Zürcher Hochschule
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Finance & Services
University Library

REPORT ON THE OPEN EDUCATIONAL RESOURCES (OER) SURVEY AT SWISS UNIVERSITIES

Client's legal information	swissuniversities
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SUMMARY

In a non-representative online survey (n=114), members of the Swiss eduhub community (eduhub is the Swiss academic e-learning community) were asked about their experiences with and opinions of OER. Members of 30 different universities and all three types of higher education institutions in Switzerland took part in the survey. The benefit of OER was rated by the participants as moderate to fairly high. Almost three-quarters of the universities of teacher education and at least 30% of the universities and universities of applied sciences represented in the survey already produce OER. Out of the survey participants who work in teaching, it is the staff of the universities of teacher education that most frequently use and produce OER themselves. Meanwhile, the participants who have never or only rarely used or produced OER cite lack of time, incentives, skills or ease of access to the repository as well as legal uncertainty, high quality standards or content inadequacy as reasons for their reluctance to make use of OER.

The infrastructure, financial resources and additional resources for this subject area are only made available to lecturers and research assistants at Swiss universities on a small scale. Moreover, there is only a limited amount of advice, information and training relating to OER at universities. In the current situation, the survey participants rate the institutional knowledge and experience with OER and the importance of OER at universities as low and see a need for improving these skills in various areas. There seems to be only a moderately developed general culture of sharing at universities and, in addition, few universities appear to have established a quality assurance procedure.

Communication, incentive systems, infrastructure and content were identified as the main fields of action. Participants suggested that quality assurance, certification, standardisation and review processes need to be introduced. They mentioned the need for platforms to satisfy very different requirements and pointed out that strategies should be developed and financial and other resources freed up. In addition to extrinsic motivation, incentives should be created, for example through improved reputation. In addition, public relations, the availability of advice, training and information should be increased and good/best practice examples shown.

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BACKGROUND

In Switzerland, the Special Interest Group Open Educational Resources (SIG OER) has been addressing the topic of OER for over nine years. As part of the swissuniversities "Open Science[1]" programme, a project group of university members was founded with a view to developing a national "Open Science Strategy", in order to address this task and the development of an "Action Plan". In order to ensure that, in addition to a literature review written by the project group members as well as their own experiences and expertise, current data and other opinions on OER were also taken into account, swissuniversities and the head of SIG OER, who was a mandated member of the project group, wanted to carry out a survey on OER. swissuniversities, commissioned the authors of this report to create an online survey.

The eduhub community[2] was selected as the target group for this survey as it includes university organisational unitsand university members who are particularly involved in the fields of teaching and learning with digital technologies, didactics" or IT. What's more, the aforementioned SIG OER also comes from this community. By using the eduhub mailing list, around 1,150 people from the Swiss e-learning community could be contacted and invited to take part in the online survey. This meant that institutions and groups of people interested in the topic or, best of all, already active in the field could be reached. Furthermore, the participants were provided with the following UNESCO definition of OER:

"Open Educational Resources (OER) are teaching, learning and research materials in any medium that have been released under an open licence that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. The authors themselves determine which rights of use they grant and which rights they reserve for themselves." (UNESCO, 2019)

An online survey with closed-ended scale questions (quantitative approach) and open-ended questions (qualitative approach) was chosen as the method of collecting "votes" on the topic of OER. In particular, the high proportion of open-ended questions and the wide range of answers to them offer a deeper insight into the subject area. The ZHAW University Library was commissioned to design, conduct and secure the results of the survey as part of the Open Science programme. The questionnaire for the survey and its translation into English and French were developed by the ZHAW University Library and members of the SIG OER[3]. Its purpose was to determine the significance of OER in particular in Swiss higher education and also to generate statements on how this could be strengthened.

[1] https://www.swissuniversities.ch/en/topics/digitalisation/p-5-scientific-information

[2] https://www.eduhub.ch/

[3] Special thanks are due to Nadja Böller, who worked actively in the swissuniversities project group and showed a high level of commitment, especially at the start of the project.

DATA COLLECTION AND EVALUATION

The questionnaire used is divided into several thematic sections. In the first section, the survey asked open-ended questions about people's general assessments of OER and OER in Switzerland as well as the general benefits of OER. The second and third sections asked for the participants' assessments of the institutional framework for OER and institutional experience with OER. The fourth section focused on the participants' individual experiences with OER. Prior to this, information was gathered to determine which institution the participants belonged to as well as their occupation. After completing the thematic sections, they were asked about their willingness to participate in an interview and to provide the contact details required for this.

The tool "*findmind.ch*" was used to conduct the survey. The questionnaire was available in German, French and English. The link to the survey was sent by SWITCH on 4 July 2019 to the e-mail distribution list of *eduhub.ch*, the e-learning community of Swiss universities. The exact composition of this community is unknown. According to SWITCH, the distribution list comprised approximately 1,150 e-mail addresses. A reminder e-mail was sent on 24 July 2019 and the survey was completed on 20 August 2019.

197 people started the survey, of which 98 people completed the survey in full. Only participants who answered at least one of the thematic questions were included in the evaluation. This is a total of 114 people from 30 different universities. The table below shows the distribution of participants by type of university.

Table 1: Participants (P) by type of university

Total P	Universities	Participants per university type			
		Uni	UAS	UTE	Other
114	30	49	47	16	2

The Annex shows the number of participants per university (Tables 5 & 6). There are differences in the number of people per university who took part in the survey. The range is from one person per university (Uni Bern, SFIVET, several UTEs) to 12 people (ETHZ). Categorisation of type of university is based on the swissuniversities higher education area classification (swissuniversities, 2019b). However, in a departure from this system, SFIVET was assigned to the universities of applied sciences category.

All available answers of the 114 participants were taken into account when evaluating the general questions and the questions about personal experiences. In contrast, the evaluation of the questions on institutional framework conditions and experiences was limited to the three university types and thus answers from people from the other institutions (PSI, SWITCH) were not taken into account.

For reasons of data protection, this report does not list the occupations of the participants. However, at the beginning of the questionnaire the participants were asked if they held a teaching position. Questions

on personal use and production of OER were then presented only to people in a teaching position. A total of 78 people (68.4%) in a teaching position and 36 people (31.6%) not in a teaching position (third space) took part in the survey.

The evaluation and visualisation of the closed-end questions with an answer scale (quantitative data) was carried out with the R programming language. The evaluation of the open-ended questions with detailed answers (qualitative data) for the general assessment of OER and competence development in universities (questions 6, 7, 25) was carried out with the R package RQDA (Huang, 2016). With this tool, individual sentences or text fragments were assigned (vgl. Chandra & Shang, 2019, S. 91ff.)to a topic (code) inductively (i.e. without coding instructions and semantic-syntactic rule sets in this case). These individual codes were then grouped into categories, which are shown in the graph below. At least one text fragment from each answer was assigned a code and thus a category.

RESULTS

GENERAL ASSESSMENTS

CHALLENGES

Firstly, participants were asked to provide a general assessment of the challenges presented by OER. The three most frequently mentioned categories (mentioned between 63 and 70 out of a total of 339 instances) were those which emphasised **technical/infrastructural**, **content-related** (which here also means qualitative, pedagogical or didactic challenges), or **cultural** aspects. The figure below shows the number of times each category was mentioned (includes all categories).

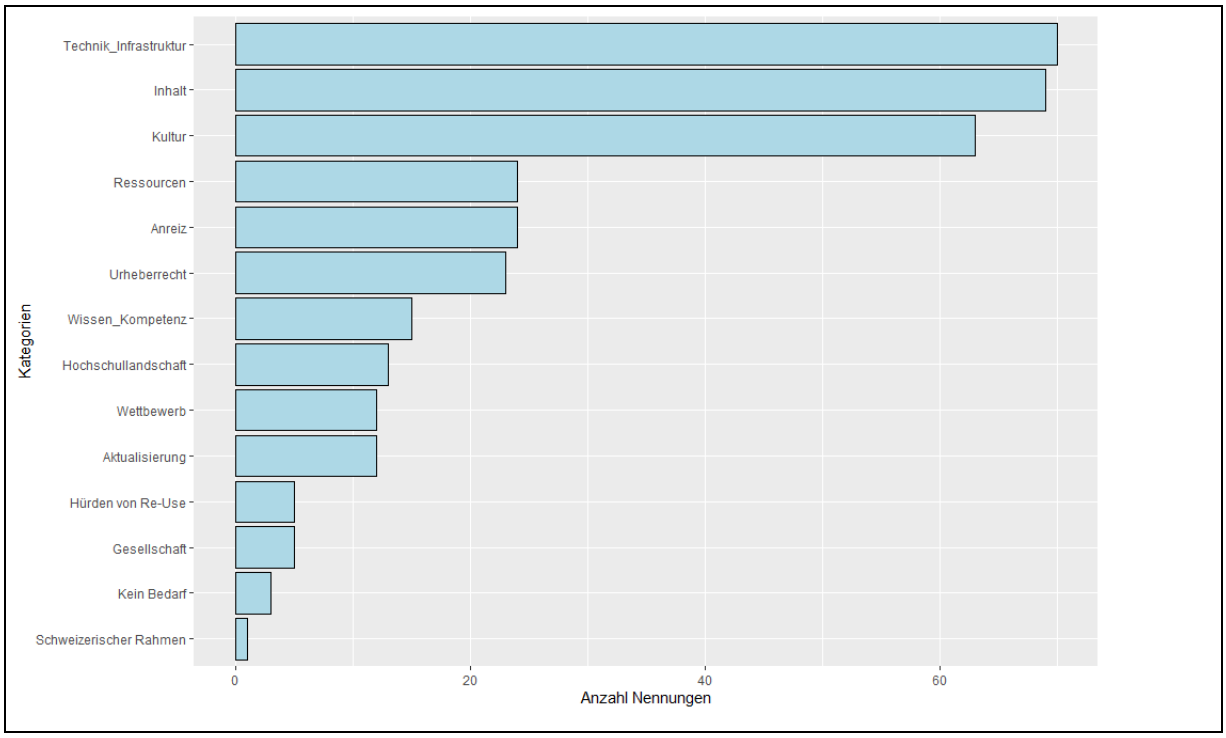


Figure 1: Challenges presented by OER

Answers which contained the following keywords were included in the category of **technical/infrastructural** aspects: *Findability/search/find, accessibility, metadata, structure, repository/database/portal, integration into systems/LMS, network, collaboration, comment function, technical ease of access, granularity, infrastructure, silo, federated data, interoperability, open data/systems, instability*. In some cases answers could not be clearly assigned to a category. The following answer was assigned to the technical aspect, although it also contains aspects relating to content:

> *"A dilemma: centralisation with predefined content, tasks etc. and thus the possibility of a wide distribution versus adapted, individualisable OER and ultimately adaptive teaching and learning."*

Overall, technical/infrastructural challenges are problems that can be addressed with technical measures. The list of keywords above shows the multitude of requirements that a corresponding technical system would have to meet.

The second most common category includes aspects relating to **content**, where the challenge regarding the *quality* of OER is mentioned as an important aspect. Besides "quality", the following are the main keywords in this category: *Diversity, lack of standards, sustainability, stability, consistency, contingency, fit, didactics, specific content/curriculum, language, reliability, reusability, publishability, design, real-world*. The following quotations illustrate these different aspects:

> *«Often the collection of open resources becomes a big dumping grounds of unvetted teaching ideas and materials.»*
>
> *"Impoverishment of resources through compliance with CC standards (e.g. only isolated real-world scenarios can be included)"*
>
> *"In general, OER have often already been prepared for use in teaching, i.e. they are integrated into a context (target group, content, time units, links, social forms...)"*

The third category of challenges can be grouped under the heading of **culture (of sharing)**. It essentially comprises the following keywords: *Culture of sharing, acceptance, awareness, free riders, commitment, expectations, will, resistance, fear, preferring your own teaching materials, raising awareness, trust, philosophy*. The following quotations illustrate the global connection of OER on the one hand, but also the local or regional aspect on the other:

> *«[…] the resources should be open both ways: for learners but also for providers of resources. Currently, official providers are in control of their resources, which is a good thing, but may prevent some persons / regions of the world to disseminate their own content. From a global level, we still have rich "northern" countries providing for the southern countries (especially the case for MOOCs).»*
>
> *"Avoid free riders at all levels, both within the organisation (colleagues who use teaching materials without contributing any of their own) and also nationally/internationally (universities that do not develop their own teaching materials, but only use materials from others)"*

In addition to these three categories, **a lack of resources, a lack of incentive structure as well as copyright issues** were also identified as significant problems:

> *"It is time-consuming to copy materials that you can legally use in class (despite the copyright) or search for alternatives on the Internet"*
>
> *"Lecturers prefer to invest in publications which can then be shown on their profiles, for example. Achievements in teaching can hardly be identified"*

The challenges cited are **lack of skill and knowledge, lack of coordination, demarcation, collaboration or objectives in higher education, the competitive climate and the problem of the topicality of** open educational resources **or keeping them up to date**.

NEED FOR CHANGE

The question was asked what changes would have to be made in the Swiss university landscape in order for OER to become more widespread. The distribution of responses by category was slightly more even than for the challenges surveyed.

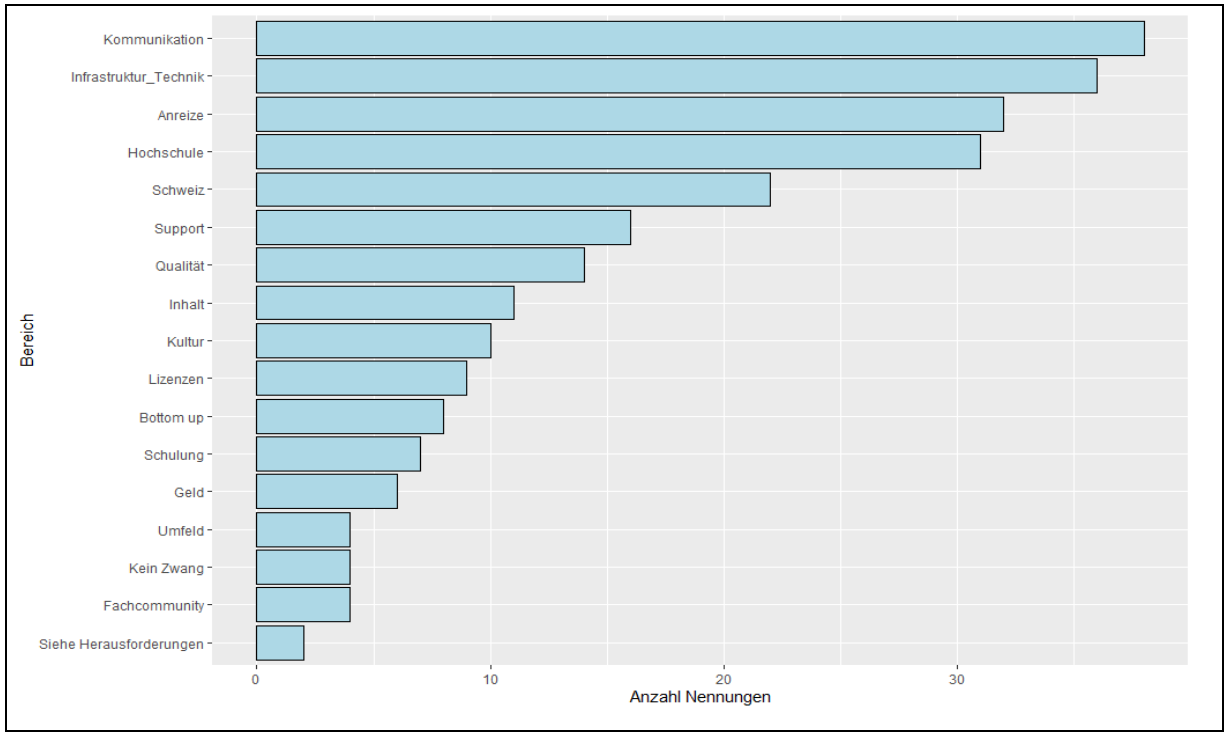


Figure 2: Fields of action

The field of action that was most frequently mentioned (38 times) is **communication**. For this study, the communication category includes responses that refer to *information, education, communication of meaning, public relations, advertising, marketing, campaign desensitisation and a discussion of principles*. The participants found "*good practice examples"* to be important. This field of action corresponds to the challenges summarised above under the keyword *culture* when it comes to approaches to finding solutions.

> *«Use champions of OER to do some PR.»*
>
> *"You would need some really good, innovative instances of OER that can be used as examples and models so that users and creators can see what added value these kinds of well-designed OER have."*
>
> *"A Swiss Open Education Award would be a good idea"*

The **infrastructure** was evaluated as an element which is critical to success (mentioned 36 times) as it is considered one of the major challenges. **The keywords** *platform, database, search engine and repository* were mentioned several times. Some of the participants mentioned a *central platform* as a solution, while others talked about multiple platforms or even highlighted *federated systems and distributed data*. *Visibility, metadata and standards, automatic indexing, starter collections, tracking and review functions* were also mentioned.

> *«To have a review facility where users of the work ie someone teaches a Case study - then can upload comments and hints about how case went in class, what they would change or do differently etc.»*
>
> *«A bottom-up approach to index and inventory existing resources through the application of AI & DataScience»*
>
> *"Providing a platform for publishing OER (it is important that it can support multiple types) and/or a platform that indexes resources automatically. One of these modern tools that looks potentially interesting is LabXchange, which was created by Harvard University based on edX (https://labxchange.org/)."*
>
> *"You would need a solid collection to start with --> I can get it before I return it"*

Incentives was the third most popular category in terms of the number of responses (mentioned 32 times). This category includes responses that called for an *incentive system, added value* and *appreciation*. It seeks answers to the challenges described above under *resources* and *incentives*.

> *"OER creators need to be given more visibility and appreciation for their efforts. The creation of OER is currently rather altruistic, which, of course, is nowhere near good enough given the pressure of resources"*
>
> *«Recognition (i.e. producing quality educational materials should help contributing to a career in the same way that research does)»*
>
> *“Alternative incentives, with which the time invested is given an equivalent value that can keep up with other "currencies" (i.e. in certain fields it is mainly the number of publications, impact factor, citation index that counts, unfortunately)."*
>
> *“There has always been too little incentive to create OER because there are no funds available."*

There were almost as many responses in the **university** category as in the incentives category. The keywords mentioned are: *Policy, strategy, commitment, concept, regulations, objectives, integration into the ecosystem, pressure from university management, anchoring in the curriculum, support funds, time credits and the universities' annual programme* as well as *coordination and cooperation* between the universities.

> *“A clear commitment to opening up education as the basic mission of Swiss universities would be a strong statement here."*
>
> *“Demand and promote university cooperation for the joint development of learning materials."*

> *“Universities should create a climate in which it is completely normal for teachers to share their content and for students to ask for content as a matter of course."*
>
> *“Universities should definitely provide a support fund for all researcher publications to finance OER publishing! University publications themselves are paid for by tax money (researchers' salaries) and should therefore be made available to the public."*
>
> *"Ideally, time given to potential creators so they can create/maintain OER and not fall behind their colleagues who don't produce OER content."*

In addition to a top-down approach at university level, some participants also called for action at the *national* level (by means of *strategies, agenda setting and policy, central contact points and coordination* (this is the **Switzerland** category). But *cooperation with neighbouring countries* was also encouraged.

> *"...joint policy strategy (e.g. of Swiss universities) with an action plan"*
>
> *"Organise the production and publishing of their content by means of an inter-institutional group that functions like an editor"*
>
> *«Maybe collecting a thousands PPTs from CH teachers and analyzing what they have borrowed from Internet»*
>
> *"A stronger cooperation with neighbouring countries. They publish OER in the same languages and some of them already have good, established OER platforms. We could make more use of them instead of compiling something of our own from scratch."*

Content and quality are shown separately in this analysis, but together they would belong to the categories with the highest number of entries (25). Regarding OER content, the main areas participants wanted to be addressed were *findability, editability, standards, uniform format, openness and flexibility* of OER. The participants in the survey also made concrete suggestions for improving or achieving quality:

> *"The option of having your content proofread for accuracy and grammar. It would then be published, maybe on **https://www.teachoz.io/"***
>
> *"Create a quality label"*
>
> *"Similarly to what they're doing in Austria, universities would have the option of becoming OER-approved and employees would be able to get a corresponding certificate."*
>
> *«To have a review facility where users of the work ie someone teaches a Case study - then can upload comments and hints about how case went in class, what they would change or do differently etc.»*

At least 16 statements were put in the **support** category. This is where general, technical and legal support has been combined:

> *"Support teachers in turning their teaching material into OER."*

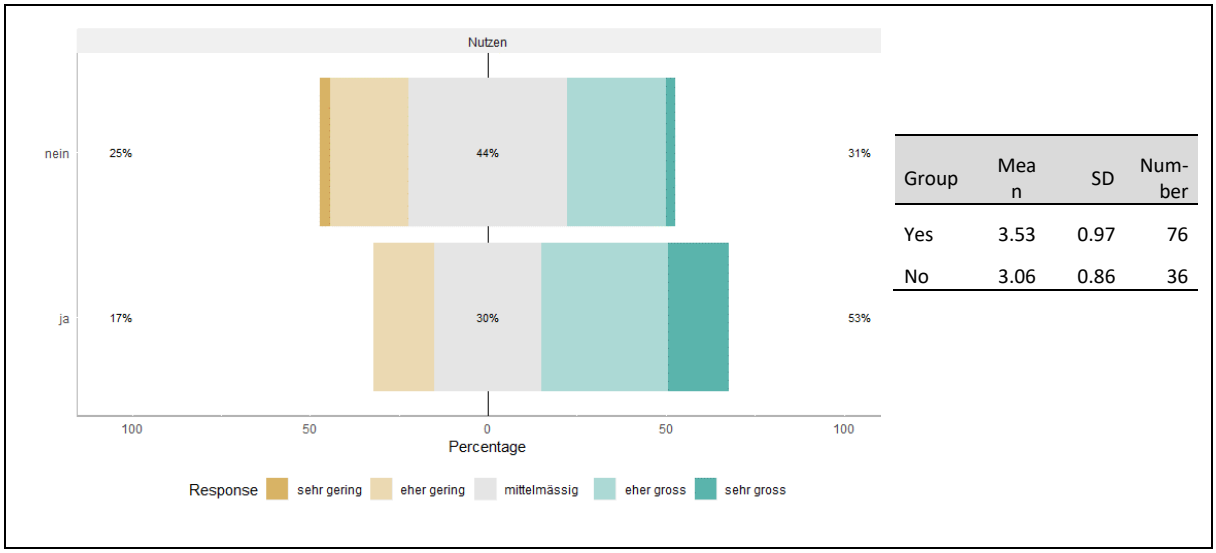
"We need support to produce interactive media."

"Advice and support on legal and copyright issues."

In most cases, the statements that have been grouped into less frequently occurring categories (culture, licences, bottom-up, training, money, environment, no compulsion, professional community) could probably also be included in categories that have already been described above. This is why we are ignoring them for the time being.

BENEFITS

In order to obtain a quantitative statement on the assessment of the value of OER, the participants were asked a question on the general benefits of OER on a scale of 1 to 5. The survey participants assessed the benefit as moderate to fairly high. While participants in teaching positions gave an average of 3.53 out of 5, those not in teaching positions rated the general benefit of OER 3.06.



Group	Mean	SD	Number
Yes	3.53	0.97	76
No	3.06	0.86	36

Figure 3: Benefits of OER according to teaching staff vs non-teaching staff

INSTITUTIONAL FRAMEWORK & OFFERS

According to the responses, five universities have an OER policy. Ten other universities have information available indicating that such a policy will soon be developed. It should be noted at this point, however, that the responses of survey participants from the same university were sometimes contradictory.

About one third of the participants stated that OER are strategically relevant at their universities. According to the responses, some activities have already started or are planned at certain universities. Universities of applied sciences and universities of teacher education seem to be more advanced in this area than the other universities.

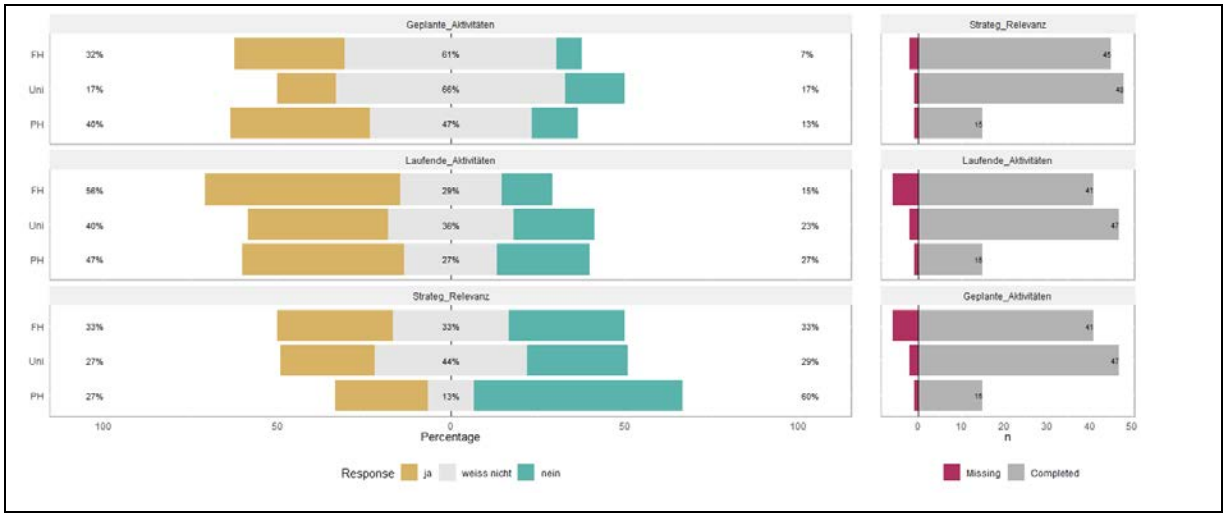


Figure 4: Activities and strategic relevance

The term MOOC (Massive Open Online Course) is mentioned a total of ten times in the more detailed comments on current and planned activities. Furthermore, *teaching materials, teaching sequences, videos and conceptual work and activities related to open science* are mentioned.

When asked what additional resources are made available by the their university, the vast majority of participants answered *none*. *Legal and technical support* seem to be provided most. According to the responses, *time credit for lecturers* is implemented at hardly any universities.

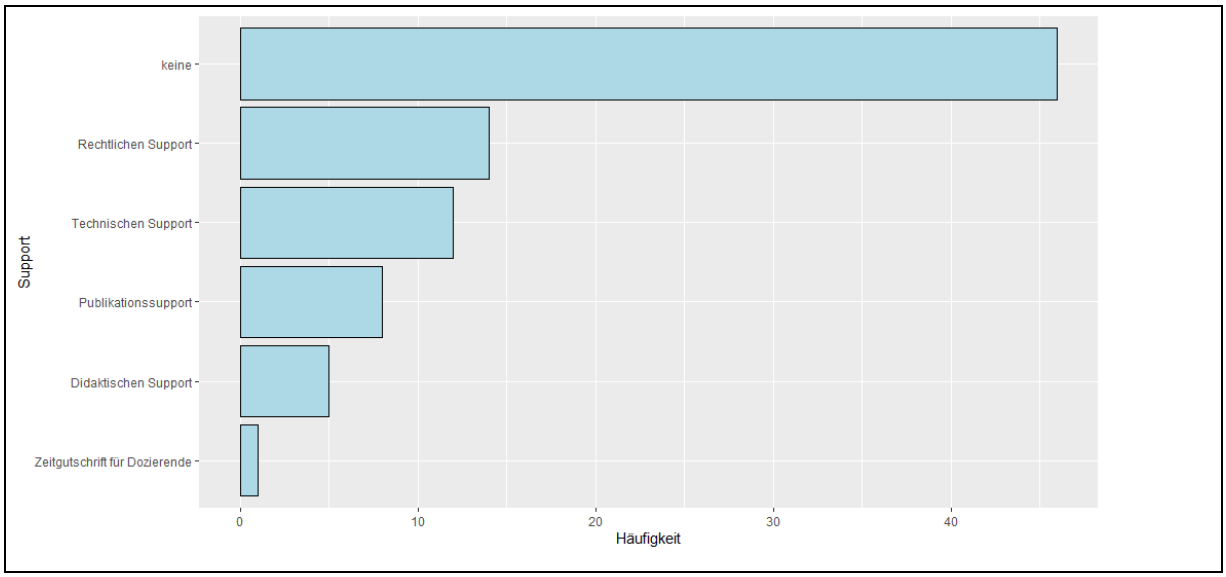


Figure 5: Additional resources

The following graph shows the participants' assessment of their universities' infrastructure and financial resources.

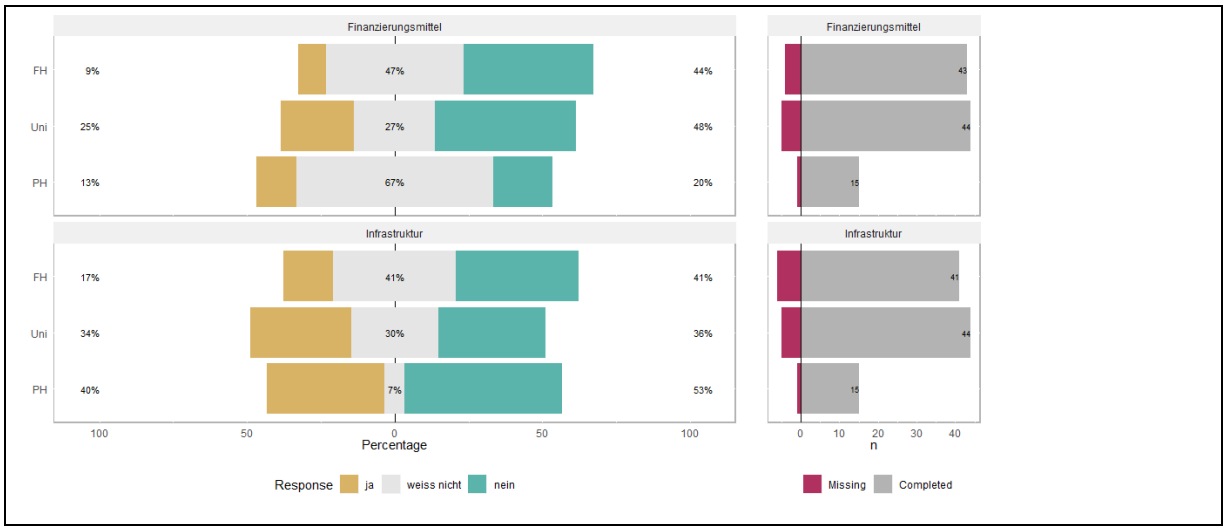


Figure 6: Funding & Infrastructure

Funding seems to be partially available. However, looking at the answers to the question of exactly what funding is available, it becomes clear that it is usually not OER-specific. Instead, funds or resources are available for innovation or digitisation projects, digital skills, MOOC, publication funds or research and development. An hourly credit system and prospective project funds for OER were each only explicitly mentioned in one single answer.

As far as infrastructure is concerned, it is clear that there does not appear to be a specific OER repository at university level that is exclusively or mainly dedicated to OER publications.

Furthermore, the participants were asked which learning platforms were used. Platforms that can be considered as learning management software (LMS) were listed for participants to select. By far the most used LMS is Moodle.

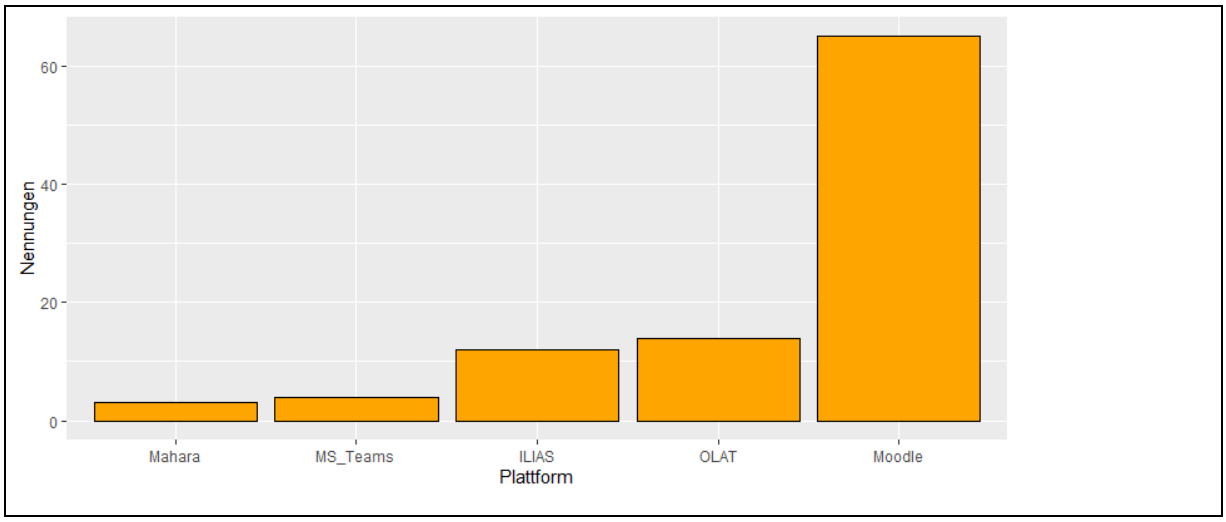


Figure 7: Learning platforms

In addition, the following platforms (although these were mostly not LMS) were listed: Open EdX, Swiss-MOOC, Jypter Notebook, Wordpress, Pressbooks, OpenOLAT, Isyflow, FutureLearn, Canvas, MediaWiki, Informa, Sharepoint Groups.

The next focus was on the question of advisory, information and training services. According to the responses, these kinds of services are limited.

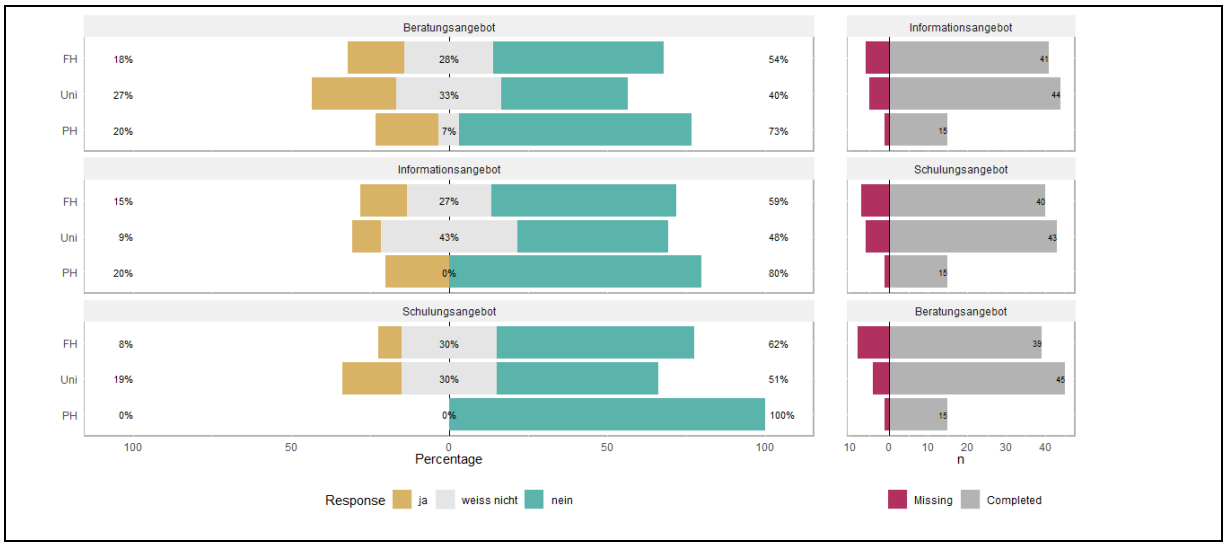


Figure 8: Advisory, information and training services

The answers show that the most likely place to find advice is at the universities. It can be assumed that these kinds of advisory services are mainly part of the support provided for "digital teaching". In contrast to universities of applied sciences and colleges of teacher education, some universities already offer OER training courses; the focus of these courses is clearly to teach "technical formats".

Table 2: Topics offered in training

Topics covered	Number of times mentioned
Technical formats	11
E-teaching	4
Quality	3
Case studies of best practices	2
Legal conditions surrounding licences	2

INSTITUTIONAL EXPERIENCES

MEANING, KNOWLEDGE AND CULTURE

Overall, participants rated both the importance of OER at universities (mean: 1.99) and general knowledge at universities (mean: 1.94) as low. A culture of sharing was awarded slightly higher points overall (mean: 2.46), but is established to a very different extent.

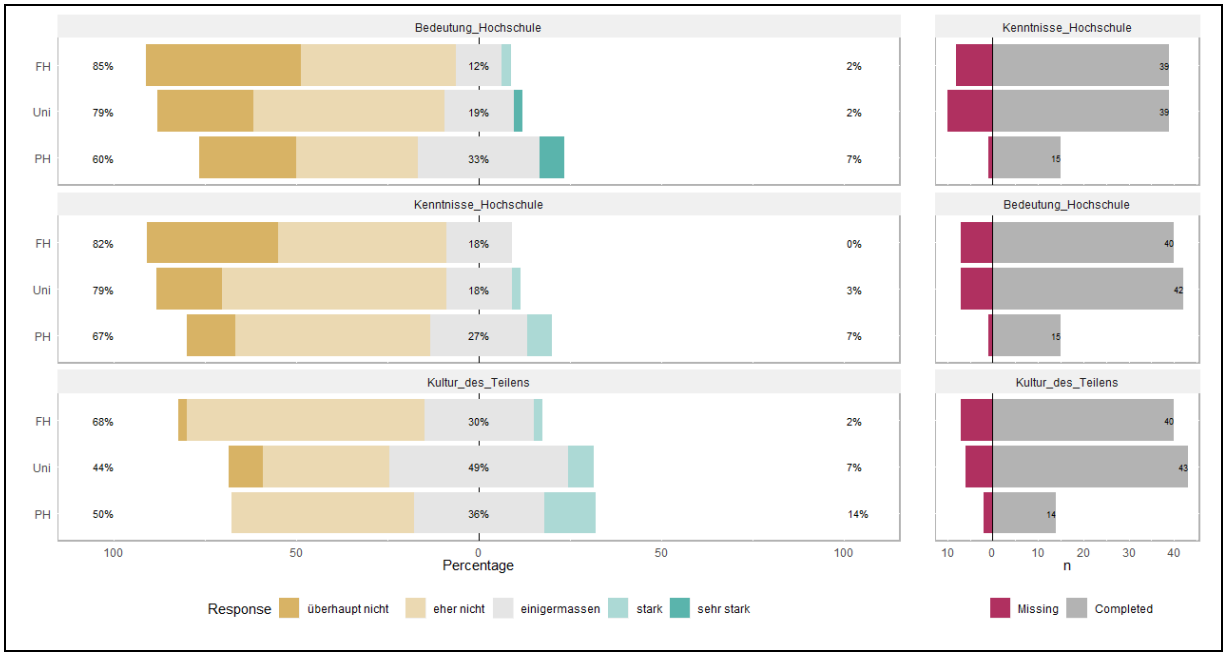


Figure 9: Importance, knowledge of OER, culture of sharing by type of university

The universities of teacher education scored slightly better than the other universities in importance and knowledge. Moreover, there appears to be a stronger culture of sharing. This culture still seems to be very weak, especially at universities of applied sciences.

In addition to being asked to what extent knowledge is available at universities, the participants were also asked an open-ended question about which area skills need to be developed in. The answers were indexed using significant keywords (with RQDA). The following codes were found (in descending order of frequency):

Table 3: Areas with a need to develop skills

Area	Number of times mentioned	Area	Number of times men-tioned
Legal issues	16	University staff	2
All areas	11	Ideas	2
Production technology	10	Culture of sharing	2
E-teaching	9	Not necessary	2
Basics	9	Students	2
Potential	9	Preparation of material	1
Awareness	6	Libraries	1
Platforms	6	Individual responsibility	1
Incentives	5	Communication	1
Integration into existing systems	5	Cooperation with professional communities	1
Use (reuse)	5	Authors of teaching materials	1
Publication and distribution	5	Quality	1
Raising university management awareness	4	Key topics and concepts	1
Best practice	3	Strategy	1
Searching	3	Tools	1
Research and teaching interface	3	Networking	1
Access	3	Compulsion	1

Developing skills in *all areas* was mentioned in 11 answers . *Legal issues* received the most responses out of all the individual areas, i.e. questions about licences, copyright, rights of use and exploitation, property rights and data protection. In addition, developing skills in *OER creation, such as production technology, e-teaching or publication and distribution*, was encouraged. However, developing skills in *quality* was mentioned only once.

PRODUCTION AND QUALITY

The most OER seems to be produced at universities of teacher education, apparently without an established quality assurance procedure. It would appear that universities of applied sciences and non-spe-

cialised universities only have very limited quality assurance procedures in place. Based on this information, we could infer a direct correlation between a lack of quality assurance and increased production of OER. However, this would, of course,have to be verified by further research or the reported lack of quality assurance at universities of teacher education would have to be investigated in more detail.

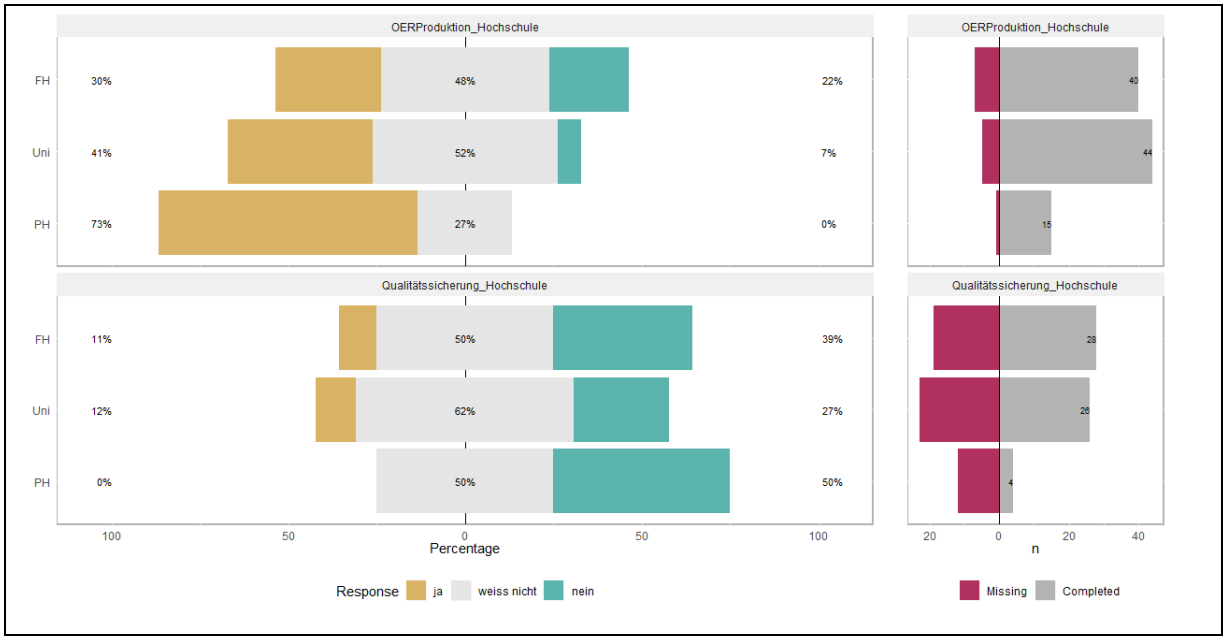


Figure 10: production and quality of OER at universities

As we can see, while OER are apparently already being produced at universities of teacher education, this is not usually the case at non-specialised universities and is even rarer at universities of applied sciences. The vast majority of all participants answered the question regarding quality with *do not know*, or did not answer at all. It seems, therefore, that universities very rarely have quality assurance procedures in place for OER, or at least these processes were not known to the survey participants.

INDIVIDUAL EXPERIENCES

77% of the participants in a teaching position and 70% of participants not in a teaching position stated that they had at least a moderate knowledge of OER. Only a quarter of participants rated their knowledge as poor. This figure is only 23% among participants in a teaching position. The mean values are 3.23 for people in teaching positions and 3.0 for people not in teaching positions. Thus, the sample collected in this survey appears to be quite competent in OER issues.

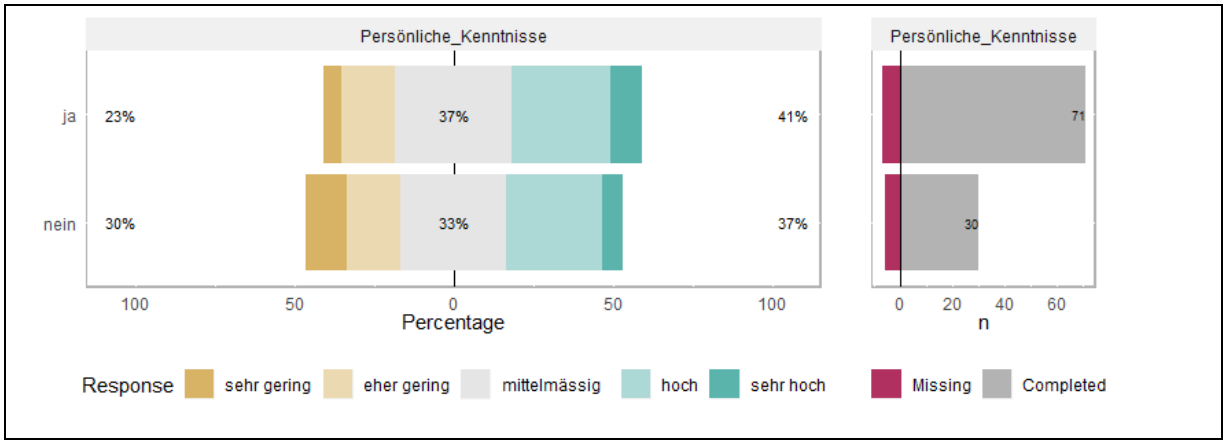
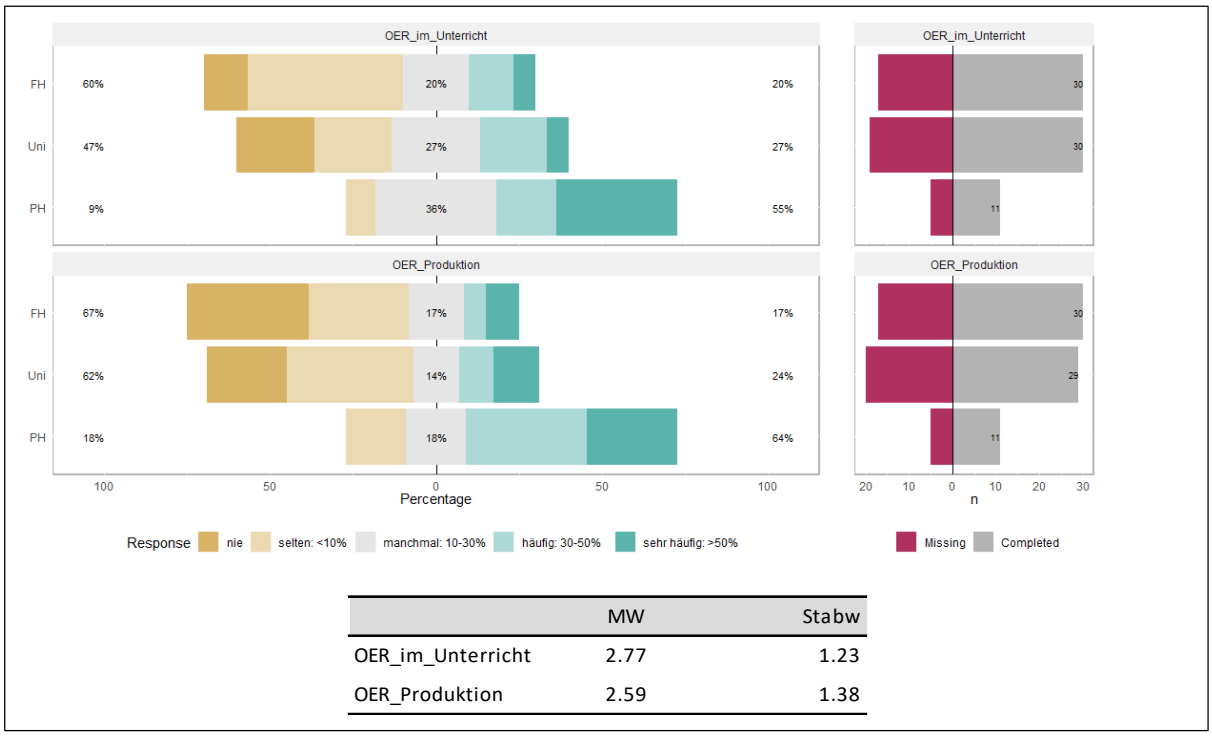


Figure 11: Personal knowledge by teaching activity

The following questions regarding how frequently participants use OER in individual classes/in teaching and how frequently they produce their own OER were only posed to people who had stated at the beginning of the questionnaire that they held a teaching position.



	MW	Stabw
OER_im_Unterricht	2.77	1.23
OER_Produktion	2.59	1.38

Figure 12: Personal use and production of OER

Although these questions were answered by significantly fewer people (n=71) compared to the other questions, a clear trend by type of higher education institution can still be seen. Teachers at universities of teacher education seem to use and produce OER to a greater extent than those at non-specialised universities and universities of applied sciences. 91% of the participants from universities of teacher education stated that at least 10% of the materials they used were OER (non-specialised universities: 54%, universities of applied sciences: 40%). 82% of the staff at universities of teacher education stated

that at least 10% of the learning resources they produce themselves are OER (non-specialised universities: 38%, universities of applied sciences: 34%).

Wikimedia, Google and Khan Academy are the most frequently mentioned sources of OER used in the participants' classes. Surprisingly, few people indicated that they obtained material for teaching purposes from the video platforms YouTube and Vimeo.

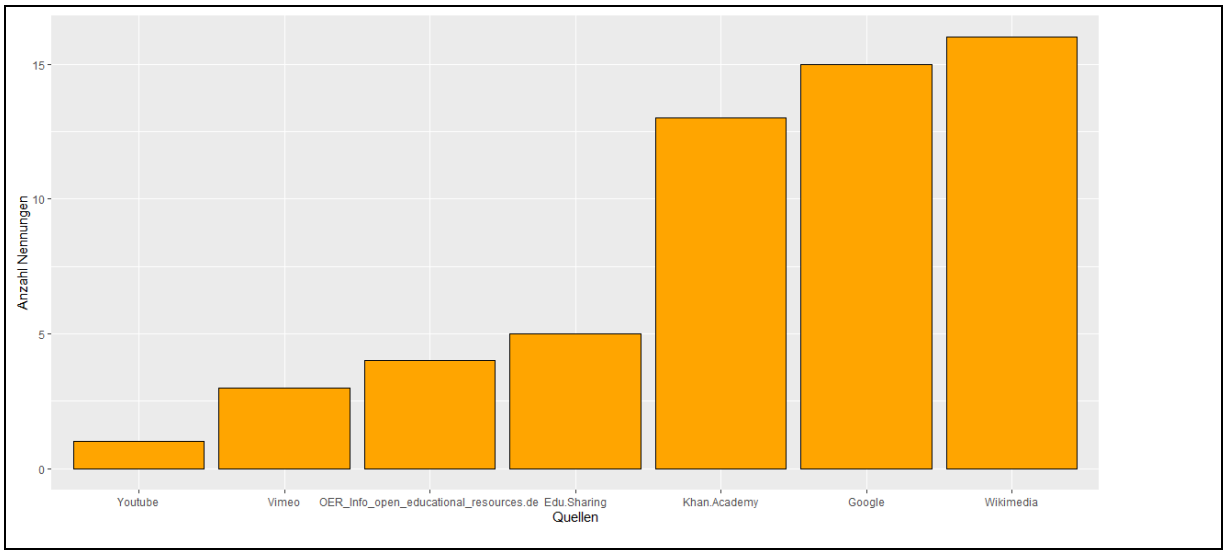


Figure 13: Sources for OER

Participants gave very different answers when asked what type (learning resource, teaching discipline, subject) of OER they produced. The answers given to this question were not categorised, which is why this section refers to the data documentation.

The information on what influences the decision to publish something in OER form is telling (n=50). The answers given by those who answered the above question about their own OER production and who have never or only rarely produced OER are particularly interesting.

Table 4: Influence on the decision to publish OER

Never:
Time, technical equipment and expertise
To gain credits for AACSB! Plus the social aspect of sharing work with colleagues.
Copyright issues, time resources
Copyright issues (major uncertainties)
Available resources, recognition
Lack of time

I'd have to read up on the subject first so I'd know where to publish. I think making something publicly available requires a higher level of quality than if I do it in one of my courses/create it for my work.
The participants' own quality standards.
Rarely:
I'm not sure what the appropriate channels are for the wider publication of materials; you'd need to regularly update content.
Legal outlay involved, uncertainty/doubt that someone would benefit from it, self-doubt
The time it takes to produce resources.
If I create it myself (off my own back), I don't see any problems. When it comes to work I'm asked to do, I usually can't decide for myself.
If elements I use are already CC
Benefits and recognition
Some legal constrains
being sure that the material is of high quality, otherwise I prefer not to publish it
The idea of a teaching resource that other people can use sounds quite gratifying
The quality, security and ease of accessibility of repositories – time taken to adapt a learning resource from being of adequate quality for teaching to being of adequate quality for a wider audience online
Primarily the target audience
Time
Improved reputation (or not)
Having the time/effort, resources needed for it; lack of legal knowledge; I'm generally very open and think OER present a very good opportunity to develop quality teaching materials with others and to pool time/energy in the long term.
Quality and copyrights
I do not purposely provide materials as OER, but I make them publicly available via SlideShare and therefore assume that the materials will be reused. If I'm lucky, I might even be named as the author. If not, that's OK too --> Sharing is caring.

These responses reflect some of the challenges already raised above: *Lack of time, incentive, skill or ease of access of the repository, legal uncertainty, high quality standards or content inadequacy*. It was also mentioned that, when it comes to commissioned work, the author is not always able to make decisions.

CONCLUSION

SUMMARY OF THE RESULTS

The sample described here, consisting entirely of participants in the survey of the eduhub community approached, considers itself competent in OER matters (mean value of teachers' knowledge: 3.23, mean value of non-teaching staff's knowledge: 3.0). Thus, the participants seem to have sufficient knowledge and experience to assess the development potential of OER in universities. When asked about the benefits of OER, the average answer the participants gave is that they are moderate to fairly high. In view of the undeniable need of OCR to develop further in Switzerland, this can be considered a rather high figure. It could be assumed that OER would be of even greater benefit if all obstacles were removed. In this respect, these answers justify actively pursuing the development of OER.

The quantitative results of this survey show that there is a need for development. Infrastructure, financial resources and additional resources for lecturers are only available on a small scale at Swiss universities. In addition, there are only a small number of advisory, information and training services for OER at universities. The survey participants also rate the institutional knowledge and experience with OER and the importance of OER at universities as poor and see the need to develop skills in various areas. A general culture of sharing seems to be only moderately established. In addition, very few universities seem to have a quality assurance procedure in place.

Nevertheless, at least three-quarters of all universities of teacher education, 41% of non-specialised universities and 30% of universities of applied sciences already produce OER. Similarly, of the survey participants in a teaching position, there are a considerable number of employees at the universities of teacher education who already use and produce OER. Meanwhile, those who have never or only rarely used or produced OER cite lack of time, incentives, skill or ease of access of the repository, legal uncertainty, high quality standards or content inadequacy as reasons for their reluctance to make use of OER.

These responses are consistent with those given by participants answering the question about the general challenges of OER. Most frequently, participants emphasised technical and infrastructural problems which needed to be solved. Infrastructure is also at the top of the list of responses to the question regarding what would have to change in order to establish OER more strongly in Switzerland. It is clear that a corresponding information system (platform, repository, network, federated system etc.) would have to meet several requirements: It should be easily accessible, stable, well-structured and with metadata provided. It should alsofacilitate searchability and accessibility, enable collaboration and have comment, tracking and review functions, work with automatic indexing, enable interoperability and granularity, contain a solid starter collection and be integrable into existing systems. There does not seem to be a consensus as to whether a central platform, a federated system or even a number of individual

(subject) repositories are needed. At the moment, there seems to be a diffuse infrastructure for OER (universities of teacher education: 40%[4], non-specialised universities: 34%, universities of applied sciences: 17%) at the individual universities, but there is no repository in operation which is exclusively or mainly intended for OER publications.

In addition, the participants cited cultural aspects of sharing, such as lack of acceptance, fear of free riders, lack of trust or awareness etc. as challenges. A considerable proportion of the participants see a need to develop support and communication. The latter is cited as a solution to the challenges presented by lack of acceptance and awareness, but also by lack of knowledge and skill. Participants recommended on several occasions that PR measures be supported by good practice examples. However, advice is the most likely service to be offered at universities (18-27%), although it is not always OER-specific, while information (9-20%) and training (0-19%) are only available to a very limited extent. Skill development seems to exist in all areas, but especially in legal matters, technical and didactic production and distribution. The university level was also identified as being strategically relevant. Policy, strategy, commitment, targets, time credit or pressure from university administrations are mentioned as keywords in relation to this. When university staff were asked whether their institution had a policy in place or whether OER are of strategic relevance at their university, some ignorance became apparent. Participants from five universities stated that there is an OER policy at their university. However, the authors of this report could not verify this information. About a third of people stated that OER are strategically relevant at their university and they are distributed more or less evenly between the different types of universities. 40% (universities) to 56% (universities of applied sciences) stated that OER activities have already been introduced at their universities. This shows that the topic has not yet reached every institution in the Swiss higher education system, but that it is still being dealt with in a few isolated cases. In addition to a top-down approach at the university level, some participants called for this kind of approach at national level. Participants also mentioned terms such as strategy, agenda setting and policy, central contact point or coordination,and cooperation with neighbouring countries at the national level.

Aspects relating to content are seen as another major challenge. On this topic, the following seemed to be of particular interest: questions regarding quality and reliability, adequacy and adapting content for use in teaching, as well as the reusability and sustainability of learning resources. In addition to the possible commenting and evaluation functions or the inclusion of a community review process, which have all already been described as technical requirements, the introduction of standardisation and certification appears to offer itself as a solution. On the one hand, standardisation of learning resources and their metadata could be developed as part of this. On the other hand, standardising a review process could also enable universities or organisational units to be certified (i.e. given a "quality label"). However,

[4] In the case of universities of teacher education, it should be noted that some of the OER infrastructures have been developed for the target group of staff teaching in compulsory education. This means these OER are not necessarily useful for universities.

while it would seem that very few universities already use some kind of quality assurance system (non-specialised universities: 12%, universities of applied sciences: 11%, universities of teacher education: 0%), they are not the universities that are already producing OER. In this respect, the concerns about the quality of today's OER are quite justified.

The fact that the production of high-quality OER is time-consuming often came up in the answers to the open-ended questions (on general challenges, the influences on the decision to publish OER). In addition to resources, participants also cited the competitiveness related to OER as a challenge. This is related to the lack of incentive, which also came high up on the list of things participants mentioned, and which would seem to be one of the more urgent problems. Improved reputation (cf. the scientific publication system) or financial gains should increase both the intrinsic and the extrinsic motivation to produce OER, the latter of which is generated top-down (via the universities to some extent). According to the survey presented here, however, the universities do not seem to have any significant funds or time credit systems at present. The survey seems to suggest that OER policies or universities that consider OER to be of strategic relevance are "few and far between", which explains why there are currently no external or internal incentives to produce OER.

In any case, the survey saw some controversial discussion in answer to the question of whether OER should be promoted from the top down or the bottom up. Some participants opted for a top-down approach in their demands for a strategy or policy at university – or even national – level. Others stress that the matter should not be forced and that it would be better if the promotion of projects and networking were driven from the bottom up. This area of conflict is most apparent in the question of whether a central platform should be introduced in Switzerland or whether it would be better for subject-specific communities to manage their own separate repositories. It is probable that neither of the positions put forward can provide a clear answer to these questions and both needs should probably be taken into account. In addition, legal details such as licensing (CC-0 versus CC-BY-SA versus CC-BY-ND) were controversial topics for discussion. With regard to developing a repository and making it available, the question can be asked whether "non-OER" should also be included.

The following figure is intended to summarise the results, but also to illustrate how the fields of action are interlinked.

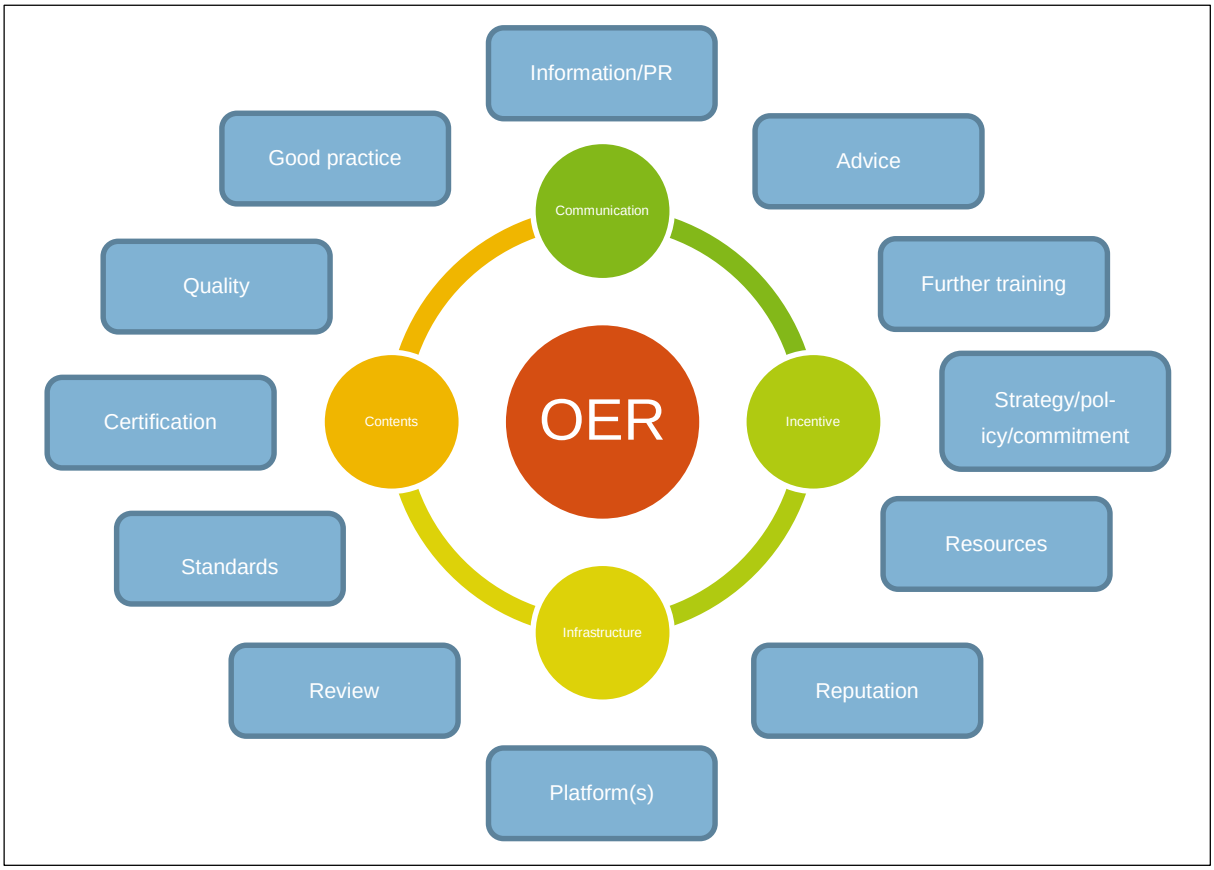


Figure 14: Fields of action

RECOMMENDATIONS FOR ACTION

Based on the results of the OER survey and various SIG discourses, recommendations for action are provided in brief at the end of the report, so that they can be included in the swissuniversities project group's action plan if necessary. Since any recommendations for action are fundamentally central to measures under further education policy, a separate publication with more detailed explanations by the SIG OER will follow in 2020. Other countries, such as the report of the Working Group of the federal and state authorities (Germany) (Kulturminister Konferenz & Bundesministerium für Bildung und Forschung, 2015), have also drawn up a position on the usability of "Open Educational Resources" in teaching and learning processes and on measures and framework conditions for the development of a corresponding pedagogical and technical infrastructure.

In order to adequately present the complexity of the subject area or the various perspectives and focal points and to make them compatible with the discourse on higher education and funding, thematic distinctions are made for the following descriptions.

OER infrastructure: To begin with, the "OER infrastructure" should be mentioned; that this is a central topic area was also made clear in the different responses to the OER survey presented above. In this context, what are the central aspects of an OER infrastructure in terms of platform/repository?

- Building a common Swiss OER platform?
- Building a pure OER platform?
- Infrastructure support for networking Swiss platforms on which OER are located (technical interfaces)
- Integration of Swiss OER on international platforms/repositories (technical interfaces)
- Question about the target group of a possible repository/platform (universities, higher education institutions, schools etc.)

For example, a feasibility study from Germany dealt explicitly with the development and operation of OER infrastructures in education (Deutscher Bildungsserver, 2016).

Metadata: Closely linked to the infrastructure, the integration of metadata has to be shown and a standard structure (mandatory and optional) has to be developed. The responses to this topic area also made it clear that the community on an OER platform – a repository – can take on various roles and that a separate community could also be set up for quality assurance purposes.

- How differentiated should they be or which metadata are required in each case and which should also be integrated optionally in any case?
- Interaction options for visitors to the OER platform
- Community evaluation mechanisms

Reputation/incentive systems: Another central aspect is the establishment of incentive systems at different levels. Here, a distinction must be made between "extrinsic" and "intrinsic" incentive systems.

The development of OER university policies is certainly at the heart of external incentives for staff. In addition, any policy is to be understood as a statement of the universities' educational policy.

In principle, it is important that the work of the authors of OER, as far as the educational and career system are concerned, offers authors the chance to improve their reputation. These achievements should be appropriately acknowledged – not only by the OER community, but also by OER awards or certifications, for example. Not forgetting the possibility of incentive presented by specific programmes to promote the development and publication of OER. Published OER could be made visible and categorised in a similar way to publications on literature or OER lists. In this respect, on the one hand, higher-level funding (federal, cantonal, university etc.) must be made available for OER and, on the other hand, recognition systems must be developed as an essential tool for developing teaching and for the authors' record of achievements.

Communication: In order to increase the visibility of OER activities in Switzerland and also internationally, various communication strategies are required. These should already be included in the development of the platforms/repositories. For example, the selection or definition and the associated functions of metadata increase transparency in the educational space. In addition, a collection of good practices or communication about specific OER in publications, on blogs, websites and in events (webinars, conferences) can create a new public realm, such as https://oer-schweiz.ch/; https://www.openeducation.at/home/; https://open-educational-resources.de/; https://open-educational-resources.de/karte/; https://wb-web.de/aktuelles/oer-in-deutschland-eine-bestandsaufnahme.html; https://openlearningdays.ch. Moreover, it is not only the OER themselves that contribute to the dissemination of the topic, but also the provision of information and training material (e.g. explanatory videos) on various topics, such as law, licences, making OER etc.

Contents: The OER materials can be evaluated by the community in terms of content, pedagogical diversity and didactic requirements. The determination of the categories and criteria with a focus on quality depends on the implementing institutions, target groups etc. in each case. Furthermore, the establishment of editor groups offers the opportunity for people to exchange information via OER and to highlight specific materials. Additionally, the educational institutions themselves can also design and communicate possible definitions for "best practices" in production and distribution standards. Here, too, certification enables a form of quality development and assurance.

In summary, we can say that there are far-reaching options for integrating the topic of Open Education into the discourse of the Open Science topic area using the example of OER materials and at the same time making it visible in practice. With activities at different levels, i.e. from educational policy demands and institutional initiatives to individual developments in and for teaching.

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ANNEX

Participation**Fehler! Keine gültige Verknüpfung.**

Table 5: Number of persons from universities of teacher education and various

UTE		Other	
Bern University of Teacher Education	4	Paul Scherrer Institute PSI	1
Schwyz University of Teacher Education	3	SWITCH	1
St. Gallen University of Teacher Education	3		
Lucerne University of Teacher Education	2		
Fribourg University of Teacher Education	1		
University of Applied Sciences in Special Needs Education, Zurich	1		
Grisons University of Teacher Education	1		
University of Northwestern Switzerland (FHNW) School of Education	1		
Total	16		2

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FIGURES

TABLES