



MONITORING PROGRESS ON OPEN EDUCATION IN GERMANY

Ulf-Daniel Ehlers, Baden-Wuerttemberg Cooperative State University, Germany

Summary

The paper summarises the situation of OER in Germany. An analysis of the scope of acceptance, use and implementation of the concept in educational institutions and policy, as well as an overview of the major actors and initiatives in the field of OER is presented. In addition, considerations about the concept of Open Educational Practices (OEP) and possible benefits for educational institutions are suggested.

Introduction to the Report

Open Educational Resources (OER) are meanwhile an introduced term in the field of education, research and (educational) policy in European countries and beyond. However, the scope of acceptance, use and implementation of the concept is varying strongly between countries. In this paper we attempt to utilize the method of a case study in order to describe the state of play of OER integration in educational practice and policy in Germany. We will show that Germany has raised a number of objections to the idea of OER. In an OECD survey in 2011 Germany – as the only OECD country – declared that OER were no priority issue for German education policy and would not be in the near future (Hylèn et al. 2012). In general, it is questioned whether a lack of digitally available content in Germany really hinders learning – this is debated particularly in the case of people with low qualifications – or, if it in fact truly presents a barrier for life-long learning in Germany, since access to (free and printed) learning materials is perceived as generally very good. Furthermore, it is debated if there are any sustainable business models for OER and suggested that there are unsolved questions of standards, quality, technical interoperability, and still open legal issues leading to risk of use of OER. In particular, the issue of copyright is widely discussed in Germany with reference to the ongoing Open Access debate. In Germany open educational resources have not yet reached the educational mainstream. However, a concerted statement of the federal government and the Lander (which are the 16 German states) was announced for late 2014 – and is still outstanding. Still a discussion about OER in Germany started in 2011 with the debate about the so-called “school-trojan”. The “school-trojan” project was based on an agreement between the education ministers of the Lander and the textbook publishers in order to infiltrate school computers, and allow searching school intranets and computer systems in schools for unlicensed teaching materials using a trojan spy software. The agreement was negotiated in 2011 and was then abandoned again due to strong protests from teachers, unions and open access activists in 2012 again. Although it seems that publishers abandoned the concept of

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

OER, in Germany campaigns and regional events were organized to emphasize the importance of OER (presented in chapter 2). Due to that several successful OER initiatives have developed in Germany (come of them presented in chapter 3). Open educational resources are also mentioned in official policy documents of the federal government, today (presented in chapter 4). Several publications and stocktaking activities about OER were initiated and research in that field was funded.

An authoritative definition of Open Educational Resources (OER) has not yet been agreed on. However, in this paper we follow the suggestion of the UNESCO International Institute for Educational Planning (IIEP) that OER include Open (Course) Content, Open Source development tools and Open Standards and licensing tools (International Institute for Educational Planning/ UNESCO, 2001). Open therefore means that the content (inclusive of meta data) is provided free of charge, that the content is liberally licensed for re-use, favourably free from restrictions to modify, combine and repurpose, that it is produced in an open format and designed for easy re-use and developed and hosted with open source software (Geser, 2007).

Although we seem to be on the verge of a changing landscape in Germany, and also other European countries, however, it is still an open question why OER still lack implementation on a large scale, also in Germany. Tony Bates suggested that the success of OER depend on building sharing cultures in organizations rather than access to technologies as main factor (Bates, 2015; also Ehlers, 2014). This is supported by the review of OER research since 2008 summarized below. It shows that the challenges associated with OER no longer emphasize solely on problems associated with availability or technological accessibility of resources but rather focus on usage, and on barriers of OER usage in the given educational setting or in the particular organisational culture. One could argue that the term OER – with its focus on the “R”, the resources – constitutes a renaissance of the believe that in pedagogical scenarios content (resources) matters most. Research into the critical success factors of open education, however, show a different focus – it emphasizes:

- The focus on OER usage instead of the resources (Windle, Wharrad, McCormick, Laverty, & Taylor 2010; Philip, Lefoe, O’Reilly, & Parrish, 2008);
- The need for OER use skills (Beggan, 2009; Conole & Weller 2008);
- The importance of teaching skills and teaching culture and OER (Beggan, 2009)
- The necessity for OER quality frameworks and concepts specifically for open resources and open practices (Camilleri, Ehlers, & Pawlowski, 2014)
- The lack-of-transparency culture (McGill, Beetham, Falconer, & Littlejohn, 2008);
- OER assessment and recognition (Camilleri & Tannhaeuser, 2013; CHEA, 2014)
- The conflict between research and teaching excellence (Browne, Holding, Howell,& Rodway-Dyer, 2010);
- The shift from supply to demand side with OER (Browne et al., 2010; Beggan, 2009; McGill, Beetham, Falconer, & Littlejohn, 2010);

- Learning design as the pedagogical underpinning of OER (Kahle, 2008; Boyle & Cook, 2004).

OER in Germany: A chronology of main events

In November 2011 a meeting took place in form of a bar camp in Bielefeld, a small town in Germany, in which different actors signed a declaration of interest to disseminate the concept of OER in Germany more intensely. Afterwards an initiative was founded to harmonize the terminology of OER in the German speaking context and to organize the debate about challenges and chances in the field of OER. In addition, several smaller initiatives were launched, e.g. the blog *cc-your-edu.de* which provides information to interested teachers about the creative commons licenses. The first OER dedicated *OERCamp* took place in September 2012 in Bremen, Germany. In the summer of 2013 the first open online course on OER, *COER13* took place. In fall of the same year, the Wikimedia Foundation organized the first OER Conference in Berlin, Germany. First signs of a changed policy debate are today noticeable on federal as well on the Lander policy level. In Berlin the local government commissioned a study to find out the potential and distribution of OER on Berlin in comparison to the other Germany Lander. The study was carried out by the „Technology Foundation Berlin“.

In November 2012 an expert meeting was organized between the federal ministry of education and research (BMBF) and the ministers conference of education ministers of the Lander (Kultusministerkonferenz) with the aim of stocktaking and defining the state of art of OER in Germany. All invited experts as well as the policy makers were agreeing that OER could be a meaningful complement to all other existing teaching and learning materials. Controversial discussions were led on the issue of quality assurance of OER and business models for OER development and distribution as well as issues around intellectual property rights. Representatives of publishing houses made a point that free access to teaching materials were putting their business under risk. Following the meeting, the conference of ministers of education was installing a workgroup on OER to put forward a position paper by 2015. In 2013 OER has been adopted into the coalition treaty on federal level of the then new coalition government of the Christian Democrat Party (CDU), the Christian Social Union (CSU) and the Social Democratic Party (SPD). It states „School books and teaching material... shall, as far as possible, be made available for free, the use of open licenses shall be extended.” (CDU et al., 2013; pp.22-23)

In 2015 a report has been commissioned by the ministers of education of the German Federal Lander about OER (Bund/Länder AG, 2015). However, the report lacks conceptual vision in the sense that large parts of the eleven-page document only work out definitions, examples and history of the concept of OER and are not comprehensively summarizing the development of OER in Germany. In its most interesting part it suggests a way forward in six points which are interesting recommendations:

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

1. Support the building up of platforms, registries and repositories to make available OER more easily and in target group specific formats.
2. To improve legal frameworks for sharing and reusing OERs on basis of the intellectual property rights.
3. To raise awareness for OER.
4. To inform better about OER.
5. To improve the European and international collaboration on OER.
6. To build coordination point and service desk for OER in schools and lifelong learning.

IN summary it can be stated that on a continuum from *open data*, via *open access*, then *open educational resources* (OER) and finally *open education* or *open educational practices* (for the term of OEP, see Conole & Ehlers, 2010), Germany has embraced the first two developments but has not come far (yet) with OER and OEP. In a major international research report called “Beyond OER”, we concluded that OER in higher education institutions and schools in all European countries are available in principle, but are not frequently used (Ehlers et al., 2011). This is also true for OER in Germany. The cited study identifies the main barriers for using OERs: lack of institutional support, lack of technological tools for sharing and adapting resources, lack of skills and time of users, lack of quality or fitness of OER and personal issues like lack of trust and time (ibid.). While in Germany the federal government promotes an ICT policy, which aims at digitalization of higher education and schools, the development of OER policies is still in an early phase, if at all visible.

OER Initiatives in Germany

German schools and universities in general are very well equipped when it comes to textbooks and learning materials. In Germany, there are about 80 educational publishers that produce more than 3,000 new textbooks per year. In addition, while open access in science and research is well developed, scanning and copying books, remixing and e-mailing materials from commercial books are illegal in Germany. That creates a tension between schools and commercial publishers who in 2012 tried to launch an initiative to install a software application called “School-Trojan” to control forbidden digitalization in schools. The increased digitalization of society and new approaches to teaching have brought the global discussion about licensing teaching materials to Germany now more intensely. In Germany, too, there have been different initiatives in support of OER, a few are listed below:

Schulbuch-o-Matt (<http://www.schulbuch-o-mat.de>) is a national wide initiative by OER-Schul-E-Books to create collaborative free OER textbooks for schools, which are according to curriculum standards. It started in 2010. Crowd funding raises the money for the textbooks. Teachers, experts from university and graphic designer work together to produce the textbooks. They are free of charge for everybody. Since they are according to the curriculum of the particular federal state, the textbooks themselves are regional projects. The initiators of Schulbuch-O-Mat were mainly from universities. The project is also accompanied by an evaluation. So far two textbooks have been produced by OER-Schul-E-Books:

- OER “Schul-E-Book Biologie” is a textbook for Biology for grades 7/8 of High Schools according to the curriculum of Berlin. It started in 2012 and was finished by the end of July 2013. The necessary budget was raised by crowd-funding till January 2013. The book itself was written by voluntary biology teachers and edited by professional graphic designers. The textbook is consistent with the curriculum (from 2006/2007) of Berlin for High Schools (Gymnasium) grades 7/8. It is the first free digital textbook in Germany under OER and CC license. The textbook itself is available as a webpage, and can be downloaded as pdf, ePub and iBook, and consists of multimedia courses with quizzes and exercises. Form and content is similar to a printed textbook, but it also includes interactive exercises, videos and pictures. The textbook is created with LOOP (Learning Object Online Platform), a free authoring software by the University Luebeck.
- OER “Schul-E-Book Politik/ Wirtschaft” is a collaboratively written textbook for grades 5/6 and 7 to 9 in secondary schools for politics and economy according to curriculum in North Rhine-Westphalia. The title of the first part of the planned series is "Securing and enhancing democracy". There will be two levels for different types of schools available. Form and content is similar to a printed textbook, but it also includes interactive exercises, videos, pictures, a glossary and an index. The last chapter is about different methods used in the subject like interviews, analyzing texts, pictures and cartoons, researching in the internet, designing a poster etc. It is an on-going process with the first part being finished in June 2014. The content is under the CC By-SA licence. The textbook is as well created with LOOP (Learning Object Online Platform).

Lehrer-Online (<http://www.lehrer-online.de/lehrer-online.php>), started in 2008, is a national platform for schools which was originally funded by the Federal Ministry of Education and Research. The main tasks of Lehrer-online are the provision of information and teaching material for schools (primary schools, secondary schools, vocational schools). New media for teaching and learning is a strong focus of the programme. Lehrer-online is part of the online network www.schulen-ans-netz.de, financed by the Federal Ministry of Education and Research (BMBF) and, in its first phase, sponsored by the Deutsche Telekom as well. Now it is led by the limited company Lehrer-Online GmbH. It is financed by advertisement and other services for the Federal Ministry or the ministries of the federal states. The material is still free for the schools. Most German federal states have now similar initiatives, e.g. Bavaria, Lower Saxony etc. The services of Lehrer-Online include: practical teaching modules including free-of-charge working materials, methodological and didactical articles and suggestions for classroom preparation, which have been developed and approved by teachers in the classroom and developed, researched and validated by editorial staff, both in terms of subject and methodology, before being published. Also a homepage generator for primary schools is available: Primolo is a net-based tool which can be used free of charge and which enables primary school children accompanied by a teacher to design their own web sites.

Learn:Line (http://www.learnline.schulministerium.nrw.de/app/suche_learnline/): This service provides OER material in line with the curriculum of North Rhine-Westphalia, the largest federal state in Germany. Material in the media-server learn:line is mainly OER and comes from different sources. It always states the copyright.

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

Non-commercial organizations such as Wikimedia (<http://www.wikimedia.de/wiki/OERde13>) and Co:llaboratory (<http://www.collaboratory.de/w/Hauptseite>) are also great supporters of OER.

Most German OER platforms for schools are either small private initiatives or projects supported by federal educational ministries. In both cases, one can be sure that the people providing materials for the platform are activists who do it in their free time. The role of OER materials in schools up to secondary education is changing, the German concept remains to be seen, Norway, Finland, Poland and the Netherlands have already introduced OER in schools to support their educators.

Policies and Regulations Supporting OER

The various educational sectors – schools, vocational education and training, higher education and adult education – in Germany have a strong awareness of open access (OA) of digital materials. Research actors as well as the Federal Government and the Lander have initiated different activities to improve OA. The major research organizations and many institutions of higher education have OA policies. There are many institutional and discipline-specific repositories in Germany, which are maintained mostly by universities and research institutes. According to the registry of Open Access Repositories (ROAR), there are 167 OA institutional repositories in Germany. The German Initiative for Network Information (DINI) is supporting a national repository infrastructure. The Directory of Open Access Journals indexes 349 German Open Access journals. These journals are hosted by OA journal platforms, research institutions, and learning societies. Important German platforms which host OA Journals are: Copernicus Publications, Digital Peer Publishing NRW, German Medical Science, and Living Reviews.

The major research organizations (Max-Planck-Society, Leibniz Association, Fraunhofer Gesellschaft, Helmholtz Association) have Open Access policies. There is a general consensus to encourage OA publication in OA journals or depositing results and reports of research in Open Access repositories. The most important German funding agency, the German Research Foundation (DFG), has tied Open Access to its funding policy: Recipients of DFG-Funding are by default required to publish their research results digitally on the internet using an Open Access licence. The Federal Ministry of Education and Research (BMBF) plans to introduce a similar Open Access regulation for publicly funded research in Germany. A secondary publication right has been adopted recently to strengthen Open Access. It has been incorporated in the German copyright act. Now, scientists and researchers have the legal right to self-archive their publications on the internet, even if they have agreed to transfer all exploitation rights to their publisher. The regulation applies to results of mainly publicly funded research, twelve months after the first publication using the author's version. This right cannot be waived.

An initiative to strengthen awareness and openness in access to digital research artefacts is the “Berlin Declaration on Open Access to Knowledge”. The Berlin Declaration was initiated by the German Max-Planck-Society in 2003. The Berlin Declaration on Open Access to Knowledge has been signed by 53 German Institutions, including the largest research organizations as well as the German Rectors’ Conference which represents 258 universities and other HE institutions. The DFG provides lump sums for covering publication costs including Open Access fees and also has a funding programme “Open Access Publizieren” by which universities can apply for funding in order to cover Open Access publication charges by university-based authors. Since 2010, the DFG financially has supported so-called “Alliance Licenses”. In these concept publishers who publish journals under such (alliance) license permit German authors and their institutions to publish their articles apart from the respective journal also in Open Access repositories. Research organizations are funding Open Access publishing, and/ or have membership agreements with publishers on the central payment of publication fees for publications by their scientists in Open Access journals.

Within the BMBF-research programs the publication costs of research projects including Open Access may be funded. The open-access-platform provides detailed information about open access for scholars and other stakeholders. Moreover, information is presented from different user perspectives: authors, librarians, OA publishers, institutions running OA repositories.

While there is a strong awareness of Open Access, the term “Open Educational Resources” is not so well introduced, and even less familiar to the average German school teacher or university professor. The simplest reason for this is that there is no good equivalent term in German. Politically active teachers with a keen interest in technology are likely to pick up on the English “OER”, however, the majority of teachers in schools and universities are not aware of the huge benefits of OER in their educational practice.

Indicators on openness in educational contexts

The German association „Digital Society“, the Austrian association „Free Networks“ and the Swiss association „Digital Allmende“ have initiated a project on measuring digital openness in 2013, called the Index of Digital Openness (<http://www.do-index.org/idee-konzept/>). The concept is based on three objectives:

1. A holistic indicator set is intended to capture a multitude of digital initiatives on openness.
2. A measurement of digital openness intends to provide indication about the entrepreneurs and the forerunners of digital openness.
3. A regular carried out ranking intends to provide a better possibility to compare the different initiatives and public efforts to progress on the issue of digital openness (do:index).

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

The ranking is called [do:index], and is composed of five different parts which measure the contribution of different areas to the field of digital openness: data, information, knowledge, infrastructure as well as learning and teaching materials (OER). Collectively the rankings contain 60 different indicators in 97 questionnaires. The first data collection has been started in summer 2013. Results have been presented for the first time during the Re:publica-Conference in May 2014 in Berlin, Germany and are going to be updated continuously every year. In total 48 regions have been included in the survey in Germany, Austria and Switzerland. In Germany these are the 16 Lander and their capitals, as well as six further cities with more than 500.000 inhabitants (Dobusch & Palmetshofer, 2013). The ranking includes the issue of open education and aims to measure the policy objective to make education more freely available and comprises OER (Dobusch & Palmetshofer 2013; p.3). The OER questionnaire is composed of five categories: General information about OER, OER-Programs in educational institutions, licensing, lighthouse projects, and any further information. The following table (Table 1) shows the aggregated result in comparison of all 16 Lander of Germany.

Table 1: OER Ranking

	Berlin	Brandenburg	Baden-Württemberg	Bayern	Bremen	Hamburg	Hessen	Mecklenburg-Vorpommern	Niedersachsen	Nordrhein-Westfalen	Rheinland-Pfalz	Saarland	Sachsen	Sachsen-Anhalt	Schleswig-Holstein	Thüringen
Are public authorities providing information about OER?	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No	No	No	Yes	Yes	No	No
Land-specific Portal on OER exists?	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No
Public OER services?	Yes	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No
Public Certification Possibilities?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
OER Funding Programs available?	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
OER part of Training programs for teachers?	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Public OER advocacy and campaign?	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No	No
Member of OER associations?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Registered in OER policy register?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Teaching and learning materials without costs, reuse possible?	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Light-house OER projects?	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
OER Coordination point existing?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Massive Open online Courses (MOOCs) supported?	No	Yes	No	No	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No
# of positive replies	6	6	3	0	1	3	3	1	4	3	1	1	2	2	2	1

Summary and way forward

In Germany digital resources are in general available and accessible. The challenge is to move from digital resources to Open Educational Resources to Open Educational Practices (OEP). OEP needs to be supported more, in policy and in practice (Ehlers, 2011; Ehlers, 2014), in order to stimulate the (re)use and production of OER through institutional policies, promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path (see also ICDE, 2013; Ehlers, 2013). This is especially crucial for

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

Germany because although the general perception is that digital resources are available, availability is not use, and it can be seen that OER are not used frequently by educational professionals and not yet supported seriously in institutional policies. German educators therefore stand before the challenge to move from the focus on resources to a focus on using them, along with the respective open educational practices (OEP). In order to facilitate this shift from OER to OEP, it is important to provide more guidance and support to show how to deal with creation, assembly, use, sharing and reuse of OER for learners, educational professionals and organizational leaders. An additional challenge is to rethink the policies for publication and provision of teaching materials: Responsibility for education in Germany lies primarily with the federal states, and before materials can be offered to schools, teaching materials have to be approved by each federal state ministry. This is a difficult and lengthy process for non-commercial organizations, and so almost exclusively materials produced by commercial publishers are being approved at the moment. The entire approval system is based on the traditional publishing business model: a publisher develops a textbook, modifies it in accordance with a particular federal state's curriculum, gains approval from the relevant ministry, and ultimately offers it to schools after production. As a matter of fact, in many German federal states, schools are only allowed to spend their teaching materials budget on printed books.

To turn from a focus on resources to practices is also a turn from the notion of accessibility and availability to educational process and learning design. A look from the fields of the more general research debate to the country specific situation in Germany has shown that, in Germany, OER are relevant, also to the agenda of social and inclusion policies – and this is in line with other European countries (European Commission, 2013; European Commission, 2014). OER are supported by educational stakeholders, but their use in schools or higher education (HE) has not yet reached a critical threshold. This has to do with the fact that the past – and largely also the current – focus in OER in Germany is still mainly the emphasis on access to digital content and not its usage, and the creation of innovative and suitable educational scenarios.

References

1. Andrade, A., Ehlers, U.-D., Caine, A., Carneiro, R., Conole, G., Kairamo, A.-K., Koskinen, T., Kretschmer, T., Moe-Pryce, N., Muddin, P., Nozes, J., Reinhardt, R., Richter, T., Silva, G., & Holmberg, C. (2011). *Beyond OER: Shifting Focus from Resources to Practices*. Lisbon, Essen.
2. ASTD and Masie Center (2001). *If we build it will they come?* Alexandria.
3. Bates, T. (2015, February 23). What do we mean by quality when teaching in a digital age? [Blog post]. Online learning and distance education resources. Retrieved from <http://www.tonybates.ca/2015/02/23/what-do-we-mean-by-quality-when-teaching-in-a-digital-age/>
4. Baumgartner, P. (2007). *Zen and the Art of teaching. Communication and interaction in education*. Hagen.

5. Beggan, A. (2009). *Opening Up: Staff Attitudes to Open Learning*. Retrieved from <http://www.slideshare.net/OCWConsortium/staff-attitudes-to-open-learning>
6. Boyle, T., & Cook, J. (2004). Understanding and using technological affordances: a commentary on Conole & Dyke. *ALT-J*, 12(3).
7. Browne, T., Holding, R., Howell, A., & Rodway-Dyer, S. (2010). The challenges of OER to Academic Practice. *Journal of Interactive Media in Education (JIME)*, 2010(1). Retrieved from <http://jime.open.ac.uk/articles/10.5334/2010-3/>
8. Bund/Länder AG (2015). *Bericht der Arbeitsgruppe aus Vertreterinnen und Vertretern der Länder und des Bundes zu Open Educational Resources (OER)*. Retrieved June 20, 2015, from http://www.bildungserver.de/Bericht_AG_OER_2015-01-27.pdf
9. Camilleri, A. F., & Tannhäuser, A. C. (2013). Assessment and Recognition of Open Learning. *Openness and Education* (Vol. 1). Emerald Group.
10. Camilleri, A. F., Ehlers, U., & Pawlowski, J. (2014). *State of the art review of quality issues related to Open Educational Resources (OER)*. JRC Scientific and policy reports. Institute for Prospective technological Studies (IPTS).
11. Castaño-Muñoz, J., Redecker, C., Riina Vuorikari, R., & Punie, Y. (2014). Open Education 2030: planning the future of adult learning in Europe. *Open Learning* 28(3). Retrieved from http://www.researchgate.net/publication/260719655_Open_Education_2030_planning_the_future_of_adult_learning_in_Europe
12. CDU, CSU & SPD (2013). *Deutschlands Zukunft gestalten. Koalitionsvertrag zwischen CDU, CSU & SPD*. 18. Legislaturperiode. Retrieved April 26, 2014, from <https://www.cdu.de/sites/default/files/media/dokumente/koalitionsvertrag.pdf>
13. CHEA (CHEA International quality group) (January 2014). *Higher Education outside Colleges and Universities: How do we measure quality? Policy brief number 2*. Washington: CHEA International quality group.
14. Conole, G., & Weller, M. (2008). Using learning design as a framework for supporting the design and reuse of OER. *Journal of Interactive Media in Education*, 2008(1). Retrieved from <http://jime.open.ac.uk/articles/10.5334/2008-5/>
15. Conole, G. C., & Ehlers, U. D. (2010). *Open Educational Practices: Unleashing the power of OER*. Paper presented to UNESCO Workshop on OER in Namibia 2010. Windhoek
16. Dahl Jörgensen, M., Kristensen, S., Wipf, A., & Delplace, S. (2014). *Quality tools for professional education review and improvement*. PHExcel Consortium.
17. Dobusch, L., & Palmeshofer, W. (2013). *Offenheit ranken? Der digitale Offenheitsindex*. Beitrag zum Momentum Kongress 2013.
18. Ehlers, U.-D. (2011). From Open educational resources to open educational practices. *E-Learning Papers*, 17(1). ISSN 1887-1542

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

19. Ehlers, U.-D. (2014). *A Guide to quality, evaluation and assessment for future learning*. New York: Springer.
20. European Commission (2013). *Opening up education to boost innovation and digital skills in schools and universities*. Retrieved from http://europa.eu/rapid/press-release_IP-13-859_en.htm
21. European Commission (2014). *The European Union's High level Group on the Modernisation of Higher Education. New modes of learning and teaching in universities*.
22. Fosslund, T., Rye Ramberg, K., & Gjerdrum, E. (Ed) (2013). *Ulike forståelser av kvalitet i norsk, fleksibel høyere utdanning – eksempler fra teknologi og læring på og utenfor campus*. Norgesuniversitetets skriftserie nr. 1/2013 (In Norwegian). Retrieved from http://norgesuniversitetet.no/files/ulike_forstaelser_av_kvalitet.pdf
23. Gaebel, M., Kupriyanova, V., Morais, R., & Colucci, W. (2014). *E-learning in European Higher Education institutions. Results of a mapping survey conducted in October-December 2013*. Brussels: European University Association (EUA).
24. Geser, G. (2007). *Open Educational Practices and Resources - OLCOS Roadmap 2012*. Salzburg. Retrieved September 1, 2007, from <http://www.olcos.org/english/roadmap>
25. Hylén, J., Damme, D. V., Mulder, F., & D'Antoni, S. (2012). *Open Educational Resources: Analysis of Responses to the OECD Country Questionnaire*. OECD Education Working Papers, 76. OECD Publishing 2012. Retrieved from <http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=EDU/WKP%282012%2913&docLanguage=En>
26. Hegde, G., & Ponmudiraj, B. (Ed) (2013). *Guidelines for the Creation of the internal quality assurance cell (IQAC) and submission of annual quality assurance report (AQAR) in accredited institutions*. National assessment and accreditation council. Nagarbhavi, Bangalore: AQAAR.
27. ICDE (n.d.). *Strategic plan 2013-2016*. Retrieved from <http://www.icde.org>
28. International Institute for Educational Planning/UNESCO (2001). *IIEP Virtual Institute Discussion Forum. The Impact of HIV/AIDS on the Organization of Educational Systems*, 15 October – 9 November 2001, Paris, France. Retrieved September 1, 2007, from http://www.unesco.org/iiep/eng/training/virtual/hiv_rep_2001.pdf
29. INNOQUAL (2014). *Special Issue on Quality in Massive Open Online Courses*, 2(3). Retrieved from <http://papers.efquel.org/index.php/innoqual/issue/view/4>
30. Jackson, N., & Willis, J. (Eds) (2014). *Lifewide Learning & Education in Universities and College*. Retrieved from <http://www.learninglives.co.uk/>
31. Jung, I., Wong, M., & Belawati, T. (2013). *Quality assurance in distance education and e-learning. Challenges and solutions from Asia*. Los Angeles: SAGE.

32. Kahle, D. (2008). Designing open educational technology. In T. Iiyoshi & M. S. Vijay Kumar (Eds.), *Opening up education: The collective advancement of education through open technology, open content, and open knowledge* (pp. 27–45). Cambridge, MA: MIT Press.
33. Keller, P., & Mossing, W. (2008). *Reuse of material in the context of education and research*. Amsterdam
34. Lane, A., McAndrew, P., & Santos, A. (2009). *The networking effects of OER*. Paper presented at the 23rd ICDE World Conference 2009, 7-10 June 2009, The Netherlands.
35. Laurillard, D. (1993). *Rethinking University Teaching: A Framework for the Effective Use of Educational Technology*. London, New York: Routledge
36. Linn, M. C., Abelson, H., Dirks, L., Johnson, R., Smith, M. S., Szalay, A., Lynch, C. A., Oblinger, D. G., Pea, R. D., Koedinger, K., Salen, K., & Borgman, C. L. (2008). *Fostering Learning in the Networked World: The Cyberlearning Opportunity and Challenge* (Publication No. nsf08204).
37. Mapstone, S. (Ed), Buttendijk, S., & Wiberg, E. (2014). *Online learning at research intensive universities*. LERU Advisory paper no 16, June 2014. Retrieved from http://www.leru.org/files/publications/LERU_AP16__Online_Learning_at_RIUs_final.pdf
38. Mayes, T., & de Freitas, S. (2004). *Stage 2: Review of e-learning theories, frameworks and models. JISC E-learning models desk research study*. Retrieved November 17, 2010, from <http://www.elearning.ac.uk/resources/modelsdeskreview/view.html>
39. McGill, L., Currier, S., Duncan, C., & Douglas, P. (2008). *Good intentions: improving the evidence base in support of sharing learning materials. Project Report*. UNSPECIFIED. Retrieved from <http://ie-repository.jisc.ac.uk/265/1/goodintentionspublic.pdf>
40. McGill, L., Beetham, H., Falconer, I., & Littlejohn, A. (2010). *UKOER Pilot Programme Synthesis and Evaluation Report*.
41. OECD (2007). *Giving Knowledge Away for free*. Paris: OECD
42. Paavola, S., Lipponen, L., & Hakkarainen, K. (2004). Models of Innovative Knowledge Communities and Three Metaphors of Learning. *Review of Educational Research*, 74(4), 557-576.
43. Philip, R., Lefoe, G., O'Reilly, M., & Parrish, D. (2008). A peer review model for the ALTC Exchange: contributing to the landscape of shared learning and teaching resources. *Hello! Where are you in the landscape of educational technology? Proceedings ASCILITE Melbourne 2008, Melbourne, Vic., 30 November - 3 December, ASCILITE*, 776-779. Retrieved from <http://www.ascilite.org/conferences/sydney06/proceeding/onlineIndex.html>

Monitoring Progress on Open Education in Germany

Ulf-Daniel Ehlers

44. Punie, Y. (2104). *Report and recommendations Foresights on Open Education 2030*. European Commission Joint Research Centre – Institute for Prospective Technological Studies.
45. Rodrigo, C., Read, T., Santamaria, M., & Sánchez-Elvira, A. (2014). OpenupEd Label for MOOCs quality assurance: UNED COMA initial self-evaluation. *Proceedings of V Congreso Internacional sobre Calidad y Accesibilidad en la Formación Virtual (CAFVIR 2014)* L. Bengoechea, R. Hernández, & J. R. Hilera (Eds.), Universidad Galileo (Guatemala), 551 – 555 ISBN: 978-9929-40-497-7.
46. Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed.). New York: Free Press.
47. Stacey, P. (2010). Foundation Funded OER vs. Tax Payer Funded OER - A Tale of Two Mandates. *Open ED 2010 Proceedings*. Barcelona: UOC, OU, BYU.
48. UNESCO (2002). *Forum on the impact of Open Courseware for higher education in developing countries Final report*. Paris: UNESCO. Retrieved from <http://unesdoc.unesco.org/images/0012/001285/128515e.pdf>
49. Windle, R. J., Wharrad,H., McCormick, D., Laverty, H., & Taylor, M.G. (2010). *Sharing and reuse in OER: experiences gained from open reusable learning objects in health*. Milton Keynes, UK: Open University.
50. Wood, H., & Wood, D. (1999). Help Seeking, Learning and Contingent Tutoring. *Computers & Education*, 33(2), 153.