

Chapter 4

Fostering teachers' professional development

This chapter recognises that teachers and instructors are provided with new opportunities through open educational resources (OER). However, there is evidence that teachers require support to learn the necessary skills to benefit from the new degrees of freedom in designing relevant instructional materials. The four practice cases highlight different ways to support teachers, but also show that concerted efforts are needed to get beyond the self-motivated few. A key question for OER in teaching is the extent to which they are integrated into the curriculum. This chapter closes with a look at the alignment of OER in the design and delivery stages of educational provision.

Main policy messages

Collaboration around OER is essential. If teachers are to use information and communication technology (ICT) and to provide more learner-centred instruction, they need new tools and new skills, access to ICT and the competence to use technology in the classroom. Meeting their professional development needs is a precondition for their capability to impart 21st century knowledge and skills to their students. Collaboration around OER production and application must be explicitly supported for greatest effect.

Change the community culture around sharing. At present, much OER usage is based on “just-in-time enhancements” instead of more strategic, reflective integration into the curriculum. Whilst more reflective integration can be achieved after concerted institutional efforts (e.g. U-Now), a change to community culture is necessary to ensure collaboration and sharing of OER by teachers. This is because teachers and instructors often show a reluctance to share or collaborate in open networks.

Communities of practice can support teachers. Just as forming communities can support learners, communities of practice can support teachers as learners as they develop new skills and the confidence to share and collaborate on developing new educational materials and integrating them into the formal educational setting. Even so, just-in-time integration remains a major contribution to enriching the learning environment and should also be supported.

Policy challenge

Teachers are increasingly expected to provide more learner-centred forms of instruction through the use of digital technology. However, enabling teachers to provide students with adequate competencies for coping with a fast changing world has become a major challenge for education systems. Whilst routine, rule-based, compartmentalised knowledge is easiest to teach, it has become less relevant to the skills and competencies required of citizens in the 21st century (Schleicher, 2012).

Expert teachers are a prerequisite for the implementation of a challenging curriculum that stimulates higher order learning (Darling-Hammond and Post, 2000; McKinsey, 2007). They need to become actors of innovation in education who support knowledge and competence transfer between knowledge domains and creativity. New instructional technology can help, but research on media and technology over the last three decades has shown that the existence of technology does not facilitate new forms of learning on its own (OECD, 2014: 174; Selwyn, 2010). Stimulating learning through digital resources requires teachers to become “digital natives” in order to harness the new technological developments for better teaching (Atkins, Roberts and Higdon, 2013; Bates, 2015).

The recent OECD Teaching and Learning International Survey (TALIS) report showed that teachers in lower and upper secondary schools cited the issues of ICT and using new technologies in class as significant professional development needs (OECD, 2014: 109). This means that they are currently unable to harness the full potential of new technologies for improving teaching and learning. Alongside professional development in a formal setting, establishing communities of practice among teachers to facilitate collaboration and exchange can help teachers improve their teaching practice and overcome individual challenges (Vieluf et al., 2012: 34). This collaboration is seen as an important way of improving teaching and learning by avoiding the “silo model of education”, where innovations remain in individual classrooms and are not spread (Plotkin, 2010: 5).

Potential solution

The main users of OER are often teachers and instructors, whilst learners often benefit indirectly through an OER-enhancement of their learning environment. OER are flexible learning materials

that can be developed by collaboration between teachers and then adjusted to each teacher's individual teaching style and context. These degrees of freedom in designing relevant instructional materials can contribute to a greater sense of ownership and engagement of the teacher regarding his or her class. OER offer the potential to support both aspects – teacher engagement and their use of technology – and taken together, these enable creativity in teaching and learning (Lane and McAndrew, 2010).

Potential put into practice

- Creating OER from learning modules within a university:* The BERLiN project (Building Exchanges for Research and Learning in Nottingham) aimed to publish 360 credits of the United Kingdom's University of Nottingham's teaching and learning material as OER in order to investigate the development and use of OER issues faced by higher education institutions (Beggan et al., 2010). The project, which ran in 2010, was part of a series of continuing initiatives at the university to publish OER in its own repository: *U-Now*. In a survey of academics (n= 90; 6% of all university academics) as part of the project, the respondents showed an increased interest in using and publishing their own OER following the project. Whilst 70% of respondents said that they had not used OER in the past, only 14% said that they did not plan to use OER in the future; similarly, whilst 68% said that they had not published OER in the past, only 17% said that they did not foresee publishing OER in the future (Beggan et al., 2010: 23). Two of the ensuing recommendations for practice were to both raise awareness in educational institutions of the opportunities provided by OER and to offer institution-wide support. The authors also recommended that a clear reward structure for promoting excellence in teaching should be introduced in the English higher education system. Improving teaching and learning is often neglected by academics, who often see research excellence as a more important measurement for success.
- Professional training for teaching and learning with OER:* The OpenLine project provided seed-funding for the development of an open, five week long Massive Open Online Course (MOOC) entitled "First Steps into Learning and Teaching" offered by the United Kingdom's Oxford Brookes University (Roberts, 2012). It is a small-scale MOOC, which had over 200 registrations in 2012 and 60 constant participants throughout the course duration, with 14 undertaking the assessment and receiving a certificate. Participants were from 24 different countries including Australia, Canada, India, South Africa as well as many European countries and the United States. The participants explicitly learn how to integrate OER into their own lectures and courses and all resources used for the project are either OER from third parties or developed specifically for the course, but released with an open licence for reuse and repurposing. The course is now an element of the Oxford Centre for Staff and Learning Development (OCSLD) and can lead to an accredited Post-Graduate Certificate in Teaching in Higher Education. The course can be classed as a redefinition in comparison to other forms of professional teacher training as the blended learning format allows the participants to profit from the experiences and competencies of the other participants. It is supported through individual and group work and discussions on digital media (Moodle and blogs) and ends with an obligatory synchronous series of sessions.
- Exploring reuse of teacher training materials in an international context:* The DeFT project on Digital Future in Teacher Education has the explicit goal of training teachers at primary and secondary school levels to use digital technology in their lessons. It is run by Sheffield Hallam University and the University of Sheffield in the United Kingdom (Gruszczynska, Merchant and Pountney, 2013). The training uses an open textbook format with dynamic elements, which focus more on pedagogical rather than technical experience of using digital technology in school.¹ The project leaders from Sheffield Hallam University carried

out an add-on project to investigate the possibilities and constraints of reusing the materials in other national settings. For this project, they worked with three European universities – Akademia Gorniczo-Hutnicza (University of Science and Technology, Krakow, Poland), Katholieke Hogeschool Limburg (Limburg Catholic University College, Diepenbeek, Belgium) and Hogeschool van Arnhem en Nijmegen (University of Applied Sciences, Nijmegen, Netherlands) (Gruszczynska and Pountney, 2013). Results of the evaluation on the practicability of using the open textbook highlighted the need for adaptability, the need to translate the resource into another language, and the need to align the resource to a national curriculum, if the school system is structured around such a framework. The main impact of the project, according to the project participants, however, was more indirect – it was having the opportunity for knowledge and experience transfer rather than the possibility to adopt specific content.

- *A meta-repository for OER related to teacher training:* The project Share.TEC, which ran between 2008 and 2011 and was co-funded by the European Union, started out from the recognition that teaching can be improved through better exchange of experiences and materials across European countries. Its aim was to foster innovation in teacher training, and its target group were teacher trainers and teachers engaged in pre-service education and the continuous professional development of teachers (Bocconi, Earp and Sarti, 2011; Stefanova et al., 2011). The meta-repository aimed to connect to multiple repositories for teacher training-related materials in order to provide one central access point. In this context, special attention was paid to highlighting the pedagogical context of the OER in the metadata. In their final report, the project leaders stated that the ultimate success of the meta-repository was conditional on the active involvement of users and the engagement of existing professional communities and other stakeholders across Europe. At completion of the project's official project cycle, the meta-repository contained 26 000 materials. Following the end of the funded project lifecycle, the Share.TEC database was passed on to the University of Sofia St. Kliment Ohridski in Bulgaria that developed the portal. It is now largely used internally.

Understanding the potential for impact

The four cases above highlight the challenge and potential for using OER to support teachers' initial training and professional development, especially with regard to digital technology and the use of more interactive forms of learning.

The aim in all cases – whether direct or indirect – is to establish a community around and for OER. The BERLiN study showed that this can begin by raising awareness for the possibilities of OER within a single institution. The Share.TEC initiative highlights that without such a community, these and similar initiatives are likely to fail (see Chapter 9). A further example of the support provided by communities is the project “Teachers Advancing Common Core Learning” (TACCL) from Institute for the Study of Knowledge Management in Education (ISKME) in the United States, which addresses teacher isolation by building networks of collaborators around implementing the Common Core curriculum.²

Grade of curricular alignment

The role that OER plays in a teacher's or instructor's teaching and learning provision differs as the flexibility of OER means that many levels of integration are possible. Armellini and Nie (2013) provide a framework within which to view OER integration, which shows the timing of the integration of the OER (at delivery vs. during the design stage) and the adaptation of the OER (no change, i.e. as-is vs. repurposed). For instance, OER use may be planned in advance and the OER repurposed and used to design a full course curriculum (top right-hand corner), or used spontaneously, e.g. just-in-time use of a YouTube video during regular classes (bottom left-hand corner) – see Figure 4.1 below.

Figure 4.1. **Curricular alignment and adaptation of OER**

Integration into curriculum	During design	Planned enhancement	Strategic enhancement
	During delivery	Just-in-time enhancement	Reflective enhancement
		As is	Repurposed
		OER use	

Source: adapted from Armellini and Nie (2013), "Open educational practices for curriculum enhancement", <http://dx.doi.org/10.1080/02680513.2013.796286>.

In their study of OER reuse in United Kingdom higher education, Armellini and Nie (2013) examined how frequently OER was integrated in different ways. The authors reported similar findings to a study by the Open Education Quality Initiative (Andrade et al., 2011): the smaller the OER, the more likely they are to be integrated into an existing curriculum and to produce immediate teaching and learning enhancements (Weller, 2010). This finding is reinforced by the recent OER impact study in Community Colleges in the United States, where videos and images were found to be the most widespread types of OER (Farrow and Daly, 2014; FTI Consulting, 2015: 32). The type of minimum integration of existing OER in the bottom left-hand corner of Figure 4.1 remains an important first step in the context of the use and promotion of OER. Littlejohn et al. (2014) argue that reusing OER for more deliberate application will only become feasible after strategic efforts have been made to successfully change community cultures (see Chapters 9 and 11).

Notes

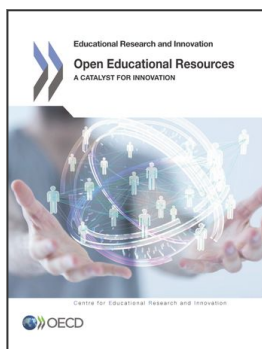
1. <http://www.digitalfutures.org/>.
2. <http://www.iskme.org/our-work/teacher-practice-network-project-teachers-advancing-common-core-learning>.

References

- Andrade, A. et al. (2011), *Beyond OER: Shifting Focus to Open Educational Practices*, OPAL report 2011, Open Educational Quality Initiative.
- Armellini, A. and M. Nie (2013), "Open educational practices for curriculum enhancement" in *Open Learning: The Journal of Open, Distance and E-Learning*, 28(1), pp. 7-20, <http://dx.doi.org/10.1080/02680513.2013.796286>.

- Atkins, H., C. Roberts and K. Higdon (2013), "On becoming digital educators: Supporting faculty and student growth in technological pedagogical content knowledge", in R. McBride and M. Searson (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2013*, AACE, New Orleans, LA, pp. 1229-1233, www.editlib.org/p/48292.
- Bates, A.W. (2015), *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning for a Digital Age*, BC Open Textbook, <http://opentextbc.ca/teachinginadigitalage/>.
- Beggan, A. et al. (2010), BERLiN - Building Exchanges for Research and Learning in Nottingham: Final Report, JISC, http://www.jisc.ac.uk/media/documents/programmes/oer/berlin_final_report_v1.0.pdf.
- Bocconi, S., J. Earp and L. Sarti (2011), *Share.TEC Final Report*, <http://www.share-tec.eu/content/final-reports>.
- Darling-Hammond, L. and L. Post (2000), "Inequality in teaching and schooling: Supporting high-quality teaching and leadership in low-income schools", in R.D. Kahlenberg (Ed.), *A Notion at Risk: Preserving Public Education as an Engine for Social Mobility*, pp. 127-167, The Century Foundation.
- Farrow, R. and U. Daly (2014), "OER impact at community colleges", in *eLearning 2014*, www.slideshare.net/UnaDaly/20140215-oerrh-cccoer-pres.
- FTI Consulting (2015), *U.S. Postsecondary Faculty in 2015: Diversity in People, Goals and Methods, but Focused on Students*, Gates Foundation, <http://postsecondary.gatesfoundation.org/wp-content/uploads/2015/02/US-Postsecondary-Faculty-in-2015.pdf>.
- Gruszczynska, A., G. Merchant and R. Pountney (2013), "Digital futures in teacher education: Exploring open approaches towards digital literacy" in *The Electronic Journal of E-Learning*, 11(3), pp. 193-206.
- Gruszczynska, A. and R. Pountney (2013), *Open Practice in International Teacher Education: Case Study*, The Higher Education Academy.
- Lane, A. and P. McAndrew (2010), "Are open educational resources systematic or systemic change agents for teaching practice?" in *British Journal of Educational Technology*, 41(6), pp. 952-962, <http://dx.doi.org/10.1111/j.1467-8535.2010.01119.x>.
- Littlejohn, A. et al. (2014), "Open networks and bounded communities: Tensions inherent in releasing open educational resources", in A. Littlejohn and C. Pegler (Eds.), *Reusing Open Resources: Learning in Open Networks for Work, Life and Education*, Routledge, Oxon, pp. 57-69.
- McKinsey (2007), *How the World's Best-Performing School Systems Come Out on Top*, http://mckinseysociety.com/downloads/reports/Education/Worlds_School_Systems_Final.pdf.
- OECD (2014), *TALIS 2013 Results: An International Perspective on Teaching and Learning*, TALIS, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264196261-en>.
- Plotkin, H. (2010), *Free to Learn: An Open Educational Resources Policy Development Guidebook for Community College Governance Officials*, <https://wiki.creativecommons.org/images/6/67/FreetoLearnGuide.pdf>.
- Roberts, G. (2012), *OpenLine Project: Final Report*, JISC, http://openbrookes.net/firststeps12/files/2012/08/OpenLinefinalreport2012-08-10_merged.pdf.
- Schleicher, A. (Ed.) (2012), *Preparing Teachers and Developing School Leaders for the 21st Century: Lessons from around the World*, International Summit on the Teaching Profession, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264174559-en>.
- Selwyn, N. (2010), "Web 2.0 and the school of the future, today", in OECD, *Inspired by Technology, Driven by Pedagogy: A Systemic Approach to Technology-Based School Innovations*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264094437-4-en>.

- Stefanova, E. et al. (2011), "Share.TEC: An innovative solution for teacher educators", in ICERI2011, pp. 1679-1688, ShareTEC, Madrid, <http://www.share-tec.eu/content/final-reports>.
- Vieluf, S. et al. (2012), *Teaching Practices and Pedagogical Innovations Evidence from TALIS*, TALIS, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264123540-en>.
- Weller, M. (2010), *Big and Little OER*, Open University, <http://oro.open.ac.uk/24702/2/926FFABC.pdf>.



From:
Open Educational Resources
A Catalyst for Innovation

Access the complete publication at:
<https://doi.org/10.1787/9789264247543-en>

Please cite this chapter as:

Orr, Dominic, Michele Rimini and Dirk Van Damme (2015), "Fostering teachers' professional development", in *Open Educational Resources: A Catalyst for Innovation*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264247543-6-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. Extracts from publications may be subject to additional disclaimers, which are set out in the complete version of the publication, available at the link provided.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.