent publications on this topic were analyzed, although the analysis does not claim to be exhaustive. The challenges and barriers described there were clustered and enriched with own experiences and observations. This resulted in the following themes: legal issues, insufficient awareness, high effort, lack of competencies, lack of motivation, and technical infrastructure.

2.1.1 Legal issues

In continental Europe, free educational materials are licensed with the help of Creative Commons licenses [10]. Their application is simple in principle but can become complicated in individual cases, for example when it comes to labeling changes to an OER or when copyright-protected components such as a logo are to be integrated into an OER. In addition, there is uncertainty at many universities about who is liable in the event of incomplete or even incorrect licensing, which inhibits teachers from using and creating OERs.

This uncertainty is also reflected in the literature review. McGreal [11] locates a lack of understanding of the legal issues around copyright among educators. Additionally, Henderson and Ostaszewski [12] argue that although educators desire to share their content as OERs, they are ultimately reluctant to do so due to uncertainty in dealing with intellectual property laws or fear of misunderstanding. Lastly, Chee and Weaver [13] lament the lack of support for faculty to consider copyright issues. The authors' experience emphasizes this. In OER staff training programs at the University of Graz, participants continually ask very specific and detailed questions about the legal situation. However, trainers coming from educational contexts lack the legal expertise to answer such questions in detail. At the same time, the university's legal experts lack the resources to be available for staff training programs.

Legal issues in the broader sense also include differing views on how an OER is defined. According to the UNESCO definition, OERs are "learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others" [2]. This means that Creative Commons licenses like CC BY NC (non-commercial) or CC BY ND (no derivatives) cannot be used for "real" OERs. However, some educators fear that their OERs will be modified without their knowledge in an improper way and therefore believe that OERs should be shareable but not modifiable [12]. In addition, there are general plagiarism concerns that also hinder the creation and dissemination of OERs. The authors can confirm these concerns based on their OER consulting activities.

2.1.2 *Insufficient awareness*

Although OERs have been a topic in academia for 20 years, they have not yet achieved widespread impact at universities. Rather, OERs have so far mainly remained the domain of distinctive OER communities. McGreal [11] and Hassal and Lewis [14] describe creating awareness of OER as a key challenge for universities. A study by Henderson and Ostashewski [12] shows that many faculty members do not believe their institution has a publishing/sharing policy, which is why they are reluctant to use OERs. In fact, OERs often play only a minor role in overall university strategies, which is why there are few communication strategies in place to adequately inform faculty about OERs.

At the University of Graz, efforts are being made to familiarize as many teachers as possible with OERs. They are informed about the use of OERs as well as about OER consulting services and OER training programs with the help of specific mailings and in person conversations. However, the low number of OER inquiries suggests that interest in OERs is not particularly high. The question remains whether teachers simply do not receive the OER information or whether other reasons (e.g. lack of time, see below) are responsible for the low interest in OERs.

2.1.3 *High effort*

Teachers at universities have an extensive and complex task profile. Firstly, the tasks naturally concern the preparation and conduct of teaching. With increasing digitization – and not least due to COVID-19 – the expectations of students have also risen. Teaching materials are expected to be multimedia-based, which makes it necessary for teachers to acquire additional skills and requires additional time. Furthermore, faculty members perform research activities, which are also time-consuming. Finally, they are often also in charge of extensive administrative tasks.

On top of all these tasks, the use and especially the creation of OERs requires additional time resources. In several studies (e.g. Chee and Weaver [13], Kılıçkaya and Kic-Drgas [15], Ren [16]) teachers state that dealing with OERs requires a considerable amount of time. This has multiple reasons: It often takes teachers a lot of time to search for and find the OERs that are suitable for them, since OERs are hardly ever collected in centralized repositories. Even more time-consuming is the processing of OERs [11], especially when all legal issues are taken into account. Of course, this also applies to the creation of own OERs, which is why teachers are often reluctant to rework their existing teaching materials into OERs. The authors' experience confirms this: The greater the teachers' knowledge about OERs, the more they become aware of how time-consuming acquiring competencies and creating OER can be and the more often they weigh the advantages of OERs against the disadvantages associated with their creation.

Lastly, the quality assurance of available OERs is also described as time-consuming [11]. On the one hand, OERs must be checked for their formal quality (for example, correct licensing). On the other hand, an assessment of the quality of the content is required. In this context, however, it should be noted that teachers (want to) devote more time to checking the quality of content for OERs than for other teaching materials used. This may lead to the conclusion that OERs are less trustworthy to teachers in terms of their quality than other teaching materials.

2.1.4 *Lack of competencies*

For the use and creation of OERs, teachers need a number of (additional) competencies. OER use requires knowledge in the search for suitable OERs, which teachers often have difficulties with, according to Chee and Weaver [13], Riquez et al. [17], and Otto [18]. Adapting or creating OERs requires both pedagogical and technical expertise. In Hassal and Lewis' study [14], educators report that they don't know how to incorporate OERs into their teaching. Missomelius [19] points out that many OER concepts still attribute too little importance to the pedagogical integration of OER, rethinking pedagogical approaches, and questions about the organization and philosophy of education.

The technical know-how for the creation of digital (multimedia) content has grown considerably among teachers since COVID-19, but a lack of time is again often cited as an obstacle to actually producing OER. Additionally, publishing OERs is a challenge. Teachers are often unsure which platforms or media are recommended for publishing their OERs. The authors of this paper are also frequently faced with questions on publication during their OER consultations at the University of Graz, particularly with insecurities due to the lack of an in-house repository that is perceived as more secure by teachers.

Further competence deficits concern the legal handling of OERs, as already described above. Above all, these uncertainties concern the licensing of self-produced OERs, especially when existing OERs are

integrated into one's own teaching materials. Also, the possibilities and restrictions associated with different licenses are often not clear to teachers, which is also observable at the University of Graz.

2.1.5 Lack of motivation

The general benefits of OER have been described many times and are also recognized by most teachers. However, the use and creation of OERs requires additional time resources and competencies. In addition to pedagogical and societal benefits, teachers therefore expect individual recognition from their own university when dealing with OERs. For this, there is often a lack of incentive systems and formal recognition by the institution [12], [13], [17].

The literature research also shows other factors that inhibit motivation. Chee and Weaver [13] mention teachers' concerns that creating OERs will negatively impact perceptions among colleagues. Servey et al. [20] report reservations among teachers about using teaching materials developed by someone other than themselves.

Another reason for the lack of motivation is probably that for a long time only the benefits of OERs were communicated and promoted. Barriers and challenges were recognized, but often not addressed. The importance of highlighting both benefits and challenges (including offering solutions) is illustrated by the reactions of participants of the OER trainings at the University of Graz. Initial contact with OERs often generates enthusiasm, which then wanes with increasingly in-depth engagement (and the associated recognition of challenges). In this competence acquisition phase, the recognizable benefits of OERs are contrasted with the associated workload and this comparison is usually to the disadvantage of OERs.

2.1.6 Technical infrastructure

As mentioned above, finding and publishing OERs is a challenge for many educators. This is due to most universities not making recommendations on how to search for OERs or where self-created OERs should be published. The latter is also related to the fact that many universities do not yet have their own OER repository. At the moment, this also applies to the University of Graz.

McGreal [11] and Chee and Weaver [13] also note that teachers often lack the necessary technical expertise to store and publish OERs. They are not familiar with how repositories work, and they don't really want to deal with them. The expectation is that publishing and making teaching materials available should be as easily as possible.

In this context, Ladurner et al. [21] refer to the importance of competencies regarding metadata. Metadata must always be entered by OER creators and are then stored and delivered in a standardized form in OER repositories. The metadata quality is crucial for finding OERs in search engines, but at the same time entering metadata requires appropriate care and takes additional time.

2.2 Support offerings as an essential solution factor

The sections above illustrate that there are many challenges and barriers for teachers using and creating OERs. In order to increase the value of OERs at universities and for as many teachers as possible to engage with OERs, it is necessary to address these challenges and break down barriers. Simply hoping that OERs will spread on their own with the help of early adopters and become established at universities is not enough. Rather, it is necessary to offer support measures to teachers. This is all the more important since teachers report in several studies [12], [14], [18] that they have received no or too little support from their institutions in dealing with OERs.

These support measures should be located on different levels. At the institutional level, binding policies and guidelines for dealing with OER are needed. At the departmental level, concrete support services can be established, such as personal consultations or training programs. The informal level offers teachers an individual exchange of experiences, which also increases motivation for the use and creation of OERs. Lastly, at the inter-institutional level, concentrated action can be taken to jointly address cross-institutional challenges. Below, recommendations for establishing OERs at universities are described for all four levels.

2.2.1 Institutional level

At the institutional level, the university can support the use of OERs primarily through the development and implementation of appropriate guidelines and policies. In addition to the management level, this process should include representatives of the teaching staff and students as well as the support departments concerned with OERs, and existing OER documents at international and national level. As

Neumann et al. [22] show in their analysis of the dissemination of OER policies in Germany, Austria, and Switzerland, only a few universities in German-speaking countries currently have an explicit OER policy. However, the term "OER" can be found more frequently in wider strategy documents such as digitization strategies, which concrete OER activities are part of. Of course, such an approach is a good start, but the goal of universities should be to develop their own OER policy, either as a stand-alone document or as a separate chapter in strategy documents. However, the development of an OER policy is a complex and time-consuming process in which many stakeholders must be involved.

The policy development should be preceded by a detailed analysis process of the respective status quo. Once again, we refer to the "Guidelines on the Development of Open Educational Resources Policies" [4], where the following eight central "building blocks" for an OER policy are mentioned: 1) adopting an open licensing framework; 2) integrating OERs into the curriculum; 3) ensuring the development, storage, and accessibility of OERs; 4) aligning quality assurance procedures; 5) supporting capacity building and raising awareness; 6) encouraging sustainable business models and launching funding strategies; 7) promoting evidence-based research on the impact of OERs and 8) having a governance mechanism for the OER policy.

Developing, publishing, and promoting an OER policy are essential factors in encouraging the use, creation, and publication of OERs at a university. First, it makes a clear commitment to OERs. In addition, teachers also receive important information about the conditions of how OERs can be used and created, which support services and infrastructure are available, and which incentives are provided in dealing with OERd. An OER policy thus creates the necessary framework for establishing OERs at a university. In this context, Otto [18] emphasizes that teachers are much more likely to commit to working with OERs with the help of support measures and incentives than if they are obligated to do so.

Setting up the necessary IT and support infrastructure also takes time. A step-by-step approach is recommended here, starting with a clear OER commitment, which is also reflected in general strategic documents of the university. The next important steps are the provision of appropriate support services [9] and the availability of an OER repository [18]. The "building blocks" mentioned by Miao et al. [4] can be established step by step as well. During the process of establishing an OER policy, it is not only important to coordinate the individual steps, but also to regularly inform all stakeholders about the activities already implemented and the next planned activities.

2.2.2 Department level

Based on the university-wide OER policy, individual departments of a university have the task of developing and offering concrete support services on different levels, in which interdepartmental coordination is often necessary. Many studies describe support measures as efficient solution factors, including explaining how OERs are used or presented to learners [15], building partnerships with instructional designers/technologists or librarians [16], or permanent OER training programs and legal advice [23].

Pedagogical support services range from consulting services on the methodological use of OERs to concrete assistance in OER creation. Consulting services can take the form of individual consultations, workshops, webinars, or detailed OER training courses. Concrete assistance in OER production includes the provision of appropriate workflows as well as support services in the actual OER production, for example in the creation of multimedia learning objects.

Ebner et al. [24] show that the teaching and learning centers of universities play a central role in the design and provision of pedagogical support services. In these centers, appropriate OER competencies must first be built among department staff. Then, the purpose and goal of consulting services should be defined and cooperation with other departments should be established, if necessary. Support measures that have been implemented must ultimately be evaluated involving all stakeholders and adapted if necessary. This approach is of course also recommended for other departments providing OER support.

Technical support services are also essential as teachers often need support in finding and publishing OERs. One crucial measure is therefore providing an OER repository including corresponding instructions for its use, primarily by the IT department. The handling of metadata can also be seen as part of the technical support. For this, particularly university libraries have extensive competencies that can be made available to teachers.

As Chee and Weaver [13] point out, educators often have concerns about the quality of OERs. Here, a distinction can be made between formal and content quality. The formal quality concerns, for example, the choice of the right (Creative Commons) license or the correct specification of metadata. This can be

checked for all OERs equally. Appropriate support services for achieving and checking formal quality – for example, by the department responsible for operating the repository – can therefore be provided relatively easily.

However, to check the quality of the content, experts from the respective disciplines are needed. Therefore, the quality of the content can hardly be checked in a centralized way. As a side note, it should be mentioned that a content quality check should not only be performed on OERs, but on all learning objects in general. The best person to do this is the teacher who wants to use a learning object in the context of their individual teaching. However, because this quality check is time-consuming, teachers would like to have already quality-checked OERs available. This can be achieved by implementing an editorial system in the OER repository, where peers evaluate the content of OERs. However, this quality check depends on the resources available for it and on the willingness of teachers to be available as peers.

OERs are also often advertised as ensuring legally compliant use. Unfortunately, as described above, it is evident in practice that there are often legal uncertainties for teachers when using and creating OERs. The provision of relevant information and a legally competent contact person – for example, from the university's legal department – represent a valuable support offer in this context.

Universities can thus provide numerous support services for the use and creation of OERs, particularly at the department level. Which departments offer which services depends on the respective structure of the universities or on the distribution of tasks within departments. This can make it confusing for those seeking support to know where to get what. Chee and Weaver [13] as well as Otto [18] therefore recommend implementing a central OER contact point, which serves as the initial contact for all support needs and performs a coordination function for all departments involved in OERs. This ensures that teachers do not have to contact different departments or people to get the support they need.

Towey et al. [9] recommend that departmental support services should also be explicitly listed in the university-wide OER policy. Due to the often-changing number and focus of these support offers, it is necessary to adapt the OER policy on an ongoing basis. As a result, the OER policy is a living document that must be adapted again and again. It is also important that adaptations of the policy are communicated promptly within the university.

2.2.3 Informal level

In addition to offering concrete support at the institutional and departmental levels, it is also important to provide opportunities for OER users and OER creators to exchange experiences with each other. This ensures that teachers support each other on an informal level and share their experiences with overcoming challenges. To do this, it is first necessary that teachers who are interested in OERs get to know each other. Joint OER events such as training programs or internal university OER symposia are ideal for this purpose. OER support departments can also act as a builder of networks between teachers that are interested in OERs.

For the asynchronous exchange of knowledge and experience, a central OER website and a dedicated course in the university's learning management system are suitable. Not only can information be provided and questions answered there, but teachers can also find like-minded people there, answer questions directly, and independently develop solutions to overcome barriers. By providing synchronous and asynchronous platforms for those interested in OER, universities also create the basis for generating a snowball effect. The opportunity of informal exchange continuously involves new teachers, who in turn share their experience in dealing with OERs with other colleagues.

2.2.4 Inter-institutional level

Although universities are always in competition with each other, it makes sense to cooperate on a national and international level to establish OERs. On the one hand, this cooperation can take place at the institutional level. For this, joint strategies and goals can be developed and implemented, or there can be cooperation in the development of the necessary OER infrastructure or in training programs. By this, universities can benefit from each others' experience, establish coherent standards, and save resources at the same time.

On the other hand, universities should promote inter-institutional cooperation between departments that have similar support tasks. This also supports the mutual exchange of experience and departments can benefit from competencies already acquired elsewhere. In addition, this promotes OER research. Researchers and support staff can address current OER research questions across university boundaries and in interdisciplinary teams and share their findings with a broad (OER) community.

3 CASE EXAMPLES FROM AUSTRIA

As shown above, universities have numerous possibilities to foster the use and creation of OERs with the help of support offers. Following this, two examples from Austria will be used to show how support offers can be (cooperatively) designed and implemented. The first example is a national OER project involving several universities. The second example shows the development and implementation of OER support services at the University of Graz. It should be noted that neither of the two examples already includes all of the support services described above. Rather, both examples are seen as "work in progress", but they give a good impression of the fact that support services are an essential building block for establishing OERs at universities.

3.1 Open Education Austria

The "Open Education Austria" project is led by the University of Vienna and involves the University of Graz, the University of Innsbruck and the Graz University of Technology [25]. Additional partners in the project, which is funded by the Austrian Ministry of Science for the period from March 2020 to February 2024, are the association "Forum Neue Medien in der Lehre Austria" and the "Österreichisches Institut für Berufsbildungsforschung". In the project, support offers are developed in the form of five content-related work packages, which will be made available to all Austrian Higher Education Institutions by the end of the project at the latest.

One work package is dedicated to the development of an OER metasearch engine. The so-called "OERhub" [26] enables the search for OER via faceted search. Prerequisites for the connection of a source system to the OERhub are a persistent identifier for the respective OER, the delivery of metadata in the Learning Object Metadata schema (LOM), the open licensing of the OER, and a landing page for the submitted OER. In the project, a decentralized approach is taken, and the universities themselves continue to bear responsibility for their local infrastructures. In the current trial run, the OER repositories of the University of Vienna and the Graz University of Technology are initially connected to the OERhub. The universities of Innsbruck and Graz will follow in 2023, and intensive work is underway to connect other universities as well. With the OERhub, teachers gain the opportunity to search for OERs quickly and easily.

For the connection to the OERhub, a university's own OER repository is required. The universities involved in the project are developing repositories in a decentralized way according to their local infrastructures, but common standards such as a uniform metadata schema are being developed and implemented by all. A guideline for the design and anchoring of an OER repository has already been produced. This guideline is intended to facilitate the implementation of an OER repository for other interested universities. With OER repositories in place, teachers will find it much easier to make OERs available.

Another work package of the project deals with the development of a national OER certification body. As described by Ebner [27], with the help of the certification body, both university staff and the universities themselves can be OER-certified. The certification is linked to certain requirements: University members must have completed a corresponding OER training program and have published at least three OERs. Universities must have an OER training program and an OER policy, as well as a certain number of certified university employees and an OER repository in use. The certification body is currently being set up, and by the end of the project at the latest, this certification will be a major incentive for universities to push ahead with the use of OER.

The project also designs and offers OER training for staff at all Austrian universities, in which participants acquire the skills to use and create OERs. They have to complete a specifically developed Massive Open Online Course (MOOC) [28], complete several asynchronous assignments (incl. peer reviews), participate in three synchronous interactive online meetings and create and publish three OERs of their own. The total workload is 25 hours. Upon completion, participants will receive a certificate from the OER certification body. The OER training course, which will be available with a CC BY license at the end of the project, provides universities with a standardized tool to qualify their staff in dealing with OERs.

In addition, a prototypical OER production workflow is created. This can be used by all universities (in a form adapted to the respective conditions and structures) in order to design and support OER production as efficiently as possible. Moreover, a workflow for legal questions regarding OERs has been established. People interested in OERs can ask legal questions, which will be answered by a lawyer. The questions and answers are published on the project website, thus increasing legal certainty in dealing with OERs.

3.2 University of Graz

Not least due to its engagement in the project "Open Education Austria", the University of Graz has defined the topic "OER" as a special focus in teaching. In March 2020, the University of Graz became the first Austrian university to publish an OER policy [29], thus making a public commitment to OERs. In its policy, the University of Graz enables and recommends the use, production, and publication of OERs to its teaching staff. In addition, the university also commits to providing the necessary support services for this. It should be noted that the OER policy does not (yet) have the scope and detailed level recommended by Miao et al. [4]. However, it is an important institutional framework and provides a good basis for the next necessary steps to establish OERs. The strategic establishment of OERs is also reflected in other official documents of the university: In the current development plan (2022-2027), the University of Graz is committed to actively promoting the provision of OERs. In the current performance agreement (2022-2024), concrete implementation steps are defined, such as the establishment of an OER training programme or the provision of an OER repository.

The Center for Digital Teaching and Learning acts as a central point of contact for all OER issues. This is where regular OER training programs are held and where the OER repository (available from January 2023) is developed, in cooperation with the IT department. The center offers teachers extensive consulting services in the area of the pedagogically motivated use of OERs and actively supports teachers in OER production. As an incentive, for example, multimedia learning objects are produced free of charge if the teachers responsible for the content are willing to provide the learning objects with a CC BY or CC BY SA license. The center also operates its own OER website, where teachers can find extensive information (e.g., on licensing, OER search, support services, or how to use the OER repository).

Establishing a central point of contact enables teachers to get exactly the support they need quickly and easily. This is the case at the Center for Digital Teaching and Learning, where most support measures can be offered by the center's OER-trained staff. In doing so, the center benefits from the good cooperation with other departments such as the IT department or the university library, which make their extensive expertise available and also answer specific questions from individual OER users and OER producers when needed. Currently, the center works on establishing a cooperation with a lawyer at the university who is available to answer legal questions about OER.

Although this means that a good basis for establishing OERs already exists at the University of Graz, it is clear that both the support services need to be expanded and the level of awareness of OERs needs to be further increased. For this, additional staff resources will be made available at least until the end of 2023. This enables intensified research on OERs and work to acquire third-party funding, e.g. in the form of international projects.

4 CONCLUSIONS

The literature review as well as the authors' own experiences show that teachers still face challenges and barriers when using and creating OERs. In order to establish OERs at universities, it is necessary to remove these obstacles and at the same time create a positive attitude towards OERs among as many teachers as possible. In this context, it can be agreed with Otto [23] that "it is reasonable to argue that neither exclusively dismantling structural barriers nor solely promoting OER is a suitable strategy for increasing adoption".

In order to foster the use of OERs at universities, different strategies and measures are undoubtedly needed. One essential measure is the provision of support services at various levels. They ensure that teachers are unburdened when it comes to OER use and OER production. Competencies can be built through continuing education offers, uncertainties can be eliminated through consulting services, and production processes can be supported by expert staff. Among others, these measures can support the development of an OER usage routine.

However, the provision of these support services requires not only a clear OER commitment by the university and the design and implementation of an OER strategy, but also sufficient staff resources with a high level of OER competence and networked action between different departments and between universities. Only when teachers are no longer left alone in dealing with OERs, it will be possible to increase interest and motivation for OERs in a way that OERs can achieve a broad impact.

The Austrian examples mentioned above illustrate initial implementation steps for providing support services. However, identifying, building and maintaining OER support is an ongoing process that must

be continuously adapted to current strategic, pedagogical, and technical developments. Research on OERs must not be forgotten, which is also a crucial basis for OER support measures.

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